Research on Evaluation of Equity Financing Efficiency of Listed Companies in Strategic Emerging Industries

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Abstract

This paper chooses 198 listed companies in strategic emerging industries, using DEA model to study the efficiency of equity financing, and carries on efficiency analysis, investment redundancy and output shortage analysis and industry comparative analysis. The results show that the efficiency of equity financing of listed companies in strategic emerging industries is inefficient. The comprehensive efficiency, pure technical efficiency and scale efficiency are 0.370, 0.603 and 0.563. From the scale pay, the economic scale of Chuanrungufen should be increased, Zhongguobaoan and other 179 decision-making units should be reduced; Dongxulantian and other 169 decision-making units have different levels of input redundancy and lack of output; equity financing efficiency is unevenly developed between different industries.

Keywords: Strategic emerging industries, Financing efficiency, Equity financing efficiency evaluation, Data envelopment analysis (DEA)

1. Introduction

Strategic emerging industries refer to breaking new ground in major cutting-edge technologies, representing the new direction for the development of science and technology and industry, and embodying the trend of development of the knowledge-based economy, circular economy and low-carbon economy in the world today. September 8, 2010 Premier Wen Jiabao chaired a meeting of the Standing Committee of the State Council to consider and adopt the "Accelerate the Cultivation and Development of Strategic Emerging Industries Decision" will be energy saving and environmental protection, a new generation of information technology, biomedicine, high-end equipment manufacturing, new energy sources , new materials and new energy vehicles and other seven industries designated as China's key strategic development of new industries. This injected a new

force into promoting the upgrading of China's industrial structure and effectively meeting social needs and supply. Strategic emerging industries are guided by Deng Xiaoping theory and the important thought of "Three Represents". They insist on giving full play to the fundamental role of the market and promoting the government-led role, insist on combining scientific and technological innovation with industrialization, and adhering to the overall promotion the four basic principles of combining the development across key areas with each other and insisting on enhancing the long-term competitiveness of the national economy and supporting the current development are committed to providing strong support for the sustainable economic and social development.

The theory of pecking order in corporate financing argues that the best financing order should be endogenous financing first and then exogenous financing. Exogenous financing should first be debt financing, and then equity financing [1]. However, the choice of financing methods in Chinese companies is

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the opposite. The financing structure of China's listed companies is mainly based on external financing, and the external financing is up to 80% of the financing structure. The internal financing is generally less than 20% of the financing structure, and a few even depend entirely on external financing. In terms of foreign financing, listed companies in China generally prefer equity financing, and debt financing is not considered. Therefore, it is impossible to optimize the company's financing structure by coordinating the proportion of equity financing and debt financing [2]. The sustainable development of strategic emerging industries cannot be separated from the choice of financing methods. And the capital-intensive and technology-intensive strategic emerging industries prefer the of equity financing. [3] Equity financing efficiency can effectively measure the degree of perfection of China's capital market and the degree of resource allocation, which is of great significance for national economic growth and sustainable development of strategic emerging industries.[4] Therefore, how to accurately and effectively evaluate the efficiency of equity financing of strategic new industry listed companies has become a major issue in the sustainable development of new strategic industries.

2. Literature review

As a way of exogenous financing, equity financing mainly refers to the behavior of listed companies raising funds by issuing shares, including two ways: public offering and private offering. In order to effectively study the efficiency of equity financing of listed companies in strategic new industries, this paper finds that many domestic and foreign scholars have studied equity financing and equity financing efficiency.

The famous American financial expert Modigliani and Miller (1958) [5] in the "American economic review published entitled" the cost of capital, corporate finance and investment theory "of the thesis, the thesis put forward the famous MM theory, they think, in the condition of perfect capital market, because of arbitrage mechanism, the company issued shares regardless of financing or bond financing will not affect the value of the company, namely, capital structure and company value. Sayuri Shirai (2004) [6] based on the theory of

financing constraints, constructs a regression model of the three ways of equity financing, bank lending and debt financing, which affect the company's investment decisions. The empirical results show that equity financing has not played a significant role, and thus lack of financing efficiency. Charnes et al (1989) [7] first introduced the DEA method into the evaluation of urban economic growth efficiency, and compared the economic performance level of 28 cities in China in 1983 and 1984. Sueyoshi (1992) [8] expanded the application of DEA in the area of urban efficiency evaluation, and investigated the resource allocation efficiency of 35 cities in China using DEA/AR model.

The domestic scholar Zhengde Xiong, Fangjuan Yang and Jun Wan (2014) [9] using two stage relational network DEA model, with the cost of debt financing, debt financing risk as input indexes, rate of return on assets, total assets turnover, operating income growth rate as output indexes, the debt financing efficiency of China's new energy automotive industry listed companies and the corresponding sub stage efficiency was calculated. Li Jingwen, Wang Yuchun et al (2014) [10] took the 51 strategic emerging industries listed companies in Beijing as samples, selected ten quarterly financial data since 2011, and took total assets, asset-liability ratio and total operating costs as input indexes, return on net assets, total asset turnover, total revenue growth as output indexes, using DEA method to measure and analyze financing efficiency. According to the total assets, assets and liabilities ratio as input indexes, return on net assets and Tobin's Q as the output indexes, Xiaoyan Qiao and Dongjun Mao (2015) [11] used DEA method to compare and analyze the efficiency of equity financing for 2010-2013 years in Jiangsu province 15 listed companies of the new energy, and based on the above results, the influence factors of efficiency are analyzed by the fixed effect model. Qiong Wang, Chengxuan Geng (2016) [12] extended the multi-stage DEA model, taking non-flow accountable and capital public reserve as input indexes and net profit and total operating revenue as output indexes to build a six-stage Super-SBM model Malmquist index model, the static and dynamic evaluation of the financing efficiency of 29 listed companies in strategic emerging industries in Jiangsu Province for 2009-2014. Ruibo Liu and Xuemei Zhang (2009) [13] from the perspective of financing efficiency,

apply data envelopment analysis (DEA) to the analysis and evaluation of the efficiency of equity financing of Expressway listed companies. The empirical results show that the efficiency of equity financing of our expressway listed companies is relatively low. We should improve the efficiency of equity financing from reforming input scale of equity financing, equity concentration and other input indexes, main business income growth rate and net assets yield index. Lichang Liu and Genfu Feng et al (2004) [14] used the data envelopment analysis method to take the 47 listed companies that initially listed in Shanghai stock market for 1998 as the research object, taking asset-liability ratio and ownership concentration as input indexes, net asset return rate, Tobin's Q value as the output indexes, a comprehensive evaluation of China's equity financing efficiency. Haokun Yan and Honghong Zhao (2014) [15] take the total assets, asset liability ratio and financial cost as input indexes, main business revenue growth rate and net assets yield ratio as output indexes. They use DEA model to analyze the financing efficiency of 23 listed companies in Inner Mongolia. The results show that the overall financing efficiency of the listed companies in Inner Mongolia is low, and only 5 of the 23 companies are satisfied with the DEA. On the basis of this, the basic idea of optimizing the financing efficiency of the listed companies is put forward. Wen Han, Kaihong Liu (2014) [16] take labor force, operating expenses, paid in capital as input indexes, premium income, payments for the output indexes by DEA model showed that DEA evaluation sample period the insurance business property insurance company operating performance; then, using two step cluster analysis, clustering analysis, clustering results were obtained clear. The empirical results demonstrate the feasibility and applicability of the DEA clustering method in the performance evaluation of the insurance business of property insurance companies. Yueping Dai and Hongmei Zhang (2013) [17] choose the data from 2012 and 2011 of China high tech industry statistical yearbook, and use DEA model to evaluate the efficiency of input-output of 31 provinces in China. The results show that the independent innovation efficiency of all the provinces in the last 5 years is generally low, and the national efficiency of Guizhou Province in the last 5 years has been greatly fluctuated and lack of stability.

In summary, most foreign scholars focus on the research on the enterprise value and its influencing factors, and research on the financing efficiency of enterprises. Domestic scholars have studied the financing efficiency of Chinese enterprises, especially the equity financing efficiency from different angles. However, most of them involve strategic emerging industries and their listed companies or their sample size is too small, but they also do not carry out a detailed analysis of their inputs, outputs and industries. Therefore, this article chooses 198 representative listed companies in China's strategic emerging industries as the research object, taking equity financing net value, ownership concentration, asset-liability ratio as input indexes, return on net assets, growth rate of main business, Tobin's Q value as output indexes, using data envelopment analysis (DEA) study on the efficiency of equity financing, and analysis of the efficiency, input redundancy and output deficiency of industry analysis and comparative analysis of the financing efficiency of the three aspects of strategic emerging industries listed companies analysis. This is of great theoretical and practical significance to improve the equity financing efficiency of listed companies in strategic emerging industries and to improve the strategic emerging industry market.

3. Introduction of DEA model

3.1. *Fundamental*

Data Envelopment Analysis (DEA) was proposed by Charnes, Coopor and Rhodes in 1978. The principle of this method is to maintain the input or input of DMU (Decision Making Units) by means of Mathematical programming and statistics identify relatively efficient frontiers of production, project each decision-making unit onto the DEA production frontier and evaluate their relative validity by comparing the extent to which decision-making units deviate from the DEA frontier.

Based on the concept of relative efficiency, DEA method uses convex analysis and linear programming as a method of evaluation. The mathematical programming model is used to calculate and compare the relative efficiency between the decision-making units and evaluate the evaluation objects. It can give full consideration to the optimal input-output plan for the decision-making unit itself, so it can reflect the information and characteristics of the evaluation object

more ideally. Meanwhile, it has its uniqueness for evaluating multi-input and multi-output of complex systems. It has the following characteristics:

First, it is applicable to the comprehensive evaluation of the effectiveness of multi-output and multi-input. It has an absolute advantage in evaluating the effectiveness of multi-output and multi-inputs.

Second, the DEA method does not integrate the data directly. Therefore, the optimal efficiency index of decision-making unit has nothing to do with the dimension selection of input index and output index. There is no need to dimensionless the data before establishing the model using the DEA method.

Third, no weight hypothesis is required. The decision-making unit input and output of the actual data to obtain the optimal weight, excluding a lot of subjective factors, with strong objectivity.

Fourth, the DEA method assumes that each input is associated with one or more outputs. And there is indeed some connection between the input and output, but do not have to determine the display of this relationship.

3.2. Construction of the model

3.2.1. Integrated efficiency model (CCR model)

There are n decision units DMU_j, where $j = 1,2, \dots, n$. Any DMU has m input vectors (input production factors) and s output vectors (output obtained), then

$$X_j = (x_{1j}, x_{2j}, x_{3j} \dots x_{mj}) > 0 \quad, \quad j = 1,2, \dots, n$$

$$Y_j = (y_{1j}, y_{2j}, y_{3j} \dots y_{sj}) > 0, j = 1,2, \dots, n$$

Where $j = 1,2, \dots, n$, X_{mj} denotes that the jth decision unit has m kinds of inputs, and Y_{sj} denotes the sth input of the jth decision unit. So for the jth DMU_j decision unit based on the minimum, inefficient, convex hypothesis production set:

$$T = \{(X, Y) | \sum_{j=1}^{n} X_j \lambda_j \leq X, \sum_{j=1}^{n} X_j \lambda_j \geq Y, \lambda_j \geq 0, j = 1,2, \dots, n$$

The input validity model of the DMU has the following CCRs:

$$\begin{cases} min\theta \\ \sum_{j=1}^{n} X_j \lambda_j + S^- = \theta X_0 \\ \sum_{j=1}^{n} Y_j \lambda_j - S^+ = Y_0 \\ \lambda_j \geq 0, j = 1,2 \dots n \\ S^+ \geq 0, S^- \geq 0 \end{cases}$$

The CCR model is "comprehensively effective" in terms of the effective and technologically efficient DMU. Assuming that the optimal solution is θ, λ, S^+, S^-, the effective judgments and economic explanations are as follows:

(1) If $\theta = 1, S^+ = 0, S^- = 0$, then the decision unit DMU_j is said to be valid for the DEA under the CCR model, indicating that the decision unit is comprehensive and effective, that is, both the scale efficiency and the technical efficiency Best, there is no "excess" investment and "deficit" output;

(2) If $\theta = 1, S^+ \neq 0, S^- \neq 0$, the decision unit DMU_j is said to be weakly valid for the DEA in the CCR model. Although there is no need for isometric compression in terms of input, there are some aspects of "excess" Input or "deficit" output;

(3) If $\theta < 1$, then the decision unit DMU_j is said to be valid for non-DEA under the CCR model, indicating that the input can be fully compressed by θ [18].

3.2.2. Technical efficiency model (CCGSS model)

There are n decision units DMU_j, where $j = 1,2, \dots, n$, And $X_j = (x_{1j}, x_{2j}, x_{3j} \dots x_{mj}) > 0$, $Y_j = (y_{1j}, y_{2j}, y_{3j} \dots y_{sj}) > 0$, the CCGSS model is

$$\begin{cases} min\theta \\ s.t. \sum_{j=1}^{n} X_j \lambda_j + S^- = \theta X_0 \\ \sum_{j=1}^{n} Y_j \lambda_j - S^+ = Y_0 \\ \sum_{j=1}^{n} \lambda_j = 1 \\ \lambda_j \geq 0, j = 1,2, \dots, n \\ S^+ \geq 0, S^- \geq 0 \end{cases}$$

The optimal value can be obtained by this model. When $\sum_{j=1}^{n} \lambda_j < 1$ is the scale returns increasing,

$\sum_{j=1}^{n} \lambda_j = 1$ is the scale returns constant; $\sum_{j=1}^{n} \lambda_j > 1$ is the decreasing returns to scale. Suppose the optimal solution is θ, λ, S^+, S^-, the effective judgments and economic explanations are as follows:

(1) If $\theta < 1$ or $S^+ \neq 0$, $S^- \neq 0$, DMU_j is non-DEA valid (CCGSS);

(2) If $\theta = 1, S^+ = 0, S^- = 0$, then DMU_j is DEA valid (CCGSS).

When (2) is satisfied, it indicates that DMU_j is purely technical, otherwise non-technical. When $S^- \neq 0$, it indicates that there is excess investment; when $S^+ \neq 0$, it indicates that there is a loss output. When $0 < \theta < 1$, it indicates that the DMU is improperly input and can be compressed in equal ratio, which is non-technical and effective.

To sum up, the CCR model is used to evaluate whether the decision-making unit is both efficient and technically effective. However, the CCGSS model is only used to evaluate whether the technical efficiency is the best. Combining the two can make the combination of technical efficiency and economies of scale Analysis [19].

3.3. *General steps*

3.3.1. Determine the evaluation objectives

Evaluation is the most basic function of DEA model, which is the basis of our correct application of DEA model. Only by determining the purpose of evaluation, can we find the right direction, select the appropriate model and collect the appropriate data to substantiate the problems in production and life. This requires that we be able to accurately translate the information in economic activity into the information required by the DEA model or to correspond one-on-one with the relevant concepts of DEA.

3.3.2. Select the decision unit DMU

Since DEA evaluates the relative validity of DMUs of the same type, the following two points need to be followed in the selection of DMUs: First, DMUs must be of the same type, DMUs of the same nature or DMUs with the same time interval; Then, the number of DMU should be selected as the input and output data of the sum of 2 times is appropriate.

3.3.3. Establish input and output index system

The establishment of the input and output index system needs to pay attention to the following points: First of all, it is necessary to reflect the purpose of evaluation truthfully and comprehensively. Secondly, attention should be paid to the relationship between input indicators and output indicators. At the same time, we should try to avoid the multiple linear relationship between input and output indicators; Finally, to ensure the diversity and availability of input and output indicators.

3.3.4. Select the DEA model

The choice of DEA model to follow the following two requirements: first, pay attention to the actual production and life background; the second is to choose the DEA model for evaluation purposes. In addition, different models can be applied for multi-angle analysis in order to arrive at a more comprehensive evaluation.

3.3.5. Evaluation and analysis of DEA results

This is the most critical step in the application of DEA model. By collecting data and calculating models, we get the result of DEA model. Based on this result, we analyze the real economic problems, and provide an accurate direction for policymakers to formulate effective policies and solve practical problems.

3.3.6. Adjust the input and output index system

When the result of DEA evaluation and analysis is unsatisfactory, we should adjust the input and output index system appropriately and reconsider it without violating the purpose of evaluation. By using a variety of DEA models to analyze different angles, the different results are compared and the important factors that affect the decision making unit are observed.

3.3.7. Draw a comprehensive analysis and evaluate the conclusion

By calculating the DEA model, we can get the following information: the DEA validity of each DMU, the relationship between the relative efficiency of DMU and the input and output indexes, the relative effective production frontier and the projection of DMU on the

effective production frontier. To make a comprehensive analysis and evaluation of these results, we can formulate a scientific and reasonable policy [20].

4. Empirical analysis

4.1. *Determination of evaluation index*

4.1.1. Input indexes

(1) Equity financing net value

Since this paper mainly investigates the efficiency of equity financing, after we choose the total amount of equity financing acquired by the company after IPO, deducting the weighted financing cost, we get the net equity financing of the company. In order to ensure the validity of the model, it is transformed into a dimensionless the amount.

(2) Ownership concentration

The degree of ownership concentration affects the company's financing efficiency through its influence on the company's daily operation, so it is used as an input index to investigate the efficiency of financing. The index mainly uses the largest shareholders to share the total number of shares issued.

(3) Asset liability ratio

The target is to reflect the impact of the company's financial structure on equity financing. The calculation method is to divide the total liabilities of the listed company by the total assets. This index mainly investigates the relationship between the tax credit effect and the financing cost of the creditor's rights.

4.1.2 Output indexes

(1)Return on equity

This index reflects the profitability of shareholder investment in production and operation, which is the ratio of the company's net profit to the average net asset over a period of time. This paper introduces this index in the empirical evidence, intended to use this index to measure whether the profitability of the company after the equity financing has been enhanced.

(2) Main business revenue growth rate

This index reflects the company's growth ability. It can be calculated from the increase of income from main business over the previous year.

(3) Tobin Q

Tobin's Q reflects the allocation efficiency of equity financing, equal to the total market price divided by the replacement value. Since the replacement value of the company is assessed through acquisition, the replacement value is replaced by the net asset value of the company, which is the ratio of total turnover to total turnover over the years since the equity financing.

Table 4-1 Input and Output Indexes

Input indexes	Output indexes
Equity financing net value	Return on equity
Ownership concentration	Main business revenue growth rate
Asset liability ratio	Tobin Q

4.2. *Sample Selection and Data Sources*

This paper chooses 198 companies with certain representativeness and comparability as the research object after excluding the changes of the financial statements before and after the listing of the company, the negative output indicators and the financial indicators such as the secondary issuance. According to DEA's experience, it is only meaningful to analyze the sample size at least twice to three times more than the total number of input variables and output variables. The total number of input and output variables in this paper is 6, which meets the requirements. The data in this paper are all from the database of Tai`an (CSMAR) series research database. The sample table of the company in this paper is shown in table 1 of appendix.

Strategic new industries are divided into seven industries: energy saving, environmental protection, a new generation of information technology, biomedicine, high-end equipment manufacturing, new energy, new materials and new energy vehicles. Among the research objects in this sample, there are 29 energy saving and environmental protection industries, a total of 25 new generation of information technology industry, 34 biomedical industry, 30 high-end equipment manufacturing industry, 27 new energy industry, 25 new material industry, 28 new energy vehicle industry. The proportion of sample companies selected by each industry is shown in Fig.4-1.
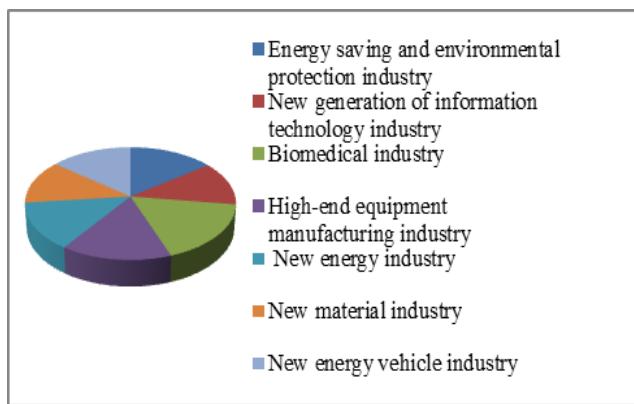
Fig.4-1 Distribution of Selected Samples by Industry

In this paper, the database of Tai`an (CSMAR) series research database are selected as input indexes and output indexes of each sample company in 2016, and the original data of each sample company are shown in table 2 of appendix.

4.3. *Evaluation results of equity financing efficiency*

This article intends to use DEAP Version 2.1 software to research the issue of equity financing efficiency of strategic new listed companies. The original data of input and output indexes in table 2 of appendix are substituted into the model software for calculation, and the shares of the strategic new industry listed companies financing evaluation results and the overall situation (see table 4-2), the evaluation results of equity financing of listed companies in strategic emerging industries are shown in table 3 of appendix.

4.4. *Analysis of the evaluation results of equity financing efficiency*

4.4.1 Efficiency analysis

(1) Comprehensive efficiency

The comprehensive efficiency is a comprehensive measure and evaluation of various aspects of the ability

of resource allocation and resource utilization of decision-making units. As seen from table 3 of appendix and table 4-2, from the comprehensive efficiency of DEA measurement, in 2016, the comprehensive efficiency of 18 decision-making units such as Shenzhennengyuan, Yichengxinneng, Shangqijituan Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, yinxinnengyuan, Hebeixuangong, Haigetongxin and Wandongyiliao and so on reached 1, indicating that the inputs and outputs of the above decision-making units are comprehensive and effective , that is both technically effective and scale effective. The proportion of comprehensive and effective decision-making units is 9.09%. However, the average comprehensive efficiency of the 198 publicly listed companies in strategic emerging industries is 0.370, indicating that the input and output of listed companies in strategic emerging industries are not comprehensively and effectively implemented. Among them, Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianchi, Yingtejituan, Zhongyuanhuanbao and other 180 decision-making units still has some space for improvement and improvement.

(2) Pure technical efficiency

Pure technical efficiency is the production efficiency of decision-making unit due to factors such as management and technology. It can be seen from table 3 of appendix and table 4-2,from the purely technical efficiency of DEA measurement, in 2016, the pure technical efficiency of 29 decision-making units such as Shenzhenneneyuan, Yamadun, Yinengxincheng, Yaxingkeche, Hongduhankong, Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, Yinxing Energy, Ankaikeche, HebeixuanongHager and so on reached 1, indicating that at the current technical level, the above-mentioned decision-making unit invested in the use of resources is efficient. The proportion of purely technical and effective decision making units is 14.65%. However, the average pure technical efficiency of the

Table 4-2 The overall efficiency of equity financing efficiency in strategic emerging industries

	Comprehensive efficiency	Pure technical efficiency	Scale efficiency
DEA effective	18（9.09%）	29（14.65%）	18（9.09%）
Non DEA effective	180（90.91%）	169（85.35%）	180（90.91%）
Mean	0.370	0.603	0.563

198 publicly listed companies in the strategic emerging industries is 0.603, which is not entirely technically effective. Among them, the management and technical level of 169 decision-making units such as Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianchi, Yingtejituan, Zhongyuanhuanbao, Wanxiangqianchao, Chinaguangheji, Huanruishiji, Kaidishentai, Xinxianghuaxian and Zhongkesanhuan should be improved.

(3) Scale efficiency

Scale efficiency is the production efficiency that is affected by the size of the decision unit. it can be seen from table 3 of appendix and table 4-2, from the scale efficiency of DEA measurement, in 2016, , The scale efficiency of 18 decision making units such as Shenzhennengyuan, Yinengxincheng, Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, Yinxingnengyuan, Hebeiuangong, Haigetongxin, Daomingguangxue and Wandongyiliao reached 1, indicating that these decision-making units are effective in scale. The proportion of effective decision-making units is 9.09%. However, the average of the scale efficiency of the 198 listed companies that represent the strategic emerging industries is 0.563, indicating that the overall performance of strategic emerging industries listed companies is not achieved. Among them, the scale efficiency of 180 decision-making units such as Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianqi, Yingtejituan, Zhongyuanhuanbao, Wanxiangqianchao, Fenghuagaoke, Huitianredian and Zhongtaiqiche still has some room for improvement and improvement.

(4) Returns to scale

From the returns to scale of view, Chuanrungufen shows the increasing returns to scale in production within the boundaries, that should be appropriate to increase the size of its economy, the scale and the input and output matching; Zhongguobaoan, Dongxulantian, Desaidianchi Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianchi, Yingtejituan, Zhongyuanhuanbao, Wanxiangqianchao, Fenghuagaoke, Zhongguangheji, Huanruishiji, Kaidishentai, Xinxianghuaxian, Zhongkesanhuan, Zhongtaiqiche, Huagongkeji, Jingxinyaoye, Xinhaiyi, Jinzhikeji, Leibaogaoje, Wohuayiyao, Sanweitongxin and other

179 decision-making unit in the production boundary performance of scale returns diminishing, indicating that its economic size should be appropriately reduced to make the scale and investment matching; the remaining 18 decision-making units in the production boundary performance for the same scale returns, then the economy should remain the same size.

4.4.2 Analysis of insufficient input redundant output

DEAP Version 2.1 software gives the DEA evaluation value of equity financing efficiency of listed companies in strategic emerging industries, and also gives the values of slack variables of inputs and outputs of each decision unit, that is, inputting redundant values and outputs Insufficient value, the results see table 4 of appendix.

Table 4 shows that Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianchi, Yingtejituan,Zhongyuanhuanbao, Wanxiangqianchao, Fenghuagaoke Huitianredian, Yingluohua, Zhongguangheji, Huanruishiji, Kaidishentai, Xinxianghuaxian, Zhongkesanhuan, Zhongtaiqiche, Huagongkeji, Jingxinyaoye and other 169 decision-making unit there are varying degrees of input redundancy and output deficiencies. In the case of Shenwuhuanbao, there were 0.092 million yuan of net investment in equity financing. There was 1.447% investment redundancy in the ownership concentration and 4.079 in the asset-liability ratio; net assets yield was 91340.018 output deficiency, there are 29.955 output deficits in the main business yield, 0.342 output deficit in Tobin Q. Only after eliminating the above input redundancy and insufficient output can Shenwuhuanbao Company reach purely technical and effective. The remaining 168 decision-making unit input redundant output analysis, and so on.

4.4.3 Industry comparative analysis

September 8, 2010 Premier Wen Jiabao chaired a meeting of the Standing Committee of the State Council to consider and adopt the "Accelerate the Cultivation and Development of Strategic Emerging Industries Decision" will be energy saving and environmental protection, a new generation of

information technology, biomedicine, high-end equipment manufacturing, new energy sources , new materials and new energy vehicles and other seven industries designated as China's key strategic development of new industries. Among them, the energy-saving and environmental protection industries include 29 companies such as Dongxulantian, Zhongyuanhuanbao, Kaidishentai, Huitianxincai, Xianhehuanbao, Shenwuhuanbao, Zhongdianhuanbao, Tianhaohianjing, Zhongcaijieneng and so on; the new generation of information technology industry include 25 companies such as Tefaxinxi, Huanruishiji, Xinhaiyi, Sanweitongxin, Beiweikeji, Guangxunkeji, Shensunda A and so on. The biopharmaceutical industry includes 34 companies such as Zhongguobaoan, Haiwangshengwu, Fengyuanyaoye, Jingxinoyey, Wohuayiyao and so on. The high-end equipment manufacturing industries include30 companies such as Xujidianqi, Huagongkeji, Hezhongsizhuang, Siweituxin, Teruide, Zhongguoweixin and so on. The new energy industries include 27 companies such as Shenzhennengyuan, Huitianredian, Yingluohua, Jinzhikeji, Tuorixinneng, Yamadun and so on. The new materials industry include25 companies such as Desaidianchi, Fenghuagaoke, Zhongguangheji, Xinxianghuaxian, Zhongkesanhuan, Xinyegufen, Zhonggangtianhuan and so on. The new energy automotive industries include 28 companies such as Wanxiangqianchao, Zhongtaiqiche, Yinlungufen, Yataigufen and so on.

Based on the data in table 4-3, we can calculate the DEA average of the financing efficiency of the seven major industries such as energy saving and environmental protection, new generation of information technology, biomedicine, high-end equipment manufacturing, new energy, new materials and new energy vehicles. The results, as shown in figures 4-2, 4-3 and 4-4, show that the equity financing efficiency of listed companies in china's strategic emerging industries has an unbalanced development between industries. Among them, the average value of comprehensive efficiency from high to low is the high-end equipment manufacturing industry, new energy industry, energy saving and environmental protection industry, new energy automotive industry, a new generation of information technology industry, bio pharmaceutical industry, new materials industry; pure technical average value from high to low is the energy
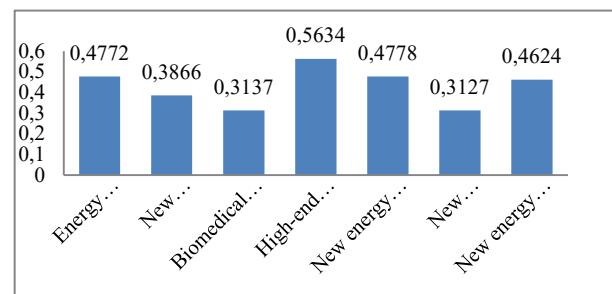
Fig.4-2 The average of the comprehensive efficiency of each industry
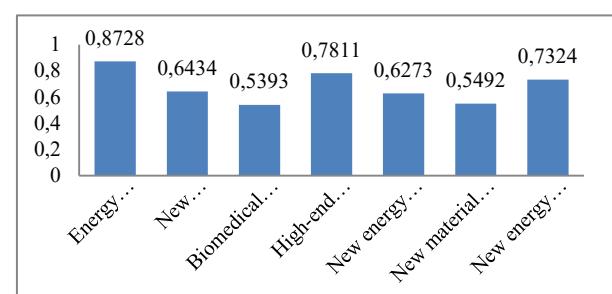
Fig.4-3 The average of pure technical efficiency of each industry
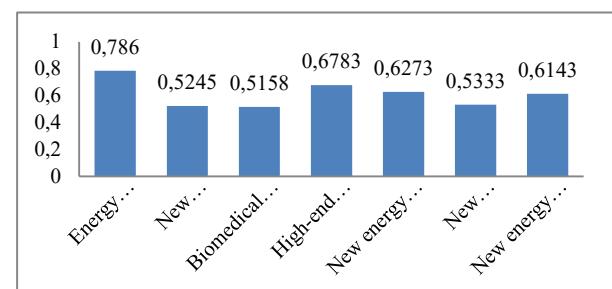
Fig.4-4 The average of scale efficiency of each industry

saving and environmental protection industry, high-end equipment manufacturing industry, the new energy automotive industry, a new generation of information technology industry, new energy industry, new material industry, bio pharmaceutical industry; the average scale efficiency from high to low is the energy saving and environmental protection industry, high-end equipment manufacturing industry, new energy industry, new energy automotive industry, new material industry, a new generation of information technology industry, bio pharmaceutical industry.

5. Conclusions

This paper selects a representative 198 listed companies from the strategic emerging industries as the research object, starting from the efficiency of equity financing based on capital input and output efficiency, with the previous definition of the financing efficiency as the theoretical basis established the evaluation index system of equity financing efficiency, and used DEA-BCC model to evaluate the equity financing efficiency of listed companies in strategic emerging industries, thus draw the following conclusions:

First, the average comprehensive efficiency of listed companies in strategic emerging industries is 0.370, indicating that the input and output of listed companies in strategic emerging industries are not comprehensively and effectively implemented. Among them, Shenzhennengyuan, Yichengcinneng, Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, Yinxingnengyuan, Hebeixuanong, Haigetongxin, Daomingguangxue, Metainuo, Nandudianyuan, Wandongyiliao and other 18 decision-making unit to achieve comprehensive and effective; Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianqi, Yingtejituan, Zhongyuanhuanbao and other 180 decision-making units have not been comprehensively and effectively implemented.

Second, the average net technical efficiency of listed companies in strategic emerging industries is 0.603, which is not entirely purely technical and effective. Among them, 29 decision-making units such as Shenzhennengyuan, Yamadun, Yichengxinneng, Yaxingkeche, Hongduhankong, Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, Yinxingnengyuan, Ankaikeche and Haigetongxin reached the purely technical and effective level. 169 decision-making units such as Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Yingtejituan, Zhongyuanhuanbao Wanxiangqianchao, Fenghuagaoke, Huitianredian, Yingluohua, Huanruishiji, Kaidishentai, Xinxianghuaxian and Zhongkesanhuan did not reach pure Effective technology.

Thirdly, the average size efficiency of listed companies in strategic emerging industries is 0.563, indicating that the listed companies in strategic emerging industries are not achieving the overall scale effective. Among them, Shenzhennengyuan, Yichengxinneng, Zhenhuazhonggong, Xugongjixie, Liugong, Haimaqiche, Yinxingnengyuan, Hebeixuanong, Haigetongxin, Daomingguangxue, Metainuo, Nandudianyuan, Wandongyiliao and other 18 decision-making unit to achieve the scale of effective. 180 decision-making units such as Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianqi, Yingtejituan, Zongyuanhuanbao, Wangxiangqianchao, Fenghuagaoke, Huitianredian, Yingluohua, Huanruishiji, Kaidishentai, Xinxianghuaxian, Zhongkesanhuan and Zhongtaiqiche have not achieved the scale effective.

Fourth, From the returns to scale of view, Chuanrugufen`s economies of scale should be increased; Zhongguobaoan, Dongxulantian, Desaidianchi, Haiwangshengwu, Fengyuanyaoye, Xujidianchi, Yingtejituan, Zhongyuanhuabao, Wanxiangqianchao, Fenghuagaoke, Huitianredian, , Huanruishiji, Kadishentai, Xinxianghuaxian, Zongtaiqiche, Huagongkeji, Jingxinyaoye, Xinhaiyi and other 179 decision making units should be reduced; the remaining 18 decision making units economic scale should remain unchanged.

Fifth, Zhongguobaoan, Dongxulantian, Desaidianchi, Tefaxinxi, Haiwangshenwu, Fengyuanyaoye, Xujidianqi, Yingtejituan, Zhongyuanhuanbao, Wanxiangqianchao, Fenghuagaoke, Huitianredian, Yingluohua, Huanruishiji, Kaidishentai, Xinxianghuaxian, Zhongkesanhuan, Zhongtaiqiche, Jingxinyaoye, Xinhaiyi and other 169 decision-making units have varying degrees of input redundancy and output deficiencies.

Sixthly, the equity financing efficiency of the listed companies in the strategic emerging industries has the unbalanced development among industries. Among them, the average value of comprehensive efficiency from high to low is the high-end equipment manufacturing industry, new energy industry, energy saving and environmental protection industry, new energy automotive industry, a new generation of information technology industry, bio pharmaceutical industry, new materials industry; pure technical average value from high to low is the energy saving and environmental protection industry, high-end equipment

manufacturing industry, the new energy automotive industry, a new generation of information technology industry, new energy industry, new material industry, bio pharmaceutical industry; the average scale efficiency from high to low is the energy saving and environmental protection industry, high-end equipment manufacturing industry, new energy industry, new energy automotive industry, new material industry, a new generation of information technology industry, bio pharmaceutical industry.[21]

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Appendices

Table 1: 198 listed companies of strategic emerging industries

Enterprise name	Stock code	Enterprise name	Stock code
Zhongguobaoan	000009	Shenzhennengyuan	000027
Dongxuliantian	000040	Desaidianchi	000049
Tefaxinxi	000070	Haiwangshenwu	000078
Fenyuanyaoye	000153	Xujidianqi	000400
Yingtejituan	000411	Zhongyuanhuanbao	000544
Wanxiangqianchao	000559	Fenhuagongke	000636
Huitianredian	000692	Yingluohua	000795
Zhongguangheji	000881	Huanruishiji	000892
Kaidishentai	000939	Xinxianghuanxian	000949
Zhongkesanhuan	000970	Zhongtaiqiche	000980
Huagongkeji	000988	Jingxinyaoye	002020
Xinhaiyi	002089	Jinzhikeji	002090
Laibaogaoke	002106	Wohuayiyao	002107
Sanweitongxin	002115	Yinlungufen	002126
Tuobangufen	002139	Beiweikeji	002148
Laiyinshenwu	002166	Tuorixinneng	002218
Guanxunkeji	002281	Yataigufen	002284
Gelinmei	002340	Hezhongsizhuang	002383
Siweituxin	002405	Duofuduo	002407
Kanshenggufen	002418	Shuanghuanchuangdong	002472
Rongjiruanjian	002474	Jiangfencicai	002600
Yamadun	002623	Teruide	300001
Yiweilineng	300014	Huitianxincai	300041
Shuzizhengtong	300075	Yichengxinneng	300080
Dongfangrishen	300118	Xianhehuanbao	300137
Shenwuhuanbao	300156	Zhengdongzhiyao	300158
Zhongdianhuanbao	300172	Chulingxixin	300250
Tianhaohuanjing	300332	Kanxinxincai	600076
Shangqijituan	600104	Dongkuigufen	600114
Zhongguoweixing	600118	Mingjiangshuidian	600131

Futianqiche	600166	Yaxingkeche	600213
Hongduhangkong	600316	Zhneghuazhonggong	600320
Hangtiandongli	600343	Kunyaojituan	600422
Hengtongguangdian	600487	Guihanggufen	600523
Yijingguangdian	600537	Guanguyuan	600771
ShensangdaA	000032	Xugongjixie	000425
Liugong	000528	Haimaqiche	000572
Qidiguhan	000590	Shantuigufen	000680
Xinyegufen	000751	Xinhuazhiyao	000756
Zhonghanfeiji	000768	Bohaihuosai	600960
Qinchuangjichuang	000837	Yinxingnengyuan	000862
Ankaiqiche	000868	Faershen	000890
Yunneidongli	000903	Shandahuate	000915
Hebeixuangong	000923	Zhongguozhongqi	000951
Fousukeji	000973	Jiuzhitang	000989
Shirongzhaoye	002016	Zhouyankeji	002046
Hengdiandongci	002056	Zhonggangtianyuan	002057
Suzhougude	002079	Longjigufen	601012
Zhongcaijieneng	603126	Woerhecai	002130
Yunhaijinshu	002182	Zhengtongdianzi	002197
Feimaguoji	002210	Aotexun	002227
Aoweitongxin	002231	Dahuagufen	002236
Chuanrungufen	002272	Zhongdianxinlong	002298
Dongfangyuanlin	002310	Gellinmei	002340
Longjijixie	002363	Dongshanjingmi	002384
Neimengyiji	600967	Shenglutongxin	002446
Haigetongxin	002465	Fuchunhuanbao	002479
Keshida	002518	Tianshunfengneng	002531
Yataikeji	002540	Yishengyaoye	002566
Qinxinghuanjing	002573	Shenyanggufen	002580
Daomingguangxue	002632	Maoshuodianyuan	002660
Jingweigufen	002662	Teyiyaoye	002728
Ankeshenwu	300009	Jiqiren	300024
Meitainuo	300038	Hekanxinneng	300048

Yujingangshi	300064	Nandudianyuan	300068
Danshenkeji	300073	Shengyunhuanbao	300090
Jiayugufen	300117	Zhejiangdingli	603338
Dafukeji	300134	Weiminghuanbao	603568
Yongqinghuanbao	300187	Xinwangda	300207
Qianshanyaoji	300216	Dongfangredian	300217
Meichengkeji	300237	Dianzhenduan	300244
Chanshanyaoye	300255	Jinduankeji	300258
Baanshuiwu	300262	Hejiagufen	300273
Yangguangdianyuan	300274	Sannuoshenwu	300298
Zhongjizhuangbei	300308	Bohuichuangxin	300318
Jinmokeji	300334	Mengcaoshentai	300355
Xuelanghuanjing	300385	Zhonglaigufen	300393
Feilihua	300395	Huannengkeji	300425
Sitongxincai	300428	Shanheyaopu	300452
Maikeshanwu	300463	Zhongfeigufen	300489
Meishangshentai	300495	Gaolangufen	300499
Wandongyiliao	600055	Huarunshuanghe	600062
Yutongkeche	600066	Jinhuagufen	600080
Yongdinggufen	600105	Beifangxitu	600111
Juhuagufen	600160	Jiangsuwuzhong	600200
Guangshengyouse	600259	Haizhengyaoye	600267
Guodiannanzi	600268	Hengruiyiyao	600276
Taihuagufen	600281	Shiyinggufen	603688
Hangfakeji	600391	Hanlianhuanjing	600323
Changjiangtongxin	600345	Lianchuangguangdian	600363
Ningboyunshen	600366	Shangongjintai	600385
Wukuangziben	600390	Sanyouhuagong	600409
Jianghuiqiche	600418	Peilingdianli	600452
Baotaigufen	600456	Guiyanboye	600459
Laobaixing	603883	Fenhuotongxin	600498
Zhongtiankeji	600522	Changyuanjituan	600525
Feidahuanbao	600526	Xiamengwuye	600549
Tiandikeji	600582	Nanjingxiongmao	600775
Shangchaigufen	600841	Hangfadongli	600893

Table 2: Input,output indexes and related raw datas

Company abbreviation	Input indexes			Output indexes		
	Equity finan-cing net value (Ten thousand yuan)	Ownership concentration （%）	Asset liability ratio	Return on equity	Main business revenue growth rate	Tobin Q
Zhongguobaoan	18000	11.9113	0.623791	0.051567	0.317839	1.029797
Shenzhennengyuan	36830	47.8246	0.592068	0.056656	0.016903	0.447504
Dongxulantian	12140	30.9812	0.365806	0.015992	1.265375	0.950595
Desaidianchi	6436	45.2277	0.708479	0.233108	0.034411	1.677195
Tefaxinxi	53460.62	39.1841	0.594942	0.111641	0.882775	1.565169
Haiwangshenwu	9667.6	45.9346	0.647212	0.084867	0.223803	1.001336
Fenyuanyaoye	45325	11.4827	0.537108	0.039653	0.308429	1.615621
Xujidianqi	44700	41.276	0.472021	0.124559	0.307734	1.279725
Yingtejituan	4646.4	21.5432	0.757153	0.113082	0.115792	0.656154
Zhongyuanhuanbao	15075	56.618	0.152379	0.056745	0.807481	1.82053
Wanxiangqianchao	11100	51.5291	0.589862	0.188514	0.053155	2.641354
Fenhuagaoke	11002.5	20.0286	0.316424	0.031979	0.430391	1.30635
Huitianredian	12719.46	35.1048	0.705711	0.042107	0.166339	0.700617
Yingluohua	28325	39.3785	0.20797	0.01569	0.465252	2.841968
Zhongguangheji	23625	27.6	0.53008	0.060528	0.439343	0.760075
Huanruishiji	24186.25	5.9062	0.178561	0.098234	53.968966	4.174999
Kaidishentai	28683	28.4657	0.68962	0.025709	0.430543	0.605557
Xinxianghuaxian	56752	30.1696	0.372869	0.032147	0.199627	1.370864
Zhongkesanhuan	25215	23.1744	0.133647	0.078054	0.011009	2.544025
Zhongtaiqiche	30681.79	19.9883	0.473969	0.04028	0.041599	1.852857
Huagongkeji	40680	32.3575	0.417369	0.073051	0.264986	2.496118
Jingxinyaoye	16517	23.1578	0.262634	0.089321	0.324762	2.198813
Xinhaiyi	13490.32	18.0506	0.62116	0.028052	0.091058	1.814412
Jinzhikeji	22973	36.916	0.644611	0.105423	0.509782	1.472001
Laibaogaoke	93265.7	20.8423	0.199965	0.059913	0.383746	1.707126
Wohuayiyao	17907	50.2671	0.18847	0.107317	0.200293	8.440842
Sanweitongxin	16648.17	19.0872	0.621308	0.025444	0.143054	1.679945
Yinlungufen	23043.88	11.156	0.466098	0.105559	0.145714	1.457458
Tuobangufen	17327.23	19.6085	0.32204	0.083375	0.263597	2.204443
Beiweikeji	20715.509	21.2504	0.090645	0.071153	1.037182	3.988281
Laiyinshenwu	15016.1	17.5723	0.652109	0.082234	0.110749	2.224834
Tuorixinneng	41068.4	32.5529	0.437158	0.047604	0.568097	1.156847
Guanxunkeji	61214.91	45.4344	0.395116	0.094016	0.292752	3.416419
Yataigufen	42211.337	38.8217	0.4493	0.055966	0.117497	2.110095
Gelinmei	70353.976	12.54	0.622371	0.041603	0.531296	0.999681
Hezhongsizhuang	104927.53	39.4551	0.270369	0.027372	0.545808	2.467085
Siweituxin	136777.3	12.2128	0.230614	0.036656	0.052553	5.006329
Duofuduo	99084.837	13.9279	0.452753	0.165225	0.3093	3.259756
Kanshengufen	66022.47	15.5804	0.698482	0.099706	0.287662	1.591019
Shuanghuanchuangdong	77277.998	8.8614	0.228187	0.061629	0.247183	1.965198
Rongjiruanjian	90566.32	20.6293	0.338254	0.017677	0.126668	3.951408
Jangfencicai	59961.75	18.4646	0.577755	0.046733	1.475008	0.945552
Yamadun	146868	45	0.493956	0.007921	0.27809	1.549758
Teruide	77928.3	43.9969	0.748315	0.065754	1.034825	1.473806

Tianlongguangqi	37392.79	42.1827	0.522712	0.150541	0.734491	2.84242
Huitianxincai	57117.407	23.2827	0.134061	0.061031	0.160359	2.741069
Shuzizhengtong	70255.3	30.4462	0.385291	0.098264	0.485614	3.133993
Yichengxinneng	148008	20.0219	0.476753	0.008974	0.405479	0.791892
Dongfengrishen	183757.98	32.5652	0.60289	0.183408	0.334125	1.116291
Xianhehuanbao	62650.328	13.8599	0.162212	0.078113	0.256952	2.816268
Shenwuhuanbao	110894.32	42.6771	0.487197	0.27446	1.572772	5.019875
Zhendongzhiyao	130505.44	43.7861	0.233178	0.036636	0.451311	1.480393
Zhongdianhuanbao	53860.62	28.9767	0.336518	0.102676	0.06689	2.9211
Chulingxinxi	22050.3	42.7341	0.098137	0.082983	0.229803	4.049243
Tianhaohuanjing	60990.82	21.2635	0.529938	0.013597	0.770685	0.958072
Kanxinxincai	26700	21.3127	0.192468	0.13107	0.268388	2.678145
Shangqijituan	208200	74.295	0.601955	0.186995	0.128313	0.437754
Dongkuigufen	43199.69	19.4549	0.148709	0.074687	0.072161	2.585874
Zhongguoweixin	12370	51.017	0.4703	0.080102	0.163146	3.402302
Mingjiangshuidian	17569	23.9211	0.565189	0.153201	0.214414	2.286302
Futianqiche	31000	27.0653	0.646346	0.02686	0.368691	0.382292
Yaxingkeche	36999.8	51	0.956045	0.319506	0.684865	0.737739
Hongduhangkong	87827	43.7703	0.522279	0.002468	0.307081	1.32524
Zhenhuanzhonggong	83800	28.8281	0.728936	0.018641	0.046222	0.324244
Hangtiandongli	22857.772	28.7781	0.39091	0.013658	0.199757	3.080362
Kunyaojituan	39343	29.7873	0.33139	0.113377	0.037617	1.972355
Hengtongguangdian	38016.6	19.3351	0.656001	0.224366	0.423001	1.173695
Guihanggufen	32755.42	37.0069	0.384845	0.082063	0.050131	1.752411
Yijinguangdian	28587.636	30.3608	0.572383	0.118439	0.050501	1.232354
Guangyuyuan	6750	23.2198	0.193013	0.089001	1.187008	5.51039
ShensangdaA	8400	27.8079	0.18994	0.021402	0.093641	3.226157
Xugongjixie	11040	42.5567	0.43458	0.016345	0.010659	0.538602
Liugong	20000	34.9758	0.45215	0.012268	0.090789	0.399605
Haimaqiche	16000	28.7966	0.1066	0.001935	0.114369	0.484404
Qidiguhan	5800	18.6099	0.55682	0.029638	0.022667	6.958307
Shantuigufen	37300.6	12.8127	0.53704	0.033263	0.290749	0.740825
Xinyegufen	65280	23.591	0.47083	0.061276	0.142051	1.935407
Xinhuazhiyao	3275	34.4595	0.56293	0.041142	0.146104	1.200706
Zhonghangfeiji	35700	38.1795	0.53861	0.023972	0.093937	1.500922
Qinchuangjichuang	19783	4.999	0.48565	0.00598	0.26126	0.751772
Yingxingnengyuan	28140	14.6453	0.62288	0.008091	0.078713	0.459694
Ankaiqiche	32820	21.1339	0.82949	0.041277	0.22801	0.509507
Faershen	36948.6	21.0656	0.75692	0.144655	0.12084	0.519541
Yunneidongli	37500	30.9655	0.44611	0.051304	0.381352	0.88804
Shandahuate	13499	20.7161	0.12023	0.168022	0.181025	3.059428
Hebeixuangong	19567.33	35.5402	0.7105	0.005127	0.02375	3.36523
Zhongguozhongqi	32396.54	63.7759	0.73288	0.096596	0.07623	0.444266
Fuosukeji	58045	5.8586	0.49031	0.071475	0.036139	1.489305
Jiuzhitang	34530	5.8439	0.08758	0.034818	0.114623	3.933827
Shirongzhaoye	17737.83	53.5709	0.20849	0.108033	0.432934	1.077128
Zhouyankeji	14783.99	39.5579	0.33056	0.034476	0.083552	1.775413
Hengdiancidong	61040.62	50.146	0.31203	0.111907	0.128831	1.961213
Zhonggangtianyuan	12829.22	25.9393	0.16786	0.019791	0.11988	4.923638
Suzhougude	22537.68	34.284	0.12605	0.087356	0.211722	3.80147
Longjigufen	151310.5	14.9446	0.38142	0.061057	0.95973	1.670124
Zhongcaijieneng	25120	2.2383	0.39708	0.081635	0.088168	2.091867

Wowehecai	20823.57	2.806	0.46708	0.018855	0.119996	1.851254
Yunhaijinshu	49632.15	6.4141	0.57318	0.011782	0.310188	2.036891
Zhengtongdianzi	23343.26	5.779	0.43747	0.017756	0.700349	1.784756
Feimaguoji	25387.15	50.0595	0.84064	0.072063	0.073705	0.911288
Aotexun	37539.58	57.5726	0.27216	0.024992	0.068753	5.328808
Aoweitongxin	21531.88	18.4978	0.22478	0.011085	0.23733	6.246577
Dahuagufen	38955.3	10.3138	0.18514	0.233542	0.302168	2.581213
Chuanrungufen	22181.79	3.8122	0.02606	0.003113	0.025215	2.452324
Zhongdianxinlong	24013.97	5.2163	0.1709	0.008062	0.074614	1.542406
Dongfangyuanlin	80103.85	8.2513	0.60675	0.09416	0.275175	2.016332
Gelinmei	70353.98	10.3159	0.53233	0.003037	0.471734	1.109946
Longjijixie	50896	45.5516	0.30383	0.03472	0.066615	1.908261
Dongshanjimi	95882.38	8.7742	0.76089	0.004494	0.361346	1.097664
Neimengyiji	34527	23.6185	0.4673	0.064681	24.638863	2.927052
Shenlutongxin	43002.5	4.5006	0.17994	0.030051	0.099744	4.009343
Haigetongxin	314314.4	16.9693	0.26216	0.082313	0.041283	2.764868
Fuchunhuanbao	133771.2	34.7541	0.20614	0.1019	0.192276	2.220042
Keshida	88362.82	60.1006	0.29619	0.132879	0.107002	3.596084
Tianshunfenneng	122682.9	29.8115	0.22284	0.058555	0.108446	1.573325
Yataikeji	154722.5	10.623	0.06154	0.07064	0.134139	2.717388
Yishenyaoye	103922.1	9.771	0.40291	0.028825	0.077862	1.559103
Qinxinhuanjiang	159048.6	45.0273	0.58945	0.217156	0.45448	1.887238
Shenyanggufen	43837.11	2.8958	0.41865	0.045569	0.119271	2.056385
Daomingguangxue	56736.49	42.182	0.17677	0.004946	0.036836	4.526761
Maoshuodianyuan	41418.55	7.5847	0.42547	0.015636	0.020701	1.932026
Jingweigufen	143213.8	30	0.43974	0.093117	0.199524	1.331809
Teyiyaoye	32180.69	2.9	0.44267	0.075389	0.18795	3.176194
Ankeshenwu	32109.5	6.7488	0.25408	0.106903	0.156789	7.523596
Jiqiren	57590	25.27	0.14804	0.072172	0.204218	5.255439
Meitainuo	55130	5.867	0.44249	0.013416	0.001622	2.410953
Hekanxinneng	96456.42	21.7151	0.19407	0.039542	0.052915	1.881521
Yujingongshi	74502.18	20.4566	0.21699	0.018039	0.464152	1.643184
Nandudianyuan	196564.9	4.3561	0.27284	0.022368	0.032202	1.862394
Danshengkeji	65537.19	27.0571	0.38001	0.025615	0.41984	4.759231
Shwnyunhuanbao	51262.02	6.7223	0.47692	0.008596	0.524326	1.247397
Jiayugufen	67769.9	39.6643	0.6294	0.064815	0.0408	1.067788
Zhenjiangdingli	43987.43	1.575	0.18195	0.160318	0.415431	5.58102
Dafukeji	186988.5	43.3888	0.21451	0.028971	0.082131	2.528019
Weiminghuanbao	45147.32	1.6236	0.06583	0.247014	0.09413	5.270439
Yongqinghuanbao	61352.57	58.2045	0.39453	0.065618	0.291912	3.375329
Xinwangda	82334.43	6.2204	0.71533	0.22284	0.363935	2.80671
Qianshanyaoji	46468.2	3.4452	0.65659	0.196326	0.868597	3.403831
Dongfangdianre	55924.64	3.9023	0.17367	0.032649	0.003564	2.56007
Meichengkeji	33231.09	3.7468	0.24912	0.048871	0.367727	2.276939
Dianzhenduan	27027.73	8.3066	0.55446	0.039967	0.299982	3.347799
Chanshangyaoye	69726.11	12.5569	0.25662	0.074874	0.28552	2.486892
Jingduankeji	58793.76	48.3557	0.23397	0.092779	0.156354	2.923013
Baanshuiwu	26742.12	10.4186	0.44756	0.062255	0.408375	2.176984
Hejiagufen	61004.08	5.0013	0.2824	0.044699	0.119007	3.763279
Yangguangdianyuan	127124.4	7.9717	0.47948	0.098043	0.485882	1.553448

Sannuoshenwu	58083.6	27.6498	0.1304	0.094702	0.234857	4.712694
Zhongjizhuangbei	29766.16	46.0071	0.12081	0.01809	0.084099	4.693377
Bohuichuangxin	35854.15	19.8865	0.19687	0.016975	0.192963	3.820974
Jinmokeji	44544.75	23.1869	0.38736	0.034106	0.210806	2.407568
Mengcaoshentai	37361.41	5.9687	0.50505	0.09888	0.600747	1.855393
Xuelanghuanjing	25810.54	1.0918	0.48881	0.113478	0.298417	2.804849
Zhonglaigufen	35000	7.6141	0.51244	0.221942	0.893895	2.596604
Feilihua	26983.01	7.0122	0.21285	0.115276	0.119594	5.003353
Huannengkeji	24403	1.2456	0.09319	0.031894	0.308065	4.260348
Sitongxincai	26842.62	0.2054	0.13374	0.111696	0.207206	8.550455
Shanheyaopu	14868.6	1.8982	0.21451	0.118519	0.085339	9.237657
Maikeshenwu	99732	5.9588	0.08749	0.14305	0.137017	5.640249
Zhongfeigufen	16203.37	6.7488	0.268	0.063789	0.138595	5.551527
Meishangshentai	49591.66	5.1021	0.33097	0.053404	0.193698	4.627519
Gaolaigufen	22761.43	1.9472	0.49794	0.120104	0.305244	5.135788
Wandongyiliao	12330	46.6818	0.15173	0.058092	0.010364	3.419443
Huanrunshuanghe	30503	38.8981	0.11882	0.098426	0.013767	1.78957
Yutongkeche	33075	27.114	0.60509	0.303712	0.155955	1.751181
Jinhuangufen	17880	15.7225	0.22583	0.026587	0.276149	2.53229
Yongdinggufen	23996.03	25.7401	0.21915	0.052393	0.041948	2.727364
Beifangxitu	34240	30	0.25873	0.084874	0.05082	2.841912
Juhuagufen	44341.68	48.7474	0.09062	0.006217	0.049251	1.927764
Jangsuwuzhong	25047.5	17.0103	0.19168	0.022737	0.147961	2.171001
Guangshengyouse	29710.11	37.2164	0.37972	0.025531	2.337913	3.147939
Haizhengyaoye	45979.83	33.2235	0.44983	0.000534	0.035507	0.700826
Guodiannanzi	30771	50.2603	0.74765	0.086113	0.112207	0.488345
Hengruiyiyao	46660	24.3076	0.08688	0.22595	0.209272	7.586455
Taihuagufen	55755	43.4783	0.69624	0.078889	0.17965	1.62128
Shiyinggufen	33084.48	2.828	0.04865	0.07237	0.081654	3.683754
Hangfakeji	24523	36.0184	0.61126	0.031833	0.088985	2.336412
Hanlanhuanjing	41825	17.9806	0.44463	0.035094	0.143528	0.907461
Changjiangtongxin	35460	28.6274	0.07628	0.019998	0.369324	2.519341
Lianchuangguangdain	38722	21.7288	0.22522	0.08026	0.168225	2.196961
Ningboshenrun	34845.57	31.3721	0.1723	0.137232	0.370272	2.053032
Shandongjintai	3977.72	17.3819	8.38	0.025617	0.051392	17.658202
Wukuangziben	58120	27.8393	0.10632	0.003036	0.278969	2.069426
Sanyouhuangong	57694.5	39.9839	0.4762	0.037353	0.441365	0.803604
Jianghuaiqiche	84119.15	7.0963	0.64123	0.073875	0.144266	0.511175
Peilingdianli	24348.16	51.6438	0.76181	0.188405	0.332232	2.104195
Baotaigufen	31088.4	56.0419	0.47841	0.018563	0.08157	1.150653
Guiyanboye	25939.8	39.3433	0.41914	0.038357	0.148653	1.971349
Laobaixing	101002.8	2.0548	0.50295	0.034679	0.273318	2.917035
Fenghuotongxin	179734.2	46.5749	0.70317	0.054282	0.370349	1.380452
Zhongtiankeji	35992	16.5882	0.33742	0.078633	0.268934	1.429016
Changyuanjituan	18085.6	3.9149	0.59015	0.038324	0.211132	1.265562
Feidahuanbao	27297.22	17.6519	0.64511	0.010392	0.154221	0.918951
Xiamengwuye	33354.83	26.0363	0.48819	0.030018	0.563182	1.751385
Tiandikeji	30222	36.3103	0.39303	0.022878	0.175307	0.54382
Nanjingxiongmao	11199.3	26.4147	0.09628	0.02091	1.0991	2.665993
Shangchaigufen	14335	48.0509	0.37862	0.027448	0.175091	1.616131
Hangfadongli	29744	29.7823	0.32432	0.035797	0.007234	1.325377
Bohaihuosai	30397	18.191	0.26409	0.001953	0.222484	1.449027

Table 3: Evaluation results of equity financing efficiency of listed companies in strategic emerging industries

Company abbreviation	Comprehensive efficiency	Pure technical efficiency	Scale efficiency	Returns to scale
Zhongguobaoan	0.291	0.589	0.494	drs
Shenzhennengyuan	1.000	1.000	1.000	-
Dongxulantian	0.464	0.663	0.700	drs
Desaidianchi	0.472	0.876	0.539	drs
Tefaxinxi	0.258	0.611	0.422	drs
Haiwangshenwu	0.447	0.744	0.600	drs
Fenyuanyaoye	0.234	0.441	0.532	drs
Xujidianqi	0.305	0.619	0.493	drs
Yingtejituan	0.513	0.858	0.598	drs
Zhongyuanhuanbao	0.355	0.938	0.378	drs
Wanxiangqianchao	0.267	0.895	0.299	drs
Fenhuagaoke	0.210	0.398	0.528	drs
Huitianredian	0.543	0.850	0.639	drs
Yingluohua	0.240	0.728	0.329	drs
Zhongguangheji	0.370	0.591	0.625	drs
Huanruishiji	0.035	0.125	0.284	drs
Kaidishentai	0.619	0.850	0.728	drs
Xinxianghuaxian	0.327	0.588	0.555	drs
Zhongkesanhuan	0.508	0.624	0.813	drs
Zhongtaiqiche	0.362	0.465	0.777	drs
Huagongkeji	0.172	0.533	0.323	drs
Jingxinyaoye	0.121	0.368	0.329	drs
Xinhaiyi	0.355	0.489	0.725	drs
Jinzhikeji	0.259	0.587	0.441	drs
Laibaogaoke	0.263	0.470	0.561	drs
Wohuayiyao	0.125	0.761	0.165	drs
Sanweitongxin	0.343	0.521	0.659	drs
Yinlungufen	0.175	0.377	0.464	drs
Tuobangufen	0.107	0.322	0.333	drs
Beiweikeji	0.076	0.341	0.222	drs
Laiyinshenwu	0.253	0.420	0.603	drs
Tuorixinneng	0.317	0.607	0.522	drs
Guanxunkeji	0.184	0.708	0.260	drs
Yataigufen	0.257	0.656	0.392	drs
Gelinmei	0.346	0.658	0.525	drs
Hezhongsizhuang	0.342	0.790	0.433	drs
Siweituxin	0.481	0.636	0.756	drs
Duofuduo	0.148	0.402	0.369	drs
Kanshengufen	0.195	0.566	0.345	drs
Shuanghuanchuangdong	0.219	0.355	0.616	drs
Rongjiruanjian	0.329	0.590	0.557	drs
Jangfencicai	0.296	0.593	0.499	drs
Yamadun	0.901	1.000	0.901	drs
Teruide	0.338	0.814	0.415	drs
Tianlongguangqi	0.159	0.611	0.261	drs
Huitianxincai	0.176	0.417	0.422	drs
Shuzizhengtong	0.137	0.496	0.276	drs
Yichengxinneng	1.000	1.000	1.000	-
Dongfengrishen	0.513	0.841	0.610	drs
Xianhehuanbao	0.136	0.300	0.454	drs
Shenwuhuanbao	0.096	0.588	0.163	drs
Zhendongzhiyao	0.519	0.871	0.596	drs
Zhongdianhuanbao	0.230	0.498	0.461	drs
Chulingxinxi	0.152	0.672	0.226	drs
Tianhaohuanjing	0.551	0.672	0.820	drs
Kanxinxincai	0.092	0.313	0.293	drs

Shangqijituan	1.000	1.000	1.000	-
Dongkuigufen	0.188	0.355	0.530	drs
Zhongguoweixin	0.206	0.816	0.253	drs
Mingjiangshuidian	0.142	0.378	0.376	drs
Futianqiche	0.765	0.860	0.890	drs
Yaxingkeche	0.637	1.000	0.637	drs
Hongduhangkong	0.847	1.000	0.847	drs
Zhenhuanzhonggong	1.000	1.000	1.000	-
Hangtiandongli	0.181	0.562	0.321	drs
Kunyaojituan	0.305	0.566	0.539	drs
Hengtongguangdian	0.249	0.586	0.424	drs
Guihanggufen	0.303	0.657	0.461	drs
Yijinguangdian	0.369	0.568	0.651	drs
Guangyuyuan	0.059	0.365	0.162	drs
ShensangdaA	0.215	0.490	0.439	drs
Xugongjixie	1.000	1.000	1.000	-
Liugong	1.000	1.000	1.000	-
Haimaqiche	1.000	1.000	1.000	-
Qidiguhan	0.293	0.433	0.676	drs
Shantuigufen	0.369	0.584	0.632	drs
Xinyegufen	0.224	0.483	0.462	drs
Xinhuazhiyao	0.359	0.680	0.528	drs
Zhonghangfeiji	0.409	0.736	0.556	drs
Qinchuangjichuang	0.683	0.726	0.941	drs
Yingxingnengyuan	1.000	1.000	1.000	-
Ankaiqiche	0.724	1.000	0.724	drs
Faershen	0.648	0.920	0.704	drs
Yunneidongli	0.372	0.607	0.613	drs
Shandahuate	0.077	0.286	0.269	drs
Hebeixuangong	1.000	1.000	1.000	-
Zhongguozhongqi	1.000	1.000	1.000	-
Fuosukeji	0.497	0.542	0.916	drs
Jiuzhitang	0.093	0.172	0.540	drs
Shirongzhaoye	0.459	0.814	0.563	drs
Zhouyankeji	0.327	0.684	0.478	drs
Hengdiancidong	0.292	0.755	0.386	drs
Zhonggangtianyuan	0.171	0.460	0.372	drs
Suzhougude	0.127	0.536	0.237	drs
Longjigufen	0.401	0.703	0.571	drs
Zhongcaijieneng	0.177	0.268	0.660	drs
Wowehecai	0.279	0.334	0.834	drs
Yunhaijinshu	0.340	0.468	0.728	drs
Zhengtongdianzi	0.238	0.324	0.733	drs
Feimaguoji	0.582	0.922	0.632	drs
Aotexun	0.495	1.000	0.495	drs
Aoweitongxin	0.077	0.372	0.208	drs
Dahuagufen	0.064	0.178	0.360	drs
Chuanrungufen	0.427	1.000	0.427	irs
Zhongdianxinlong	0.191	0.255	0.747	drs
Dongfangyuanlin	0.176	0.498	0.353	drs
Gelinmei	0.742	0.849	0.875	drs
Longjijixie	0.436	0.846	0.515	drs
Dongshanjimi	0.998	1.000	0.998	drs
Neimengyiji	0.128	0.412	0.311	drs
Shenlutongxin	0.134	0.223	0.601	drs
Haigetongxin	1.000	1.000	1.000	-
Fuchunhuanbao	0.309	0.642	0.481	drs
Keshida	0.310	0.876	0.354	drs
Tianshunfenneng	0.458	0.689	0.665	drs
Yataikeji	0.390	0.536	0.728	drs
Yishenyaoye	0.516	0.646	0.798	drs

Qinxinhuanjiang	0.288	0.724	0.398	drs
Shenyanggufen	0.193	0.340	0.567	drs
Daomingguangxue	1.000	1.000	1.000	-
Maoshuodianyuan	0.532	0.573	0.929	irs
Jingweigufen	0.405	0.707	0.572	drs
Teyiyaoye	0.118	0.245	0.482	drs
Ankeshenwu	0.066	0.156	0.423	drs
Jiqiren	0.127	0.432	0.293	drs
Meitainuo	1.000	1.000	1.000	-
Hekanxinneng	0.490	0.591	0.830	drs
Yujingongshi	0.319	0.465	0.687	drs
Nandudianyuan	1.000	1.000	1.000	-
Danshengkeji	0.154	0.547	0.281	drs
Shwnyunhuanbao	0.471	0.535	0.880	drs
Jiayugufen	0.647	0.841	0.769	drs
Zhenjiangdingli	0.048	0.157	0.307	drs
Dafukeji	0.764	1.000	0.764	drs
Weiminghuanbao	0.074	0.147	0.505	drs
Yongqinghuanbao	0.257	0.946	0.272	drs
Xinwangda	0.122	0.443	0.276	drs
Qianshanyaoji	0.086	0.330	0.260	drs
Dongfangdianre	0.796	0.825	0.965	drs
Meichengkeji	0.096	0.210	0.459	drs
Dianzhenduan	0.164	0.281	0.583	drs
Chanshangyaoye	0.161	0.319	0.503	drs
Jingduankeji	0.227	0.750	0.303	drs
Baanshuiwu	0.128	0.294	0.437	drs
Hejiagufen	0.169	0.278	0.607	drs
Yangguangdianyuan	0.313	0.631	0.495	drs
Sannuoshenwu	0.122	0.439	0.279	drs
Zhongjizhuangbei	0.396	0.830	0.477	drs
Bohuichuangxin	0.120	0.390	0.307	drs
Jinmokeji	0.168	0.448	0.374	drs
Mengcaoshentai	0.126	0.369	0.343	drs
Xuelanghuanjing	0.101	0.273	0.369	drs
Zhonglaigufen	0.088	0.306	0.287	drs
Feilihua	0.074	0.139	0.533	drs
Huannengkeji	0.059	0.121	0.491	drs
Sitongxincai	0.036	0.099	0.364	drs
Shanheyaopu	0.050	0.074	0.678	drs
Maikeshenwu	0.147	0.320	0.458	drs
Zhongfeigufen	0.066	0.136	0.487	drs
Meishangshentai	0.115	0.222	0.521	drs
Gaolaigufen	0.082	0.180	0.457	drs
Wandongyiliao	1.000	1.000	1.000	-
Huanrunshuanghe	0.717	0.882	0.813	drs
Yutongkeche	0.195	0.465	0.419	drs
Jinhuangufen	0.106	0.293	0.363	drs
Yongdinggufen	0.221	0.490	0.452	drs
Beifangxitu	0.211	0.534	0.394	drs
Juhuagufen	0.837	1.000	0.837	drs
Jangsuwuzhong	0.140	0.323	0.432	drs
Guangshengyouse	0.198	0.666	0.297	drs
Haizhengyaoye	1.000	1.000	1.000	-
Guodiannanzi	0.825	0.967	0.853	drs
Hengruiyiyao	0.073	0.327	0.224	drs
Taihuagufen	0.308	0.724	0.425	drs
Shiyinggufen	0.080	0.118	0.677	drs
Hangfakeji	0.333	0.652	0.511	drs

Hanlanhuanjing	0.280	0.491	0.570	drs
Changjiangtongxin	0.199	0.532	0.375	drs
Lianchuangguangdain	0.133	0.355	0.373	drs
Ningboshenrun	0.159	0.454	0.351	drs
Shandongjintai	1.000	1.000	1.000	-
Wukuangziben	0.381	0.643	0.593	drs
Sanyouhuangong	0.554	0.819	0.677	drs
Jianghuaiqiche	0.583	0.819	0.712	drs
Peilingdianli	0.240	0.727	0.330	drs
Baotaigufen	0.744	1.000	0.744	drs
Guiyanboye	0.290	0.683	0.424	drs
Laobaixing	0.306	0.514	0.594	drs
Fenghuotongxin	0.574	1.000	0.574	drs
Zhongtiankeji	0.129	0.325	0.395	drs
Changyuanjituan	0.285	0.509	0.560	drs
Feidahuanbao	0.645	0.779	0.828	drs
Xiamengwuye	0.252	0.529	0.476	drs
Tiandikeji	0.740	0.866	0.855	drs
Nanjingxiongmao	0.156	0.467	0.334	drs
Shangchaigufen	0.436	0.841	0.519	drs
Hangfadongli	1.000	1.000	1.000	-
Bohaihuosai	0.290	0.461	0.629	drs
Mean	0.370	0.603	0.563	

Among them, the "irs" indicates that the scale of compensation increases, "-" means that the scale compensation is constant, and "drs" represents diminishing returns of scale.

Table 4: The input redundancy and output insufficiency of each decision unit

Company abbreviation	Input redundancy			Output insufficiency		
	Equity finan-cing net value (Ten thousand yuan)	Ownership concentration （%）	Asset liability ratio	Return on equity	Main business revenue growth rate	Tobin Q
Zhongguobaoan	0.000	-0.077	0.000	14121.371	10.265	0.436
Shenzhennengyuan	0.000	0.000	0.000	0.000	0.000	0.000
Dongxulantian	0.000	-1.160	0.000	41564.597	15.716	0.186
Desaidianchi	-0.166	0.000	-0.839	28397.577	6.402	0.100
Tefaxinxi	0.000	-0.790	-0.306	34030.814	24.943	0.379
Haiwangshenwu	0.000	0.147	-0.082	21926.638	15.803	0.223
Fenyuanyaoye	0.000	-0.212	0.000	57466.912	23.2	0.681
Xujidianqi	0.000	-0.215	-0.678	43096.172	25.399	0.290
Yingtejituan	-0.086	0.000	0.000	58409.159	4.171	0.125
Zhongyuanhuanbao	0.000	-0.718	0.000	56101.867	3.727	0.312
Wanxiangqianchao	-0.107	0.000	-2.065	21917.104	6.070	0.069
Fenhuagaoke	0.000	-0.358	0.000	31116.628	30.285	0.478
Huitianredian	0.000	-0.108	0.000	50156.266	6.215	0.125
Yingluohua	0.000	-0.381	-1.523	10608.972	14.749	0.196
Zhongguangheji	0.000	-0.374	0.000	31779.138	19.071	0.366
Huanruishiji	0.000	-53.880	-0.446	169317.717	41.347	1.250
Kaidishentai	0.000	-0.379	0.000	46273.698	5.013	0.121
Xinxianghuaxian	0.000	-0.009	0.000	39750.568	21.132	0.261
Zhongkesanhuan	-0.028	0.000	0.000	15186.619	0.000	0.099
Zhongtaiqiche	0.000	0.000	0.000	35230.028	22.951	0.544
Huagongkeji	0.000	-0.173	-1.131	35587.270	28.307	0.365
Jingxinyaoye	0.000	-0.244	-1.553	28407.906	39.830	0.452
Xinhaiyi	0.000	-0.035	0.000	48759.343	18.834	0.648
Jinzhikeji	0.000	-0.428	-0.166	32083.533	25.976	0.454
Laibaogaoke	0.000	-0.206	0.000	105313.405	23.535	0.234
Wohuayiyao	0.000	-0.101	-5.598	106357.017	15.803	0.251
Sanweitongxin	0.000	-0.087	0.000	46424.308	17.569	0.572
Yinlungufen	-0.049	0.000	0.000	43322.163	18.449	0.771
Tuobangufen	0.000	-0.180	-0.766	36438.898	41.236	0.677

Beiweikeji	0.000	-0.951	-0.053	65451.909	41.087	0.175
Laiyinshenwu	-0.010	0.000	0.000	38233.825	24.307	0.902
Tuorixinneng	0.000	-0.436	0.000	26562.311	21.055	0.283
Guanxunkeji	0.000	-0.201	-2.009	25203.517	18.706	0.163
Yataigufen	0.000	-0.028	-0.794	22175.391	20.395	0.236
Gelinmei	0.000	-0.435	0.000	36575.484	23.104	0.324
Hezhongsizhuang	0.000	-0.319	-0.339	27886.559	10.486	0.194
Siweituxin	0.000	0.000	-2.558	78324.422	6.994	0.132
Duofuduo	0.000	-0.049	-0.235	147662.734	24.308	0.675
Kanshengufen	-0.029	-0.216	0.000	50556.718	26.488	0.535
Shuanghuanchuangdong	0.000	0.000	0.000	140576.580	27.02	0.415
Rongjiruanjian	0.000	0.000	-1.639	62878.460	14.323	0.235
Jangfencicai	-0.001	-1.415	0.000	41179.750	17.318	0.397
Yamadun	0.000	0.000	0.000	0.000	0.000	0.000
Teruide	0.000	-0.841	0.000	17773.739	10.035	0.171
Tianlongguangqi	0.000	-0.627	-1.944	102830.115	26.856	0.333
Huitianxincai	0.000	0.000	-0.329	79836.760	32.544	0.296
Shuzizhengtong	0.000	-0.339	-1.752	71314.742	30.905	0.391
Yichengxinneng	0.000	0.000	0.000	0.000	0.000	0.000
Dongfengrishen	-0.014	-0.219	0.000	34793.913	32.657	0.114
Xianhehuanbao	0.000	-0.171	-0.376	146073.198	32.315	0.378
Shenwuhuanbao	-0.092	-1.447	-4.079	91340.018	29.955	0.342
Zhendongzhiyao	0.000	-0.209	0.000	19294.955	6.474	0.27
Zhongdianhuanbao	0.000	0.000	-1.745	54193.470	29.156	0.339
Chulingxinxi	0.000	-0.140	-0.471	76579.311	20.824	0.292
Tianhaohuanjing	0.000	-0.619	0.000	29829.158	10.399	0.259
Kanxinxincai	0.000	-0.168	-1.645	90251.771	46.733	0.422
Shangqijituan	0.000	0.000	0.000	0.000	0.000	0.000
Dongkuigufen	0.000	0.000	-0.654	78442.475	35.326	0.279
Zhongguoweixin	0.000	0.086	-1.398	34068.421	11.520	0.106
Mingjiangshuidian	-0.025	-0.118	0.000	87325.61	39.403	0.931
Futianqiche	0.000	-0.315	0.000	48534.629	4.403	0.105
Yaxingkeche	0.000	0.000	0.000	0.000	0.000	0.000
Hongduhangkong	0.000	0.000	0.000	0.000	0.000	0.000
Zhenhuanzhonggong	0.000	0.000	0.000	0.000	0.000	0.000
Hangtiandongli	0.000	-0.048	-1.451	25464.296	22.394	0.304
Kunyaojituan	-0.032	0.000	-1.519	30160.349	22.835	0.261
Hengtongguangdian	-0.105	-0.162	0.000	26821.650	16.456	0.463
Guihanggufen	0.000	0.000	-1.182	17122.758	19.345	0.253
Yijinguangdian	-0.040	0.000	0.000	21774.204	23.125	0.436
Guangyuyuan	0.000	-1.102	-3.212	65717.872	40.481	0.336
ShensangdaA	0.000	-0.018	-0.232	25535.176	28.910	0.197
Xugongjixie	0.000	0.000	0.000	0.000	0.000	0.000
Liugong	0.000	0.000	0.000	0.000	0.000	0.000
Haimaqiche	0.000	0.000	0.000	0.000	0.000	0.000
Qidiguhan	0.000	0.000	-4.174	14566.975	24.385	0.730
Shantuigufen	0.000	-0.168	0.000	26610.877	13.689	0.383
Xinyegufen	0.000	0.000	0.000	69752.735	25.207	0.503
Xinhuazhiyao	0.000	-0.075	0.000	40120.632	16.200	0.265
Zhonghangfeiji	0.000	0.000	0.000	12798.976	13.688	0.193
Qinchuangjichuang	0.000	-0.064	0.000	38789.499	8.516	0.184
Yingxingnengyuan	0.000	0.000	0.000	0.000	0.000	0.000
Ankaiqiche	0.000	0.000	0.000	0.000	0.000	0.000
Faershen	-0.117	0.000	0.000	25486.441	4.527	0.066
Yunneidongli	0.000	-0.280	0.000	24274.507	20.045	0.289
Shandahuate	0.000	-0.060	-2.049	174714.085	51.620	0.444
Hebeixuangong	0.000	0.000	0.000	0.000	0.000	0.000
Zhongguozhongqi	0.000	0.000	0.000	0.000	0.000	0.000
Fuosukeji	-0.029	0.000	0.000	48994.168	26.473	0.414

Jiuzhitang	0.000	0.000	-1.248	166432.628	28.167	0.422
Shirongzhaoye	0.000	-0.328	0.000	107408.687	12.227	0.321
Zhouyankeji	0.000	-0.004	0.000	20462.589	18.245	0.152
Hengdiancidong	0.000	-0.026	0.000	68113.34	16.251	0.174
Zhonggangtianyuan	0.000	-0.041	-2.975	19491.417	30.395	0.271
Suzhougude	0.000	-0.120	-0.356	80698.624	29.726	0.273
Longjigufen	0.000	-0.688	0.000	64077.563	20.59	0.162
Zhongcaijieneng	-0.038	-0.029	0.000	68721.151	32.05	1.086
Wowehecai	0.000	-0.072	0.000	53865.844	24.482	0.930
Yunhaijinshu	0.000	-0.042	0.000	56475.933	12.988	0.652
Zhengtongdianzi	0.000	-0.642	0.000	48599.723	20.119	0.911
Feimaguoji	0.000	-0.004	0.000	17575.694	4.236	0.071
Aotexun	0.000	0.000	0.000	0.000	0.000	0.000
Aoweitongxin	0.000	-0.050	0.000	36361.104	31.237	0.380
Dahuagufen	-0.080	-0.198	-0.494	179403.522	47.499	0.853
Chuanrungufen	0.000	0.000	0.000	0.000	0.000	0.000
Zhongdianxinlong	0.000	0.000	0.000	70011.371	23.241	0.498
Dongfangyuanlin	0.000	-0.072	0.000	80761.497	43.21	0.612
Gelinmei	0.000	-0.196	0.000	12517.584	15.02	0.095
Longjijixie	0.000	0.000	0.000	9272.367	8.299	0.055
Dongshanjimi	0.000	0.000	0.000	0.000	0.000	0.000
Neimengyiji	0.000	-24.536	-0.650	49365.468	33.769	0.668
Shenlutongxin	0.000	0.000	-1.074	149888.536	15.687	0.627
Haigetongxin	0.000	0.000	0.000	0.000	0.000	0.000
Fuchunhuanbao	0.000	-0.094	-0.566	74531.812	19.364	0.179
Keshida	0.000	0.000	-1.729	56778.582	8.519	0.219
Tianshunfenneng	0.000	0.000	0.000	55440.784	13.472	0.216
Yataikeji	0.000	-0.064	-0.140	134068.908	9.205	0.229
Yishenyaoye	0.000	0.000	0.000	56894.906	8.25	0.221
Qinxinhuanjiang	-0.054	-0.344	-0.437	60688.857	17.181	0.225
Shenyanggufen	0.000	0.000	0.000	85247.268	31.156	0.814
Daomingguangxue	0.000	0.000	0.000	0.000	0.000	0.000
Maoshuodianyuan	0.000	0.000	0.000	30861.118	17.04	0.317
Jingweigufen	0.000	0.000	0.000	59379.072	16.477	0.182
Teyiyaoye	0.000	-0.033	0.000	99377.684	41.433	1.367
Ankeshenwu	0.000	-0.074	-3.422	174345.975	36.644	1.380
Jiqiren	0.000	-0.040	-2.907	75787.729	33.255	0.313
Meitainuo	0.000	0.000	0.000	0.000	0.000	0.000
Hekanxinneng	0.000	0.000	0.000	66829.264	15.045	0.134
Yujingongshi	0.000	-0.214	0.000	85871.670	23.578	0.251
Nandudianyuan	0.000	0.000	0.000	0.000	0.000	0.000
Danshengkeji	0.000	-0.208	-3.000	54205.159	22.379	0.314
Shwnyunhuanbao	0.000	-0.238	0.000	44542.284	7.848	0.414
Jiayugufen	0.000	0.000	0.000	12784.866	7.483	0.119
Zhenjiangdingli	-1.172	-0.373	-0.084	236065.005	15.439	0.976
Dafukeji	0.000	0.000	0.000	0.000	0.000	0.000
Weiminghuanbao	-0.166	-0.053	-2.165	262063.597	15.355	0.382
Yongqinghuanbao	0.000	-0.210	0.000	7383.245	3.324	0.023
Xinwangda	-0.062	-0.249	0.000	103385.651	58.161	0.898
Qianshanyaoji	-0.081	-0.775	0.000	94193.722	49.249	1.331
Dongfangdianre	-0.016	0.000	-0.132	11896.317	2.508	0.26
Meichengkeji	0.000	-0.054	0.000	124891.553	39.099	0.936
Dianzhenduan	0.000	-0.196	0.000	69150.546	25.324	1.419
Chanshangyaoye	0.000	-0.094	0.000	148625.157	26.766	0.547
Jingduankeji	0.000	-0.061	0.000	50181.755	16.143	0.194
Baanshuiwu	-0.002	-0.315	0.000	64279.519	25.043	1.076
Hejiagufen	0.000	-0.037	-0.209	158250.221	12.974	0.733
Yangguangdianyuan	0.000	-0.235	0.000	74286.702	43.072	0.280
Sannuoshenwu	0.000	-0.104	-2.207	74177.356	35.311	0.327
Zhongjizhuangbei	0.000	0.000	-3.098	6087.037	9.408	0.316
Bohuichuangxin	0.000	-0.014	-2.457	55965.323	31.041	0.307

Jinmokeji	0.000	-0.042	-0.410	54844.500	28.548	0.477
Mengcaoshentai	-0.046	-0.538	0.000	63979.381	30.813	0.865
Xuelanghuanjing	-0.064	-0.237	0.000	68828.163	34.214	1.303
Zhonglaigufen	-0.147	-0.820	0.000	79324.005	34.657	1.616
Feilihua	0.000	-0.026	-1.388	167210.279	43.454	1.319
Huannengkeji	0.000	-0.255	-1.322	177441.023	9.057	0.678
Sitongxincai	-0.037	-0.165	-3.776	245600.101	6.8191	1.224
Shanheyaopu	-0.039	-0.028	-2.090	185319.158	23.659	2.674
Maikeshenwu	-0.058	-0.039	-2.939	211521.844	12.638	0.186
Zhongfeigufen	0.000	0.000	-1.265	102966.756	42.886	1.703
Meishangshentai	0.000	-0.095	-0.041	174085.933	17.910	1.162
Gaolaigufen	-0.013	-0.215	0.000	103455.664	47.244	2.263
Wandongyiliao	0.000	0.000	0.000	0.000	0.000	0.000
Huanrunshuanghe	-0.052	0.000	0.000	4082.097	5.206	0.232
Yutongkeche	-0.173	0.000	0.000	38082.141	31.219	0.697
Jinhuangufen	0.000	-0.158	-0.759	43213.663	37.999	0.546
Yongdinggufen	0.000	0.000	-0.564	24992.859	26.809	0.257
Beifangxitu	0.000	0.000	-2.125	29832.154	26.138	0.347
Juhuagufen	0.000	0.000	0.000	0.000	0.000	0.000
Jangsuwuzhong	0.000	0.000	-0.694	52472.874	35.635	0.402
Guangshengyouse	0.000	-2.244	-1.830	14884.346	18.645	0.190
Haizhengyaoye	0.000	0.000	0.000	0.000	0.000	0.000
Guodiannanzi	0.000	-0.007	0.000	17710.411	1.739	0.026
Hengruiyiyao	-0.039	-0.081	-7.149	161540	49.987	0.515
Taihuagufen	0.000	-0.082	0.000	21253.228	16.573	0.265
Shiyinggufen	0.000	-0.030	-0.745	246135.436	21.039	0.362
Hangfakeji	0.000	-0.007	-0.354	13096.106	19.235	0.326
Hanlanhuanjing	0.000	-0.052	0.000	43345.526	18.634	0.461
Changjiangtongxin	0.000	-0.238	0.000	31172.164	25.166	0.345
Lianchuangguangdain	0.000	-0.049	-1.045	70237.035	39.413	0.409
Ningboshenrun	0.000	-0.260	-0.113	120932.102	37.786	0.329
Shandongjintai	0.000	0.000	0.000	0.000	0.000	0.000
Wukuangziben	0.000	0.000	-0.746	32315.936	15.479	0.397
Sanyouhuangong	0.000	-0.359	0.000	12707.922	8.807	0.105
Jianghuaiqiche	-0.028	-0.085	0.000	18642.877	28.835	0.142
Peilingdianli	-0.011	-0.208	-0.679	172145.014	19.389	0.286
Baotaigufen	0.000	0.000	0.000	0.000	0.000	0.000
Guiyanboye	0.000	-0.066	-0.783	12054.693	18.284	0.195
Laobaixing	0.000	-0.087	0.000	95447.183	13.253	0.475
Fenghuotongxin	0.000	0.000	0.000	0.000	0.000	0.000
Zhongtiankeji	0.000	-0.110	0.000	74593.280	34.379	0.699
Changyuanjituan	0.000	-0.009	0.000	18489.78	17.813	0.570
Feidahuanbao	0.000	-0.095	0.000	20890.466	5.011	0.183
Xiamengwuye	0.000	-0.446	0.000	29729.828	23.207	0.435
Tiandikeji	0.000	-0.147	0.000	4684.167	5.628	0.114
Nanjingxiongmao	0.000	-1.022	0.000	22244.929	30.184	0.307
Shangchaigufen	0.000	-0.093	0.000	26059.281	9.054	0.081
Hangfadongli	0.000	0.000	0.000	0.000	0.000	0.000
Bohaihuosai	0.000	-0.023	-0.202	40463.024	21.251	0.309