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## Analysis on the Early Warning Index System of Financial Risk of New Energy Enterprises

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# Analysis on the Early Warning Index System of Financial Risk of New Energy Enterprises

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**Abstract.** Financial risk measurement, as the core content of enterprise financial risk management, plays a vital role in preventing financial risks. Compared with other industries and traditional energy industries, new energy enterprises have their own characteristics and financial risks, which cannot neglect the development of new energy enterprises. Combined with the characteristics of new energy enterprises, this paper constructs financial risk early warning indicators that meet the characteristics of new energy enterprises.

## 1. Introduction

In the process of development, new energy enterprises not only need to pay attention to the innovation of new energy research and development or development technology, but also need to attach great importance to the financial risks of enterprises, establish scientific financial risk warning indicators, and promote the discovery of existing energy companies. Financial risks, and effective ways to solve, thereby reducing the negative impact of potential financial risks on the development of enterprises, and promoting the healthy development of new energy enterprises, thus providing a solid guarantee for the development of new energy.

Although China's new energy enterprises are now in a period of steady rise, the inherent financial risks of enterprises are constantly emerging, and the measurement of their financial risks is directly related to the sustainable development of the new energy industry. Based on this, based on the analysis of the status quo and causes of the financial risks of China's new energy enterprises, this paper constructs a set of financial early warning indicator system that is more suitable for coal enterprises based on the shortcomings of the traditional financial analysis and early warning indicator system. Early warning research provides a basis.

## 2. Status of financial risks of new energy enterprises

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### *2.1. New Energy Enterprise Concept*

New energy enterprises mainly refer to legal person organizations engaged in new energy-related operations, that is, engaged in research and development, production of new energy, all companies that sell and provide services are specific micro-units in the new energy industry chain. According to different strokes

According to the standard, new energy companies have different classifications. For example, according to the new energy categories of enterprises, they can be divided into

Wind power companies, solar energy companies, nuclear power companies, bio-energy companies, geothermal energy companies, etc.

### *2.2. Financial risk concept*

Financial risks are broad and narrow. The narrow financial risk refers to the uncertainty of loss, which refers to the uncertainty of the enterprise's use of monetary funds to repay the debts due, also known as financing risks or financing risks. The narrow financial risk only focuses on the risks caused by debt repayment. The broad sense of financial risk refers to many factors such as improper financing methods, unreasonable financial structure, and poor management of capital assets and unscientific investment methods, which may cause the company to lose its solvency, which in turn leads to the risk of investors expecting a decline in revenue. The broad financial risk is based on the whole process of financial activities, starting from the overall concept of finance. What this paper studies is the broad financial risk.

### *2.3. Status of financial risks of new energy companies*

According to the different financial activities of new energy companies, their financial risks have two characteristics.

*2.3.1. Characteristics of external risks.* At present, most of the production technologies and equipment adopted by China's new energy enterprises are imported from abroad, which makes the development of China's new energy enterprises subject to great external constraints, and also seriously hinders the rapid development of China's new energy enterprises. For example, domestically used photovoltaic solar energy has achieved a lot of research results even if it has invested a lot of research on this skill in China. However, compared with the research on new energy fields in Europe and the United States, China is still relatively backward.

*2.3.2. Characteristics of internal risks.* The characteristics of internal risks in the financial risks of new energy enterprises mainly include:

First, the relatively backward new energy production technology. The domestic new energy industry started late and experienced a short development time. Therefore, most new energy industries are in a stage of exploration and development, which leads to high research costs and production costs, coupled with production. Equipment needs to be imported from abroad, making its operating costs continue to increase. In addition, in order to collect the maximum benefits from the development of new energy companies, some investors have continuously brought some low-tech new energy production technologies into them, forming a state of low-tech cycle, which has seriously affected the high-end development of new energy.

Second, the capital structure of new energy companies is unreasonable. In the process of raising capital, new energy enterprises are more inclined to adopt debt financing in order to reduce the cost of capital, so that debt capital occupies a high proportion in total capital. Once the capital chain of enterprises breaks, enterprises will not be able to repay debts on time. This will inevitably lead to financial risks.

China's new energy companies have higher debt ratios. In this respect, the interest expenses incurred by enterprises are relatively large. If the debts of new energy enterprises cannot be repaid in time, the development of the enterprise will face the risk of capital chain breakage, which will affect

its continued operation. In addition, when the business operator or owner realizes the high debt ratio of the enterprise, it will give higher expectations to the return rate of the enterprise, reduce the investment amount or adopt unscientific means to increase the income. When the creditor realizes the high debt situation of the enterprise, it will increase the vigilance of the debt, thereby increasing the loan interest rate or reducing the loan amount. As a result, the financing of the new energy enterprise will be seriously hindered, making the possibility of the enterprise capital chain breaking. Increase.

Third, the liquidity of funds is not strong, the cash flow situation is not good, and accounts receivable are too high. Enterprises in the development stage have limited market, and limited market limits production capacity, resulting in poor liquidity and low capital utilization. Although the market prospects are good, the high cost of the initial investment, the small profitability, and the poor cash flow situation will all lead to financial risks. Due to the short development time of new energy companies and the lack of price advantage and product quality advantages, they are not dominant in the entire energy market, so that the market share of new energy is not high. In order to cultivate customers and maintain customer loyalty, enterprises provide Great preferential measures to attract customers, these preferential conditions generally include a long account receivable account period, which causes the company's capital recovery is not very serious, the proportion of accounts receivable is too high, the flow of funds is poor The utilization rate of funds is low, and the financial payment ability of enterprises is poor, which easily leads to the break of the capital chain.

Fourth, the internal control system is not sound. The management system of the enterprise itself is not perfect, and the financial position of the management department is inaccurate. New energy enterprises are emerging enterprises, and their development time is not very long. Their own management system is not very sound, especially the lack of a scientific and reasonable internal control system. Dai Wen tao et al. scholars have confirmed that internal control can significantly affect the financial risks of enterprises. Inadequate internal control systems can result in inability to effectively monitor the investment and recovery of financial funds, which can exacerbate financial risks. If the management of the company only pays attention to short-term interests, ignoring the new energy industry is a feature of high-tech industries that require a large amount of investment in R&D and innovation funds, which will make them lack of core technologies and thus lack market competitiveness, leading to a decline in corporate profitability, which will lead to financial risk.

### **3. New energy enterprise financial risk early warning indicators**

Combined with the particularity of financial risks of new energy companies, this paper divides the financial risk early warning indicators of new energy enterprises into two categories, the first category is financial indicators, and the second category is non-financial indicators. Through the selection and establishment of these two types of indicators, the financial risk early warning indicator system of new energy enterprises will be built.

#### *3.1. Financial indicators*

*3.1.1. Establishment of solvency indicators.* Only when the enterprise survives can it make a profit, and the basic condition for the survival of the enterprise is that the capital chain is unblocked and the debts due can be repaid. Under normal circumstances, the ratio of the current ratio and the quick ratio can reflect the short-term solvency of the enterprise, that is, whether the short-term capital chain of the enterprise is good; and the asset-liability ratio, the interest guarantee ratio, and the ratio of the property rights reflect the long-term solvency of the enterprise. The ratio of property rights also reflects the ability of the owner's equity to withstand the risk of debt repayment, that is, the effective planning level of the long-term development of the capital chain.

Current ratio - current assets / current liabilities

Asset-liability ratio - total liabilities / total assets

Interest coverage multiple = pre-tax profit / interest expense

Property ratio = total liabilities / total owner's equity

*3.1.2. Establishment of profitability indicators.* Profitability can represent the value of enterprise development and is the pursuit of enterprise existence. Profitability can be used as an indicator to measure the most comprehensive capabilities of new energy companies. Enterprises can only develop if they are profitable. In the long run, companies can avoid financial crises and must have good profitability so that their solvency and fundraising capabilities will be stronger. Its indicators include operating cash flow rate, total return on assets, and return on equity. Sales profit margin and cost expense profit margin reflect the profitability of the company.

Operating cash flow outflow rate = operating cash flow personnel / operating cash outflow

Return on total assets = profit before interest and taxes / average amount of assets

Return on equity = net profit / average shareholder equity

Sales profit margin = total profit / total sales revenue

Cost expense margin = total profit / total cost

*3.1.3. Establishment of management capability indicators.* The pros and cons of a company's financial situation can be changed through management. The quality inspection rate is high, reflecting the company's production capacity and management ability. The total asset turnover rate is high, reflecting the strong vitality of the company and the good management effect. The higher the turnover rate of accounts receivable, the faster the receivables are recovered. The higher the inventory turnover rate, the lower the inventory occupancy level, the faster the inventory is converted into cash or accounts receivable. The higher the turnover rate of accounts receivable and the inventory turnover rate, the higher the liquidity of the enterprise and the optimization of the enterprise. Capital chain.

Quality inspection pass rate = number of qualified products / total number of products

Total Asset Turnover = Total Sales Revenue / Average Assets

Inventory turnover rate = cost of sales / average inventory

Accounts Receivable Turnover = Sales Revenue / Average Accounts Receivable

*3.1.4. Establishment of development capability indicators.* In order to survive and develop, new energy enterprises must constantly pursue technological advancement, continuously improve the quality of products, and expand the market share. Its indicators include total asset growth rate, sales revenue growth rate, and R&D expense growth rate. The growth rate of total assets reflects the speed at which the scale of asset management expansion in a certain period of time is narrowed; the growth rate of sales revenue reflects the increase and decrease of sales of enterprises, and is an important indicator for evaluating the development of enterprises; the growth rate of R&D expenses reflects the production of products by enterprises. Technology and new products are valued.

Total asset growth rate: (total assets at the end of the year, total assets at the beginning of the year) / total assets at the beginning of the year

Sales revenue growth rate = (this year's total sales revenue, a total sales revenue of the previous year) / total sales revenue of the previous year

R&D expense growth rate: (R&D expenses for this year - R&D expenses for the previous year) / R&D expenses for the previous year

### *3.2. Non-financial indicators*

There are two aspects of the non-financial reasons for triggering the financial risks of new energy companies. First, the investment status of technology research and development, on the one hand, the direction of research and development, on the other hand, the amount of research and development funds; the second is the talent reserve situation.

The non-financial indicators of new energy companies can be reflected by the technology R&D conversion rate, R&D input cost rate and talent reserve rate indicators. The low conversion rate of technology research and development means that the error rate of R&D is high, and measures should be taken to reverse it in time. Otherwise, it will be unfavorable for the long-term development of the company; the R&D input cost rate reflects the proportion of R&D costs. If the R&D results are high,

R&D The input cost rate can be appropriately high. Conversely, if the conversion rate of research and development results is low, the input cost is high, and enterprises should seek breakthroughs from a technical perspective and resolve them as soon as possible. The talent reserve ratio is also a relatively early warning indicator, which should be consistent with the R&D input cost rate. Otherwise, it will lead to excessive talent reserve and cause unnecessary cost. Of course, these three indicators are also interrelated. Without talent reserves, there is no guarantee that R&D will be carried out and invested, let alone the transformation of R&D results. Therefore, these three indicators should pay attention to mutual coordination and management. Early warning.

Technology R&D Conversion Rate = Number of Conversions for a Phase of R&D Projects / Total R&D Projects for a Period

Technology R&D input cost rate = a certain period of technology R&D input cost / a certain period of enterprise operating cost

Technical talent reserve rate = total number of technical talents in a certain period / total number of talents in a certain period

#### 4. Conclusion

In summary, new energy companies have their own characteristics, such as environmental protection, economy, and safety. It is precisely because of these characteristics that new energy companies face greater financial risks. These financial risks will have a greater hindrance in the development of new energy companies. Therefore, in order to promote the sustainable development of new energy companies, it is necessary to effectively avoid the financial risks encountered in the business process. In order to avoid the financial risks encountered, it is necessary to establish a financial risk early warning indicator system within the enterprise, remind the management of the company to pay attention to the risk level of the enterprise, pay attention to the development of the financial risk of the enterprise, and effectively improve the financial risk prevention of the enterprise. The correctness of capabilities and business decisions promotes healthy and stable development of the company.

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