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Research Article

Construction and Empirical Research of Comprehensive Financial Analysis Index System Based on Cash Flow

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Abstract: This paper first elaborates on the importance of cash flow in building a comprehensive financial indicator system. On one hand, it is the relationship between cash flow and the assessment of the company's solvency, profitability, and operating ability. On the other hand, it is the theoretical basis of financial analysis based on cash flow. We then introduced the construction principles of the financial analysis index system based on cash flow, and lastly analyzed the financial data of Xiaomi for empirical research.

Key words: Financial indicator system; Cash Flow

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1 Introduction

Currently, the continuous improvement of the capital market, the diversification of investment entities, the complexity of investment financing methods, the diversification of investment directions, investment activities and financial management activities have become important activities of enterprises. At the same time, the uncertainty and risk of enterprise operations continue to increase[1]. Due to these factors, company investors, creditors, groups and individuals are paying more attention to the company's solvency, profitability and business process information. Therefore, establishing a comprehensive and systematic financial analysis indicator system becomes more and more important.

2 The importance of cash flow in building a comprehensive financial index system

Cash is one of the important components of a company's assets and the cash flow in an enterprise is akin to the blood circulation in the human body. When there is a problem in any part, the enterprise will become "anemic". It can affect the health of the enterprise and may also cause financial crisis in the enterprise, threatening the life of the enterprise. For a growing company, cash is like fresh blood. For a declining company, cash is a great rejuvenator.

2.1 The relationship between cash flow and assessing company solvency, profitability and operating ability

The key indicator of solvency is whether the borrower's cash flow is sufficient. Creditors calculate and analyze cash flow through two aspects (cash inflow and cash outflow) and three activities (operation, investment and financing). In addition to determining the amount of cash received by the borrower and the amount of cash currently paid, it can also find out from what activities did the cash comes from, the borrower's ability to repay previous debts, and the actual repayment status. This fully shows that cash and its dynamic changes (i.e. cash flow) are the best indicators of a company's ability to pay. For investors, the main indicator of their earning power is the amount of cash dividends they receive[2]. Shareholders also measure the cash dividends that can be distributed into their hands by analyzing the cash flow of creditors and others.

2.2 The theoretical basis of financial analysis based on cash flow

2.2.1 Capital Circulation Theory

Regarding "the change and circulation of capital types", Karl Marx stated that industrial capital has three functional forms: currency capital, production capital and commodity capital. In order to form the continuity of the industrial capital cycle, it is necessary to unify the three types of capital functions. In addition, in order to make capital circulation go smoothly, it is necessary to realize the unification of the three forms of capital circulation to realize the temporal continuity and spatial coexistence of industrial capital circulation. According to the theory of capital turnover, in order to ensure the continuity of enterprise production, it is necessary to strengthen cash flow management, maintain the continuity of cash flow, and ensure the smooth operation of product reproduction.

2.2.2 Value Compensation Theory

The value of commodities includes the previous value of the means of production and the new value created by labor. The successful realization of commodity monetization and cash inflow are the sources of compensation for the production cost of an enterprise and they are important conditions for ensuring the reproduction of the enterprise. It is necessary to obtain cash income in time so that the production value can be compensated and for reproduction to continue. The conversion process of commodity to currency has been described as an "amazing leap." The creation of cash flow by converting commodities into currency is the focus of commodity production and the starting point of reproduction. Only after the loss of materials in commodity production is compensated, then reproduction can continue and develop. Value reward theory can help companies to correctly calculate the value of commodities when managing cash flow, setting commodity prices reasonably, speeding up the conversion process of commodity into currency, solving the delay between sales expansion and sales cash inflow, and avoiding the risk of bad debt losses.

2.2.3 Cash Flow Theory

In production and operation, cash becomes non-cash assets, and non-cash assets become cash again. This cyclic process is called cash flow. This kind of circulation has no beginning and no end, and it is also called cash circulation or capital circulation[3]. If the company's cash flow is balanced, that is, cash inflow equals cash outflow, the task of managing cash flow will be greatly simplified. However, the company's cash flow, in reality, will always be out of balance under the influence of internal and external factors. Therefore, cash flow management requires optimizing the company's cash flow by raising and effectively using cash, converting non-cash assets into cash assets, and reasonably controlling cash flow.

3 Built-in principles of financial analysis index system based on cash flow

In order to conduct cash flow analysis scientifically, it is necessary to choose appropriate methods and follow the following principles when establishing the indicator system：

3.3.1 Principle of Scientificity

The concept of the indices used to analyze the company's cash flow must be correct, and the calculation formula must be scientific. The calculation and analysis of financial analysis indicators must truly reflect the law of corporate economic activities. The cash flow analysis indicator system must comply with economic laws and regulations, reflecting the regularity of cash flow accurately, comprehensively and systematically reflect the overall situation of cash flow.

3.3.2 Principle of Practicality

When establishing the analytical index system, the information and data required for the analytical index should be easy to obtain, calculate and understand. The method employed should be concise and practical, with the analysis information provided as consistent as possible with accounting skills, and the name and definition of the analytical index must be correct to avoid misconception.

3.3.3 Principle of Usefulness

As some analytical indicators are very unique and cannot be replaced by other indicators, while other indicators are highly correlated with them, it is unnecessary to include these indicators at all. This helps to avoid designing too many indicators when establishing an analytical indicator system.

3.3.4 Principle of flexibility

The design of the assessment index system should have a certain degree of flexibility in the analysis and application of the index, and the problem should be considered from the perspective of interrelated development.

4 Financial Empirical Analysis of Xiaomi's

Cash Flow

4.1 Solvency analysis

4.1.1 Short-term solvency analysis

From 2015 to 2017, the current ratio of Xiaomi Group was 1.52, 1.18, 1.3, all being less than 2. In 2018, it reached 2.34. The quick ratio was 0.99, 0.85, and 0.95, which were less than 1. In 2018, it reached 1.87, and the cash ratio was 0.51, 0.35, and 0.25, both exceeded 20%, indicating that Xiaomi has a stable cash payment capability and short-term solvency has increased in 2018.

4.1.2 Long-term solvency

From 2015 to 2017, the debt ratio of the Xiaomi Group exceeded 200%, i.e. the debt was more than twice the assets. The insolvency ratio was -1.7 to -1, and the equity was negative. The tangible debt ratio is 2.4-3.2. It turns out that the company's debt ratio is so high that its debt is more than twice that of tangible assets and its ability to repay long-term debt is weak. In 2018, since the fair value of convertible redeemable preferred shares has been calculated, so the inclusion of equity does not affect debt, therefore this indicator is normal. Indicator analysis shows that Xiaomi has strong long-term debt repayment ability, and the short-term debt of Xiaomi Group still has certain risks.

4.2 Operational capability analysis

From 2016 to 2018, Xiaomi's total asset turnover rate was 1.52, 1.63 and 1.47 respectively. The normal fixed asset turnover rate of the total fixed assets turnover is between 40-90, and the fixed asset turnover rate is very high. The turnover rate of current assets is between 1.7-1.9. A better account receivable turnover rate is between 7-14, and the trend is declining year by year. The investment payback period is longer, the account receivable turnover rate is lower, the inventory turnover rate is between 7-13, and the inventory turnover rate is faster. Xiaomi's operating capabilities are relatively strong, but special attention should be paid to the turnover rate of accounts receivable.

4.3 Profitability Analysis

From 2015 to 2018, Xiaomi's gross profit margins were 4.04%, 10.59%, 13.22% and 12.69%, quite low to say. Operating profit margins were 2.18%, 5.66%, 10.63% and 0.81%, respectively. The interest rates were -11.42%, 0.72%, -38.29%, and 7.71%. The low-cost profit margins were 2.13%, 5.75%, 11.18% and 0.79% respectively. The low-cost and cost-profit margins depended on the source of sales. This is too great. Xiaomi's operating profit has grown rapidly, but the gross profit margin is still small and the profitability index is not high, so it is necessary to improve the profitability.

4.4 Development Capability Analysis

From 2016 to 2018, Xiaomi's average revenue growth rate was 40.84%, average asset growth rate was 63.72%, average shareholder growth rate was 15.19%, and average net profit growth rate was 17.29%. Although the growth rate and asset growth rate are both high, it means that it is in the growth stage, and the average growth rate of equity capital and net income is small, which means that the company's equity capital and net income growth rate is not high. The indicator value shows that Xiaomi is in the development stage in recent years and has great potential.

5 Conclusions

According to empirical research, it can be concluded that as the existing corporate financial analysis and evaluation index system does not take cash flow into consideration, the analysis results may have errors or limitations, hence there exist big flaws. On the other hand, corporate financial evaluation indicators based on cash flow can be more objective and truly reflect the company's financial status and operating performance.

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