

On the Construction of Financial Analysis System of Enterprise Core Competitiveness

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Abstract—In the light of the traditional financial analysis system that limits to the surface data analysis of financial statements while neglecting the core capabilities evaluation, this paper attempted to set the financial analysis index of enterprise core competitiveness to compensate for the limitations. In this regard, based on the domestic and foreign researches and development atmosphere of enterprise core competitiveness, the financial analysis index system of enterprise core competitiveness has been restructured in four dimensions, namely, human capital return on investment, R&D and innovation capability, cash balance capability and the return rate on capital investment. Meanwhile, the test results based on the data of listed companies in Shaanxi province show that there is a positive correlation between the core competitiveness of enterprises and the four financial analysis indicators, therefore, the indexes are reasonable and have practical value.

Keywords—core competitiveness; financial analysis system; construction

I. INTRODUCTION

Core competitiveness, the most central and basic part that can hardly be copied and replaced by others, fuels the sustainable development of a company. As the traditional financial analysis system only studies the surface data of the financial statement, it is necessary and urgent to evaluate the company's core competitiveness from the perspective of financial accounting. Based on the characteristics of core competitiveness and the financial statement data, this paper tries to build a scientific and effective financial analysis index system of core competitiveness to deepen the content of financial analysis, optimize the analyzing method and expand the field of financial analysis. At the same time, the core competitiveness of the financial analysis system is introduced to the enterprise operation and management, in order to explore innovation based on the traditional financial analysis theory, method.

II. PRINCIPLES OF CONSTRUCTING CORE COMPETITIVENESS OF FINANCIAL ANALYSIS INDEX

A. Materiality principle and practical principle

When building the core competitiveness of financial analysis system, materiality principle is adopted to determine the key indicators that can best represent the enterprise's core competitiveness, and to the maximum extent, reflect some

characteristics of it. Practical principle requires that the indicators should not only reflect the personality and characteristics of some certain enterprise, but also can be applied in various industries, enterprises to better evaluate their core competitiveness.

B. Systematicness and pertinence

The systematicness demands to put the influencing factors of core competitiveness into a system and consider the interrelationships among them. The pertinence means that we need to give more priority to the results, that is, the evaluation indexes constructed should reflect the strengths and weaknesses of core competitiveness as much as possible.

C. Qualitative analysis and quantitative test

On the one hand, the index should qualitatively determine the level of the core competitiveness of enterprises on the whole level. On the other hand, specific calculation should be carried out according to the financial statement data to obtain the quantitative analysis results.

III. CONTENT OF CORE COMPETITIVENESS FINANCIAL ANALYSIS INDEX

Analyzing from the quantity, quality and time dimensions, the enterprise core competitive ability boasts the core position, leading capacity, coordination and dynamic nature. On the basis of these four characteristics, we can build up the enterprise core competitiveness index system of financial analysis from four perspectives, that is, the human capital investment return ability, R&D and innovative ability; cash balance ability and profitability of capital investment.

A. Human capital investment return ability index (core)

People, to a large extent, have a significant impact on the development of an enterprise as the operation of any enterprise depends on people. Nowadays, human resources as an important business capital have increasingly become the object of competition between enterprises. Excellent talent team and efficient management are both the strength to enterprise and are hard to be imitated or altered. As the source of the enterprise core competitive ability, they also serve as the prerequisite for the enterprise to keep sustainable development^[1]. As the carrier of human capital, people, the intangible assets, is also the carrier of intellectual resources such as enterprise connotation, innovation and creation. Therefore, this paper takes human capital as an index to evaluate the core competitiveness of enterprises. However, experts from

Fund Project: the research work of this dissertation is the periodic achievement of Xi'an Shiyou University High-Level Talent Support Program named on Invisible Financial Capital of Corporate Finance (No.0109-290088283)

theoretical field and practical circle have not reached an agreement on human resource evaluation measurement at the financial level.

This paper refers to the core index, the Rate of Return on Common Stockholders' Equity in the Du Pont Analysis System, and introduces it into the study of human resource accounting, based on which constructs the human capital investment rate of return to quantitatively reflect the core competitiveness of enterprises. Both net income of human capital investment divide cost of human capital and net profit divide payment to employee equal human capital investment rate of return.

The index can be interpreted from two aspects. First, from the perspective of the political economics, the net income of human capital investment is the corporate profit transformed by the surplus value created by labors. It is the business income from the human capital investment, so here uses net profit index to represent the return the company gets, that is, the net income of human capital investment. Second, the remuneration that the employees get from their working is the cost that the enterprise has to pay. In this respect, the human capital cost can be measured by the employee compensation.

B. R&D and innovation capability index (leading role)

The index of R&D and innovation capability refers to the ratio of the total amount of development expenditure and intangible assets to the business income of the enterprise. That the development expenditure plus intangible assets divide operating income equals R&D innovation ability.

This index reflects another important characteristic of the core competitiveness of enterprises, that is, its leading nature. It can indicate the proportion of investment in technology and product innovation in the income of enterprises, thus showing the preference of enterprises to R&D and innovation. The index is mainly applied to the new products, intangible assets and innovation ability of enterprises in the process of research and development, so as to reflect the leading role of the core competitiveness of enterprises and how difficult it is to imitate [2]. The higher the value of this index is, the higher the importance enterprises attach to research and development. In the long run, the leading nature of the core competitiveness of an enterprise determines that it is difficult to be imitated. This is an important prerequisite and a necessary basic condition for an enterprise to further consolidate its competitive advantage. Of course, the greater the implication, scarcity and particularity of an enterprise's R&D innovation ability, the more obvious the leading degree of its core technologies and capabilities, and the harder for its competitors to copy and catch up.

C. Cash balance capacity index (coordination)

As far as the finance concerned, whether the company runs in harmony depends on the cash inflows and disbursements during the operation. Working capital minus working capital requirement equals cash balance capacity. The calculation result of this index is the absolute figure. Taking the logarithm of the figure, the smaller this index is, the stronger the cash balance ability is.

Current assets minus current liabilities equal working capital. That is to say, working capital is the difference between the total current assets and the total current liabilities

of the enterprise, which can be used to invest in non-current assets and pay off non-current liabilities. Therefore, if the working capital of the enterprise is positive, it indicates that the investment and financing activities of the enterprise are well coordinated, and the financing activities can meet the capital requirements of the enterprise's investment activities. Oppositely, if the working capital is negative, it indicates that the working capital fails to support the asset investment, what's worse; the enterprise may need to borrow new debt to repay the old debt. Working capital requirement = (transactional financial assets + inventories + notes receivable + accounts receivable + prepaid accounts + other receivables) - (notes payable + accounts payable + accounts payable + prepaid accounts + employee payables + taxes payable + other payables).

Seen from the calculation formula, the cash balance capability index is the difference between the funds created or derived by the enterprise itself in the production and operation activities and the funds needed to carry out the operation activities [3]. If the result of this index is positive, it indicates that the working capital of an enterprise can meet the capital needed for business activities. Oppositely, it means that the enterprise's working capital cannot maintain normal production and operation activities, and it needs to address cash shortage through external financing. To sum up, for enterprises, the cash balance ability index is positive or negative, too high or too low is not the best state, whereas, defined as zero effect is the best situation as it can ensure that the enterprise will not have a lot of idle funds, or fund shortage.

D. Capital investment return rate index (dynamic)

Return rate on capital investment is a dynamic index that reflects the enterprise's core competitiveness. With the development of the enterprise, the enterprise capital scale and profitability are changing constantly. The enterprise core competitiveness improves with the growth of sustainable development ability, bringing the enterprise the profits [4].

The formula: return rate on capital investment = core profit/total invested capital = (operating income - operating cost - operating taxes and surcharges - administrative expenses - sales expenses - financial expenses)/(average balance of equity or paid-in capital + average balance of capital accumulation fund).

Profit is both the goal and the result for the enterprise operation. As the profit grows, enterprises accumulate capital, the critical economic basis for scale expansion and sustainable development. The higher the index value is, the richer the capital accumulation of the enterprise is, the stronger the sustainable development ability of the enterprise has, and the larger the development room and potential are, which further reflects that the enterprise has stronger core competitiveness.

IV. EMPIRICAL TEST

A. Sample selection and data sources

There are 46 listed companies engaged in manufacturing industry in Shanghai and Shenzhen stock exchanges. According to the research needs, only 35 of them are selected as the samples in this paper, as shown in Table I.

TABLE I. BASIC INFORMATION OF SAMPLE ENTERPRISES

No	Stock Code	Enterprise	Industry
1	600379.SH	Baoguang	Manufacturing
2	600456.SH	Baoti	Manufacturing
3	000561.SZ	Fenghuodianzi	Manufacturing
4	600343.SH	Hangtian	Manufacturing
5	601369.SH	Shaangu	Manufacturing
6	002267.SZ	Shaanxigas	Electricity, heat, gas and water production and supply
7	002149.SZ	Western metal material	Manufacturing
8	600248.SH	Yanchanghuaqian	Building industry
9	601179.SH	China Xidian	Manufacturing
10	000768.SZ	Zonghang Airplane	Manufacturing
11	300023.SZ	Baode	Manufacturing
12	600302.SH	Typical	Manufacturing
13	600455.SH	Botong	Comprehensive industry
14	600707.SH	Caihong	Manufacturing
15	300103.SZ	Dagang	Manufacturing
16	000564.SZ	CCOOP Group	Wholesale and retail trade
17	600831.SH	Guangdian	Education, culture and arts, radio, film and television
18	000516.SZ	Guoji Yixue	Wholesale and retail trade
19	300116.SZ	Jianruiwoneng	Manufacturing
20	600984.SH	Jianshejixie	Manufacturing
21	600080.SH	Jinhua	Manufacturing
22	601958.SH	Jinmu	Mining industry
23	000796.SZ	Caissa Tourism	Management of water conservancy, environment and public facilities
24	000697.SZ	Ligeance Aerospace	Mining industry
25	601012.SH	Longji	Manufacturing
26	000837.SZ	Qinchuan	Manufacturing
27	600706.SH	Qujiang Cutural Tourism	Management of water conservancy, environment and public facilities
28	000812.SZ	Shaanxi Jinye	Manufacturing
29	300164.SZ	Tong Petrotech Inc	Mining industry
30	000610.SZ	Xi'an Tousiam	Management of water conservancy, environment and public facilities
31	000721.SZ	Xi'an Yinshi	Hotels and catering services
32	300114.SZ	AVIC ZEMIC	Manufacturing
33	600893.SH	AECCAERO ENGINE	Manufacturing
34	300140.SZ	Zhaonghuanzhuangbei	Manufacturing
35	600217.SH	Zhongzaizhuan	Manufacturing

This paper selects the five consecutive years' data of these 35 listed companies, a total of 175 samples, which can eliminate the stochastic outcomes generated under the short time span.

B. Descriptive statistical analysis

Descriptive statistical analysis of the indicators of the sample enterprises can provide a general understanding of the core profit created by employees, cash coordination status, realization of invested capital and whether the enterprises are able to make sustainable innovations.

TABLE II. DESCRIPTIVE STATISTIC VALUE OF EACH VARIABLE

	Y?	X1	X2	X3	X4
Mean	1.805755	0.336183	0.148508	19.70823	0.081319
Median	1.298263	0.263116	0.080386	19.63660	0.059942
Maximum	10.61533	8.497787	5.260640	23.11574	1.271869
Minimum	0.130904	-17.53358	0.001665	15.13739	-0.253507
Std. Dev.	1.628462	1.831515	0.406250	1.569570	0.165462
Observations	175	175	175	175	175
Cross sections	35	35	35	35	35

V. CONCLUSION

Seen from the statistical results in table II, conclusions are as follows:

1. The ratio of market value of assets (Y) reflects the relationship between annual total market value and total assets, thus showing the core competitiveness of enterprises in general. There is a big gap between the maximum value and the minimum value. Due to the gradual transformation of business objectives and value pursuit of enterprises in recent years and the reform of market system, enterprise value keeps growing, and the ratio of asset market value is also on the rise.

2. The human capital return on investment (X1) has fluctuated most dramatically in the five-year period, and the overall level is relatively high, which can better reflect the core competitiveness of enterprises.

3. From the perspective of R&D and innovation capability (X2), it can be seen that the listed manufacturing enterprises in Shaanxi province are stable at about 14.9% on average with the maximum value 5.260640 and the minimum value close to 0, and show an increasing trend year by year. It can be seen that China is still in the difficult and historic transforming from "made in China" to "created in China". There is still a long

way to go to improve the independent research and development capabilities.

4. Cash balance capability index (X3) reflects the relationship between working capital and working capital requirement of an enterprise. Due to the particularity of the calculation, the overall value of the index is relatively large, and the average value is around 19, which can reflect the coordination of core competitiveness.

5. The return rate on capital investment (X4) reflects the relationship between the invested capital and the core profit of the enterprise, and showcases the sustainable profitability of the enterprise. The average value is about 8% with data show a state of positive and negative intersection, embodying well the profitability of the enterprise.

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