

Analysis of Financial Performance Evaluation Method Based on Applicability

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ABSTRACT. *Currently, Du Pont analysis, the Wall Marking Way and economic value added evaluation are the three pillars of financial performance evaluation. Based on the quantitative analysis of sample companies, this paper compares and analyzes the characteristics and applicability of the three methods from three aspects of evaluation concept, index nature and evaluation elements, and gives the analysis conclusion combined with the scale, quantity and life cycle of performance evaluation object. Finally, it puts forward the view that “the method is the king regardless of advantages and disadvantages, and the application is the king”.*

KEYWORDS: *Performance evaluation, Methods: comparison, Applicability*

1. Introduction

Since Du Pont used roe index to evaluate financial performance in the early 20th century, performance evaluation has never escaped from the vision of researchers. In the past hundred years, with the development of enterprise management theory and practice, theoretical researchers and practitioners have carried out beneficial exploration and practice from different perspectives, and gradually formed three types of financial performance evaluation system, namely Du Pont analysis method, the wall marking way and economic added value evaluation method. After more than a century of development, the three methods have been developing in parallel without replacement, which shows that they are effective and irreplaceable. It is worth thinking about whether the results of using these three methods to evaluate the same object are consistent? The author chooses three listed companies of Shandong Iron and steel industry, Shandong Iron and steel (600022), Jinling mining (000655) and Shandong geology and mineral (000409) as sample companies, and uses three methods to evaluate their financial performance, and discusses the characteristics and applicability of the three methods by comparing the analysis results.^{[1][2]}

2. Application of Mainstream Financial Performance Evaluation Methods in Sample Companies

2.1 The Application of Du Pont Analysis

Du Pont analysis system is to decompose and refine the indicators layer by layer with return on net assets as the core, and build a pyramid type evaluation system. By using Du Pont analysis method to decompose the indicators layer by layer, the financial performance evaluators can find out the strengths and weaknesses of each part of the enterprise, and provide guidance for the enterprise to adjust the organizational structure and development direction. Now, Now, the financial indicators of the three sample companies are summarized in Table 1.^[3]

Table 1 Application of Du Pont Analysis

project	Shandong iron and steel	Jinling mining	Shandong geology and mineral resources
Return on net assets	11.01%	4.28%	3.14%
Sales net profit rate	3.77%	9.65%	2.47%
Total assets turnover ratio	0.87	0.39	0.57
Equity multiplier	3.43	1.14	2.23

According to the data in Table 1, the financial performance of the three listed companies under Du Pont analysis method is the best in Shandong Iron and steel with the highest asset utilization efficiency, followed by Jinling mining industry with the strongest commercial operation profitability, and Shandong Geological and mineral industry with the worst commercial operation profitability.

2.2 The Application of the Wall Marking Way

The early traditional Wall Marking Way is to select seven financial indicators and give the corresponding proportion, compare the actual value of the enterprise with the industry average, get the ratio and score of each indicator of the enterprise, and then evaluate the financial performance level of the enterprise according to the total score. Now, the scores of the three sample companies are calculated by the Wall Marking Way as shown in Table 2.^[3]

Table 2 Application of The Wall Marking Way

Financial ratios	Score	Standard value	Actual value			Actual score		
			Shan steel	Jinling	Mountain Mine	Shan steel	Jinling	Mountain Mine
Liquidity ratio	25	0.89	0.81	4.04	1.33	22.9	113.4	37.29
Net assets / liabilities	25	0.68	0.68	7.80	0.81	25.0	286.9	29.91
Assets /	15	5.12	2.82	9.21	6.78	8.3	27.0	19.88

fixed assets								
Cost of sales / inventory	10	6	9.02	7.08	3.05	15.0	11.8	5.08
Sales / receivables	10	10.8	8.32	1.83	8.93	7.7	1.7	8.27
Sales / fixed assets	10	3.8	2.19	3.53	4.34	5.8	9.3	11.42
Sales / net assets	5	1.5	1.92	0.43	1.43	6.4	1.4	4.75
Total	100	-	-	-	-	91.1	451.6	116.59

According to the data in Table 2, among the three listed companies with the best financial performance under the Wall Marking Way, Jinling mining industry has the lowest debt ratio, followed by Shandong geology and mineral industry, and Shandong Iron and steel company with the highest debt ratio has the worst financial performance.

2.3 The Application of Economic Added Value Evaluation Method

The basic principle of economic value added (EVA) evaluation method is to include the opportunity cost of capital into the scope of investment cost, and gain incremental benefits if the investment income exceeds the capital cost; otherwise, the invested capital should be transferred to other aspects, and the calculation formula is as follows.^[3]

$$EVA = \text{Net operating profit after Tax} - \text{Occupation} \times \text{Cost of capital ratio} \quad (1)$$

The financial performance evaluation of the three sample companies is shown in Table 3.

Table 3 Calculation of Economic Added Value

project	Shandong iron and steel	Jinling mining	Shandong geology and mineral resources
Net operating profit after tax	220509.00 7327.50	28110.75	
Adjusted capital	3516142.00	247241.00	383221.00
Average cost of capital ratio	5.43%	5.81%	4.15%
Economic added value	29490.83	-7046.66	12197.02

According to the data in Table 3, the best financial performance of the three listed companies under the EVA evaluation method is Shandong Iron and steel with the largest profit scale, followed by Shandong geology and mineral industry, and the worst is Jinling mining industry with the smallest profit scale.

3. Comparative Analysis of the Results of Mainstream Financial Performance Evaluation Methods

According to the above calculation, the final evaluation results under the three methods are shown in Table 4.

Table 4 Summary of Application Results of the Wall Marking Way

project	Best performance	Moderate performance	Worst performing
Du Pont analysis	Shandong iron and steel	Jinling mining	Shandong geology and mineral resources
Wall Marking Way	Jinling mining	Shandong geology and mineral resources	Shandong iron and steel
Evaluation method of economic added value	Shandong iron and steel	Shandong geology and mineral resources	Jinling mining

According to the data in Table 4, for the same sample company, the results of the three mainstream financial performance evaluation methods are quite different. In order to find the reasons, the author collates the differences of the three methods into table 5 for comparative analysis.

Table 5 Comparison of Evaluation Concept, Evaluation Elements and Nature of the Three Methods

Method	Concept and nature	Essential factor	Shandong iron and steel	Jinling mining	Shandong geology & mineral resources
Du Pont analysis	Accounting performance (relative index)	Profitability	Centered	optimum	Worst
		Operational capability	optimum	Worst	Centered
		Solvency	Worst	optimum	Centered
Wall Marking Way	Accounting performance (relative index)	Solvency (50%)	Worst	optimum	Centered
		Asset structure (15%)	Worst	optimum	Centered
		Operating capacity (35%)	optimum	Worst	Centered
EVA evaluation method	Economic performance	Net operating profit after tax	Highest	minimum	Centered
		Opportunity cost of capital	Highest	Centered	minimum

(absolute index)				
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3.1 Analysis of Evaluation Concept

Both Du Pont analysis method and Wall Marking Way belong to accounting performance evaluation; economic added value evaluation method belongs to economic performance evaluation, which needs to consider the cost of equity capital. This directly leads to the fact that the EVA performance of Shandong geology and mineral industry, which has low capital cost but the worst profitability, is better than that of Jinling mining industry, which has high capital cost but the best profitability.

Economic added value evaluation method focuses more on the measurement of the actual income level of shareholders. Shareholders pay more attention to the survival of enterprises in the early stage of equity investment, and pay more attention to the return on investment in the later stage. Therefore, economic added value evaluation method is more suitable for the mature period; Du Pont analysis method and Wall Marking Way can be used in all life cycles.

3.2 Index Property Analysis

The evaluation indexes of Du Pont analysis and Wall Marking Way belong to relative index, while the EVA index of EVA belongs to absolute index. This directly leads to the lowest profit index of Jinling mining industry, which is the smallest in scale but the best in profitability, and makes the evaluation results of the three methods different.^[4]

Since the EVA index is an absolute number index, the EVA evaluation method can only be applied to the vertical evaluation of a single enterprise and the horizontal evaluation among the enterprises of the same scale; while the Du Pont analysis method and the Wall Marking Way can be used for the performance evaluation of either a single enterprise or multiple enterprises because the evaluation elements are relative number indexes.

3.3 Analysis of Evaluation Elements

According to the information in Table 5, the results of different evaluation methods are the same when measuring the single capacity, so there is no difference between the results of single evaluation elements, and it will not lead to differences in the final evaluation results; however, different evaluation elements of different evaluation methods will lead to huge differences in the final evaluation results.^[5]

Du Pont analysis pays more attention to the profitability of the enterprise and its reasonable matching with the operating capacity and solvency; the wall marking way pays more attention to the solvency of the enterprise, that is, the debt burden

and financial risk; EVA evaluation pays more attention to the ability of the enterprise to create residual income for investors.

3.4 Analysis and Summary

In the whole life cycle of an enterprise, the key points of operation and management in different development stages are different. Generally speaking, an enterprise needs to develop after saving, so in the start-up stage, the enterprise should pay more attention to the solvency closely related to its survival; when it enters the long-term, which has no worries about its survival, it should pay more attention to its profitability in order to maintain a certain advantage in the industry competition, etc. In order to enter the mature period, enterprises should pay more attention to EVA, which reflects the return on investment to shareholders, and pay more attention to solvency in order to delay being eliminated. Combined with the previous analysis, the final analysis conclusion is shown in the figure below.

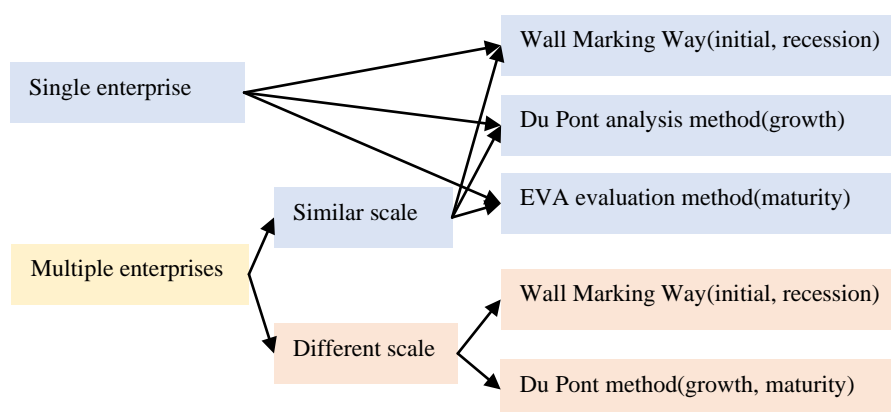


Fig.1 Application of Mainstream Financial Performance Evaluation Methods

Single enterprise and many enterprises of the same scale are suitable for financial performance evaluation. Wall Marking Way is suitable for the start-up period and recession period, Du Pont analysis method is suitable for the growth period, and economic value-added evaluation method is suitable for the mature period. Wall Marking Way is suitable for the start-up period and recession period, and Du Pont analysis is suitable for the growth period and maturity period. Of course, the applicability analysis results are not necessarily, analysts should choose one or more methods according to the purpose of financial performance evaluation.

4. Conclusion

The differences in different methods of financial performance evaluation are in the final analysis due to the complexity of economic activities of enterprises. Different types of methods are the tools to evaluate financial performance of enterprises, but they have their own advantages: Du Pont analysis method has a clear structure, simple calculation of indicators, and it can provide analysts with an analysis framework of the causes of changes in financial performance; Wall Marking Way is simple and clear index setting facilitates the use of external evaluators of enterprises; EVA evaluation method can realize the evaluation of capital market on enterprises, the measurement and analysis of internal capital budget and manager performance evaluation at the same time. All in all, there is no good or bad difference between different types of methods. The best financial performance evaluation method is the method suitable for the purpose of analysis and the object background.

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