

Eva-based Financial Performance Evaluation Research

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Abstract

The global economic environment is getting bad, Industry competition is increasingly fiercely, Traditional financial performance evaluation is no longer able to meet the needs of modern enterprises, Enterprises need a system that can fully reflect the level of financial performance in the company--EVA(Economic added value). Based on this background: This article will analyze the status quo of domestic enterprise performance evaluation from the perspective of EVA financial performance evaluation, And from the actual start of AY companies, EVA financial performance evaluation construction, Detecting the Necessity of EVA by Comparative Analysis Method.

Keywords

EVA(Economic Added Value); Financial Performance Evaluation; Comparative Analysis.

1. Overview of EVA Financial Performance Evaluation

The financial performance evaluation of the company refers to the principles of operation based on operations. Application Mathematical Method, calculate financial performance indicators, to accurately reflect the quantitative and qualitative indicators, Combine the real, objective and fair comprehensive judgment.

Economic Value Added, EVA is the net operating profit of the company's tax (Net Operating Profit After Tax, NOPAT) Cost (Total Cost, TC) Difference [1], if EVA is a positive number, it means that the company has created wealth; If EVA is zero, it means that the company's profits can only meet the expected benefits of creditors and investors.; If the EVA is negative, it means that the value of the company has lost. Because EVA is a tool that can create a real wealth value of real wealth for shareholders in a certain period, making stakeholders more intuitively understand the enterprise. its EVA value is expressed as the formula:

$$\text{EVA} \begin{cases} \text{Greater than zero, create value} \\ \text{Equal to zero, achieve the expected return} \\ \text{Less than zero, loss value} \end{cases}$$

EVA indicator is the core of EVA financial performance evaluation, The calculation EVA value is the basis for analyzing the EVA performance evaluation results, it is also a prerequisite for measuring whether to implement "EVA target"[2]. Its calculation formula is:

$$\begin{aligned} \text{EVA} &= \text{Net operating profit after tax} - \text{Total asset cost} \\ &= \text{Net operating profit after tax} - \text{Total Capital} \times \text{Weighted average cost of capital} \end{aligned}$$

$$\text{That is: } \text{EVA} = \text{NOPAT} - \text{TC} \times \text{WACC}$$

NOPAT refers to the net operating profit after tax, it reflects the post-tax profit in the daily business management activities. TC refers to the total capital, which is the amount of capital that maintains the daily business activities of the company. WACC refers to the cost of weighted average capital costs, which is the opportunity cost of capital. The calculation principle of EVA is shown in Figure 1:

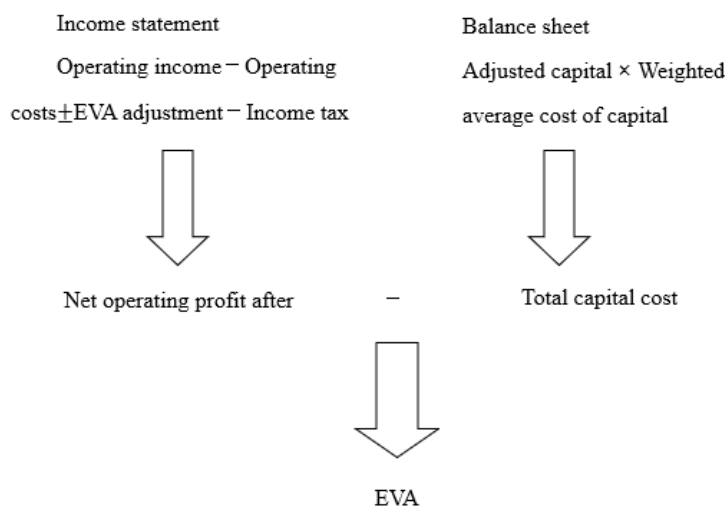


Figure 1. Structure of EVA Formula

2. AY Company Current Performance Analysis

2.1. AY Business Basic Overview

AY company is a new energy technology shared company, Corporate is located in Ningde, Fujian, both branches at home and abroad. Through years of operation, companies have built domestic leading power batteries and energy storage systems research and development and manufacturing bases. The company has the core, material, battery system, and battery recovery of fully industrial chain core technology, which is committed to providing solutions for global green energy applications, energy storage through advanced battery technology. Enterprises have established a deep partnership with Germany, the United States and other international top automakers and many well-known automotive manufacturers, For global customers, the power battery system for pure electric vehicles, hybrid vehicles, continues to provide clean and safe green energy for the society.

2.2. Financial Status of AY Companies

This article selects AY company 2016-2019 financial statements related data, As shown in Table 1, it is reflected in the overall performance and financial status of AY enterprises in the past four years.

AY company continues to expand the scale of the main business in the past four years. From Figure 2, you can see that the company has always been rapid growth in these four years. The total assets, liquid assets and sales revenues have grown larger than the previous year. Non-flow assets and owners have a slowdown over the previous year and the net profit growth is not obvious. But the company is overall in a profitable state, indicating that the overall performance and financial status of AY companies are relatively good.

Table 1. AY company 2016-2019 Financial data (unit:10,000yuan)

Years	2016	2017	2018	2019
Net profit	291,843.69	419,405.66	373,589.65	501,267.39
Sales revenue	1,158,473.95	1,999,686.08	2,961,126.54	4,578,802.06
Flow assets	2,176,132.48	3,303,310.29	5,391,142.28	7,169,493.72
Non-current assets	682,698.96	1,662,978.28	1,997,228.13	2,965,703.95
Total assets	2,858,831.43	4,966,288.58	7,388,370.40	10,135,197.67
Owners' equity	1,579,111.90	2,647,123.91	3,520,017.06	4,218,787.50
Current liabilities	1,018,282.44	1,789,004.59	3,108,494.19	4,560,737.87
Non-current liabilities	261,437.09	530,160.07	759,859.16	1,355,672.28
Debt	1,279,719.53	2,319,164.67	3,868,353.34	5,916,410.16

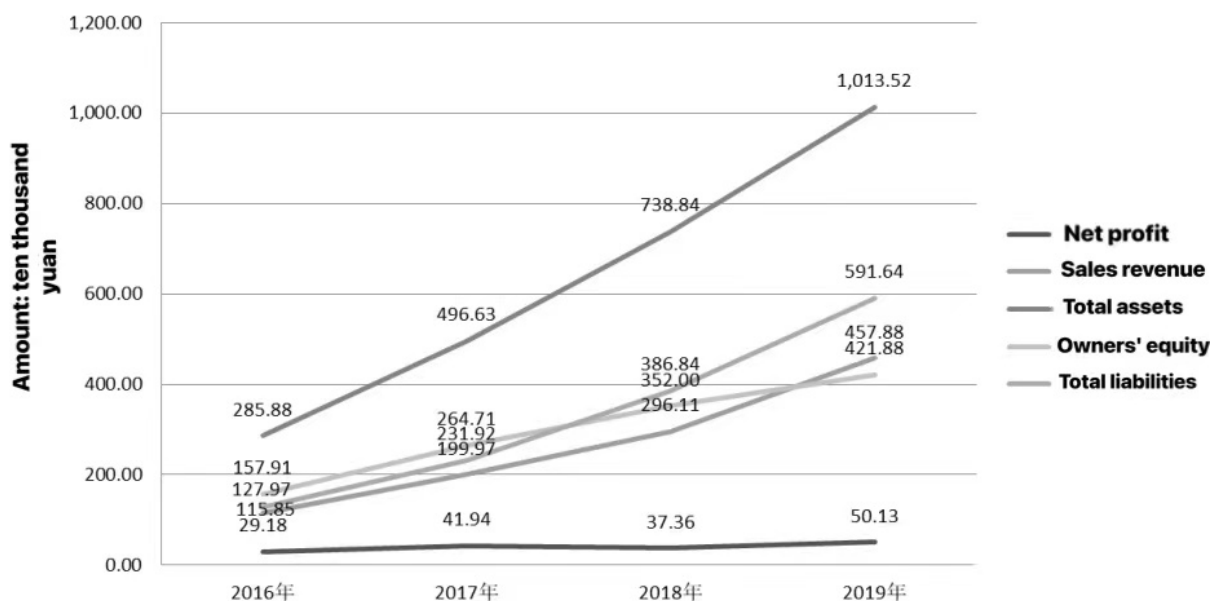


Figure 2. AY company 2016-2019 financial data line chart

2.3. AY Company Current Financial Performance Evaluation

AY company uses DuPont Analytic to conduct financial performance evaluation, It is a financial indicator based on the net interest rate of interest. Further, the sales outcome of the company and the asset operations, the DuPont analysis method is as follows [3]:

$$\begin{aligned}
 \text{Roe} &= \text{Sales margin} \times \text{Asset turnover rate} \times \text{Equity Multiplier} \\
 &= (\text{Net profit} \div \text{Total assets}) \times (\text{Total revenue} \div \text{Total assets}) \times (\text{Total assets} \div \text{Total equity capital}) \\
 \text{ROE} &= \text{NPM} \times \text{AU} \times \text{EM}
 \end{aligned}$$

According to the data in the AY enterprise report given above, the relevant formula is calculated about the relevant formula, DuPont analysis data in 2016-2019 is shown in Table 2.

Table 2. 2016-2019 AY Business DuPont Analytical Data Sheet

Years	2016	2017	2018	2019
Roe	0.184815079	0.158438243	0.106132909	0.11881788
Asset net interest rate	0.102084959	0.084450521	0.050564553	0.049458077
Equity Multiplier	1.810404589	1.876107333	2.098958691	2.402395865
Sales margin	0.251920805	0.20973575	0.126164703	0.109475663
Asset turnover	0.405226393	0.40265201	0.400782091	0.451772349
Debt	1279719.53	2319164.67	3868353.34	5916410.16
Total assets	2858831.43	4966288.58	7388370.4	10135197.67

The AY company can analyze the annual financial situation of the AY company through Table 2. In order to more intuitively see the difference between the data, we will show the data in Table 2 through the histogram as shown in Figure 3.

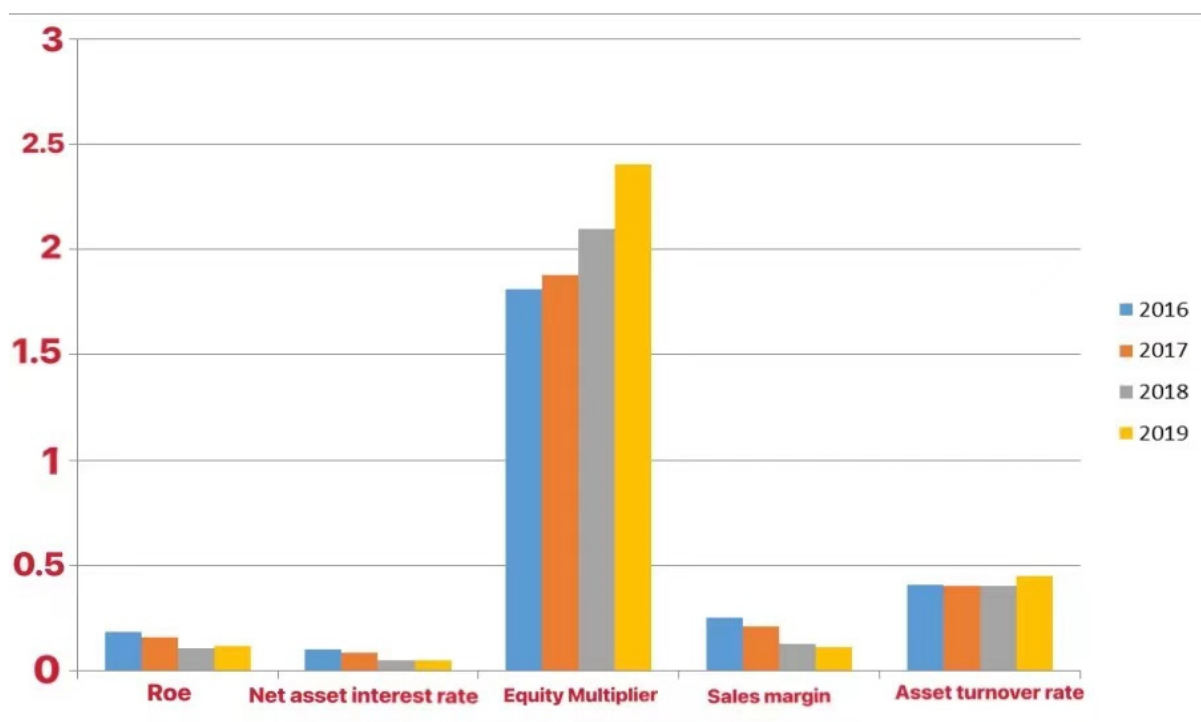


Figure 3. 2016-2019 AY company DuPont analysis data histogram

We can look forward to seeing a decline in the total assets of the AY company through Figure 3. We must analyze what is why the AY company has declined. First, we can see that the equity multiplier is a rise, so it is because the net interest rate of assets is caused. And because the decline in sales of net interest rates affected the net interest rate of assets, we went back to see AY company's financial data discovery, Although net profit and sales revenue have risen over

the last year, because the growth rate of net profit relative to sales revenue has a small increase in sales income, there is a phenomenon that the total asset yield decline. Overall, the net asset yield of AY company has been maintained at 10%, which proves AY company or a good business state. Although the product's profit margin has declined in the past four years, AY company has always maintained a steady situation of capital turnover. And AY companies control equity multipliers within the scope of the industry. Therefore, the development of AY companies in recent years is still very visible through DuPont Analytical Figures. In summary, DuPont analysts have many advantages over traditional financial performance evaluation, but DuPont analytical laws still exist, it is undeniable shortage:

(1) DuPont analysis method is the core of equity remuneration rate, so it may have excessive importance of financial results, resulting in neglecting the long-term value creation of enterprises;

(2) DuPont analysis method reflects the business performance of the company, measures the requirements of the industrial era, but now in the current information era, various non-financial factors have increasingly increased, DuPont has no way. Measure this business performance.

(3) Intangible assets are also an important part of corporate assets, but DuPont analytical law does not measure this business performance.

In order to better solve the problem that the traditional financial performance evaluation cannot meet, the financial performance evaluation is more adapted to the development of society. More and more objective evaluation of business conditions.

3. EVA-based AY Enterprise Financial Performance Evaluation Construction

3.1. Introducing EVA into AY Corporate Performance Evaluation Ideas

Based on the limitations of traditional financial performance evaluation, we will conduct financial performance evaluations based on AY companies based on EVA. This paper mainly calculates the three variables of the net operating profit, capital sum of EVA, and the cost rate of capital and weighted average capital cost rate. EVA's attention core has always been a corporate value. The relevant performance evaluation of our introduction of EVA is also the core from the core of corporate performance evaluation to transfer from profit-oriented to enterprise value. But there is a little needed that the traditional financial performance evaluation has a lot of limitations, but some financial indicators are also very important.

In order to calculate the EVA value more accurately, build EVA financial performance evaluation, We need to adjust the company's research projects, considering cost and efficiency issues, We will follow the principles of importance, the principles of efficiency, the availability principles, the principles of understand-ability, and the provision of accounting adjustments on the state-owned assessment and calculation methods on EVA for project adjustment.

3.2. The Application of EVA in the Financial Performance Evaluation of AY Enterprises

It can be seen above, and the EVA value is mainly affected by three variables: the net operating profit, total capital, and weighted average capital cost rate.[4]

According to project adjustment regulations, the calculation formula of net operating profit after tax is as follows:

$$\text{Net operating profit after tax} = \text{Net profit} + (\text{Interest expense} + \text{Research and development cost adjustment} - \text{non-recurring income adjustment} \times 50\%) \times (1 - 25\%)$$

According to the adjustment of the above formula, the AY company 2016-2019 tax net operating profit is calculated, and the results are shown in Table 3:

Table 3. Net business profit after AY corporate tax (unit:10,000 yuan)

Project	2016	2017	2018	2019
Net profit	291,843.69	419,405.66	373,589.65	501,267.39
Interest expense	577.63	1,520.53	1,984.28	2,999.61
Research and development cost adjustment	11,888.80	78,711.43	-6,258.91	95,614.61
Non-regular income adjustment	6,242.81	6,230.33	1,865.55	18,897.45
Net operating profit after tax (NOPAT)	298,852.45	477,243.25	369,684.10	568,141.51

According to the project adjustment, the AY company 2016-2019 capital total (TC) calculation formula is as follows:

$$\begin{aligned} \text{Total capital} = & \text{Owners' equity} + \text{Debt} - \text{Interest-free flow} - \text{Construction} \\ & \text{in progress} \text{ Of which: Interest-free flow} = \text{Bills payable} + \text{Accounts} \\ & \text{payable} + \text{Advance receipts} + \text{Tax payable} + \text{Interest payable} + \text{Other} \\ & \text{payable} + \text{Dividend payable} + \text{Employee compensation payable} \end{aligned}$$

According to the adjustment of the above formula, the total capital of AY companies in 2016 and 2019, as shown in Table 4:

Table 4. Total Capital (Unit: Ten Thousand Yuan)

Project	2016	2017	2018	2019
Owners' equity	1,222,187.58	1,730,978.11	2,277,423.51	2,276,395.35
Debt	1,279,719.53	2,319,164.67	3,868,353.34	5,916,410.16
Bills payable	439,403.95	881,271.56	1,184,112.81	1,742,019.78
Accounts payable	317,339.53	497,825.73	705,707.51	1,069,213.75
Advance receipts	8,772.71	20,316.55	499,440.09	616,144.32
Tax payable	24,829.77	43,619.68	72,253.66	96,298.46
Interest payable	577.63	1,520.53	1,984.28	0.00
Other payable	36,024.01	31,715.69	290,434.13	529,589.03
Dividend payable	0.00	0.00	0.00	241.87
Employee compensation payable	24,829.77	43,619.68	72,253.66	96,298.46
Construction in progress	122,612.99	297,436.40	162,383.82	199,652.48
Total assets(TC)	1,527,516.76	2,232,816.96	3,157,206.89	3,843,347.36

The weighted average cost rate is an important part of the calculation of EVA for enterprises. The calculation formula for the weighted average cost of capital rate of AY companies from 2016 to 2019 is as follows:

$$\text{Weighted average cost of capital} = \text{Debt-to-capital ratio} \times \text{Cost of debt capital} + \text{Equity capital ratio} \times \text{Cost of equity ratio}$$

According to the adjustment of the above formula, the weighted average cost rate of AY companies from 2016 to 2019 is calculated. The results are shown in Table 5:

Table 5. Weighted average cost of capital ratio

Project	2016	2017	2018	2019
Debt-to-capital ratio	44.76%	46.70%	52.36%	58.37%
Cost of debt capital	4.62%	4.50%	4.20%	3.64%
Equity capital ratio	55.24%	53.30%	47.64%	41.63%
Cost of Equity Capital	12.07%	9.01%	6.57%	12.75%
Weighted average cost of capital	8.74%	6.90%	5.33%	7.43%

Based on the above analysis results, the EVA value of AY companies from 2016 to 2019 can be calculated. After data sorting, it is shown in Table 6:

Table 6. EVA value of AY companies from 2016 to 2019

Project	2016	2017	2018	2019
Net operating profit after tax	298,852.45	477,243.25	369,684.10	568,141.51
Total capital	1,527,516.76	2,232,816.96	3,157,206.89	3,843,347.36
Weighted average cost of capital	8.74%	6.90%	5.33%	7.43%
EVA	165,422.30	323,091.50	201,432.40	282,502.09

EVA itself is an indicator, we can use EVA to reflect business conditions and reflect corporate value. EVA-based financial performance evaluation is mainly reflected in the comparison of indicators related to net profit, according to EVA theory and adjustment principles, combined with the actual situation of AY companies for comparison [5], as shown in Table 7.

Table 7. EVA value and net profit (unit: Ten thousand yuan)

Project	2016	2017	2018	2019
EVA	165,422.30	323,091.50	201,432.40	282,502.09
Net profit	291,843.69	419,405.66	373,589.65	501,267.39

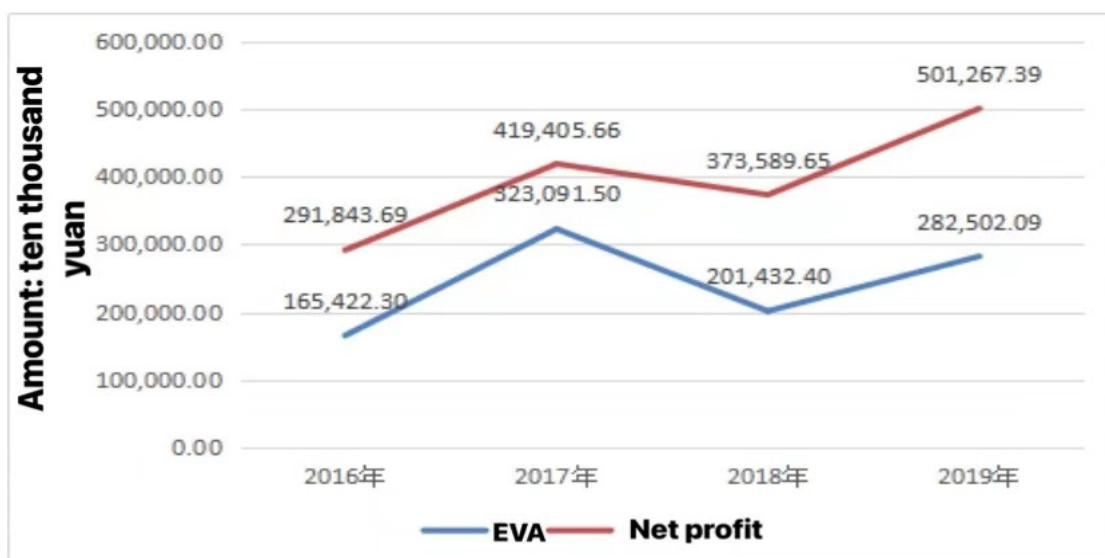


Figure 4. Line chart comparing EVA value and net profit

In terms of the overall trend, the growth trend of EVA value and net profit is the same, indicating that AY companies have good operating efficiency, better use of equity capital, better shareholder investment returns, and AY companies' corporate value has increased. From 2016 to 2019, the EVA value was significantly lower than the net profit, indicating that the equity capital of AY companies is greater than the debt capital, and shareholder rights are protected. The difference between the EVA value and the net profit value is because the EVA value deducts the cost of equity capital, which is exactly what the net profit data ignores.

From the comparison of data, when operating performance declines, although both EVA and net profit are reflected, it can be seen from Figure 4 that the EVA value has changed more significantly, indicating that the EVA value is more aware of operating crises sensitive.

4. Conclusion

We are in the information age and the era of rapid economic development. Enterprises need a reasonable and effective financial performance evaluation system suitable for the development of the times to help enterprises improve their competitiveness. Based on the theoretical basis, this article constructs AY companies based on EVA financial performance evaluation, and conducts research from the perspective of actual business operations. It is found that the EVA financial performance evaluation system is effective for the business management of the enterprise, and it has advantages compared with the traditional financial performance evaluation. Not only can it be more keenly aware of the business crisis, but also the financial data is not easy to be whitewashed, and it can truly reflect the business status of the enterprise. It can achieve the same goal of shareholders and operators, reduce unnecessary losses, optimize corporate interests, and promote win-win development of the enterprise.

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