

Study on the Special Adjustment Methods for Calculating EVA

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Abstract: After a review on the Economic Value Added (EVA) and its functions, the paper points out that it is necessary to adjust the contents related to financial statements in order to avoid accounting distortion and accounting anomalies when calculating EVA under different Accounting Standards, and this is helpful to get an accurate conclusion about the company value. Finally, the paper gives suggestions on special adjustment methods for seven accounting events when calculating EVA under China's Accounting Standards, which will be helpful for the EVA adoptors in China to accurately measure the performance.

Key words: Economic Value Added (EVA); Adjustment; Accounting event; Accounting standards

1 Introduction

Economic Value Added (EVA) is a performance evaluation tool established by Stern Stewart & Co. Stern Stewart considers that the implementation of a complete EVA-based financial management and incentive compensation system can provide the managers both better information and superior motivation to make decisions that will create the greatest shareholder wealth in any publicly-owned or private organization. In recent years, EVA has been widely concerned by academic and business circles, and its application in enterprises becomes more and more extensive.

Stern Stewart argues that EVA is the financial performance evaluation tool that comes closer to capturing the true economic profit of an organization than any other evaluation tools^[1]. EVA most directly links to the creation of shareholder wealth over time.

In corporate finance, EVA is an estimate of the amount by which earnings exceed or fall short of the required minimum rate of return that shareholders and debt holders could get by investing in other securities with comparable risk. The basic formula of EVA is as follows:

$$EVA=(r-c)\times K=NOPAT-c\times K$$

where:

$r= NOPAT \div K$ is the Return on Invested Capital (ROIC);

c is the Weighted Average Cost of Capital (WACC);

K is capital employed;

$NOPAT$ is the Net Operating Profit After Tax, with adjustments and translations for the amortization of goodwill, the capitalization of brand advertising and others.

Any value obtained by employees of the company is not included in the calculations.

Linda M. Lovata1 and Michael L. Costigan points out that accounting adjustments are a focal point of the EVA formulation and the results presented in their study suggest that providing appropriate incentives may be more complex than the developers of EVA imply^[2]. Andrew C. Worthington and Tracey West attempt to provide a synoptic survey of EVA's conceptual underpinnings and the comparatively few empirical analyses of value-added performance measures. Special attention is given to the GAAP-related accounting adjustments involved in EVA-type calculations^[3]. Li Chunyu, Huang Weiwei chooses some accounting events such as non-recurring losses, restructuring losses, goodwill, strategic investment, etc, to study the necessity to adjust them from the aspects of rationality, effectiveness, cost and irreplaceable, and finally gives an analytical framework how to adjust the events^[4].

2 Basic Functions of EVA

Through more than twenty years' promotion by Stern Stewart & Co., EVA, as a new measure of performance, has been widely adopted by the enterprises in the US. Hundreds of large companies in the world such as Siemens, Sony, Coca Cola, SPX adopt EVA to evaluate their value and performance.

EVA has some important functions in the company. EVA improves the deficiencies that accounting

statements not fully consider the cost of capital. It can help managers to clearly understand the company's operations, so as to put forward higher requirements for managers. EVA index is widely used to evaluate the financial performance of the company.

EVA has considered the cost of equity capital. China's current financial accounting system only recognizes and measures the cost of debt capital, but the cost of equity capital cannot be deducted from operating profit. The accounting profit calculated by this method cannot reflect the company's true operating performance.

EVA can more accurately reflect the value created in a given period than any other methods. The traditional performance evaluation system regards profit as the primary measure of business performance indicators. This will easily lead to the operator to manipulate the profit for purpose of embellishing performance.

EVA can help the listed company to solve the problems in decentralized management. All the departments of the company can determine their EVA financial goals based on their cost of capital. These goals can also be co-ordinated and complemented by inter-departmental communication. Each department may also develop long, medium and short-term goals for different financial objective.

EVA can be used as early warning financial indicators. Compared with traditional profitability indicators, EVA can be taken as an early detector whether the business is in poor condition especially when the company expands its business scale.

EVA can provide an effective incentive mechanism. The mechanism uses the increased amount of EVA to measure the contribution of the operators, and takes a fixed percentage of the amount as an incentive bonus for the operators. This will link the operators' interests with shareholders' interests, and encourage the operators create more value from the business point of view. So, EVA is really an effective incentive tool for the company.

EVA can truly reflect the company's operating performance. Unlike profit-based enterprise performance evaluation methods, EVA includes the cost of equity capital (opportunity cost) in the cost of capital. This is helpful to reduce economic efficiency distortion of traditional accounting indicators. And EVA can more accurately evaluate the operating results of the company or the sectors in the company, and reflects their operational assets efficiency.

3 Necessity for Special Adjustment When Calculating EVA

When calculating EVA, it is necessary to appropriately adjust the accounting events in order to avoid accounting distortion. Stern Stewart, EVA index creator, said that the adjustments aimed at creating one kind of performance measure method enabling the managers to work like the owners of the company, and the specific purposes include: adjustment to the impact of sound accounting (such as R&D costs capitalized, First In First Out), earnings management (eg, not to mention the provision for bad debts), to eliminate the influence of past accounting errors on the decision-making (such as to prevent false book value of assets), etc.

As the after-tax operating accounting, net profit is calculated based on accounting standards and accounting system, and the accounting profit often distorts the company's true economic profit and economic value of assets in some extent, since the accounting method uses accrual basis of accounting following the sound principle and matching principle. In order to get an accurate value of EVA, and let it reflect the real economic benefits, the contents related to financial statements should be adjusted.

Under general accounting conventions, net profit is calculated by the Accounting Standards. Since the accounting treatment follows accrual principle, matching principle and cautious principle, the net profit and the true economic value of asset will be distorted. So, it is necessary to adjust the reported accounting results to avoid the distortions encountered in measuring the true economic performance.

Typical adjustments that are required in EVA calculations include:

(1) Adjustment to net profit;

Add net capitalized intangibles; Add impairment and deferred income tax; Add goodwill written off and accounting depreciation (deduct economic depreciation); Add interest on debt capital.

(2) Adjustment to capital employed

Add net book value of amortized intangible assets; Add accumulated provision for depreciation and goodwill amortization previously written off; Add provisions such as those in respect of bad debts and deferred income tax.

Stern Stewart suggests that 164 accounting events should be adjusted when calculating EVA in order to eliminate accounting distortions to the company's performance. Since the suggestion is based

on the accounting treatment under US GAAP, and the US GAAP is different from China's Accounting Standards (CAS), the special adjustment under CAS should be done when calculating EVA.

G.B. Stewart, the author of "The Quest for Value", suggests whether or not to adjust the accounting data according to the following standards: (1) The EVA must comply with the importance principle; (2) Whether the manager can affect the accounting results. He must maintain neutrality; (3) The actual calculation should be understandable; (4) Whether the information collected must be objective, and the information should be easily collected.

The special adjustment when calculating EVA should also comply with these four standards under China's Accounting Standards.

4 Some Methods for Special Adjustment When Calculating EVA under CAS

The following items should be adjusted when calculating EVA in order to get an accurate conclusion under China's Accounting Standards, and the adjustment methods are as follows.

4.1 The adjustment to income tax incentives and subsidy income

There are many preferential policies for corporate income tax in China, then this leads to the company's actually paid income tax often less than the statutory tax. Since there is always a certain time limit for the tax incentives, after exceeding the time limit for tax preference, the enterprise still has to pay income tax in accordance with the statutory tax rate. When calculating EVA, the income tax incentive amount should be adjusted as deferred revenue, the deferred revenue should be amortized in a reasonable period, and the operating net profit should be reduced in this year. The time-limited value-added tax incentives, business tax incentives and government subsidy income should also be adjusted in this way.

4.2 The adjustment to debt restructuring and non-monetary transactions

According to Accounting Standard for Business Enterprises No.12-Debt Restructuring, when a debt is liquidated by non-cash assets, the creditors should take the transferred non-cash assets as fair value into account. The difference of the book balance of the restructured debt and the fair value of the transferred non-cash assets should be received in the current profits and losses. When the debt is converted into capital, the creditor should recognize the fair value of the shares as investment to the debtor, and the difference of the book balance of the restructured debt and the fair value of the shares should be received in the current profits and losses. Since the profits and losses coming from debt restructuring are not produced by the normal business, the net profit should be adjusted, and the profits and losses coming from debt restructuring should be excluded in net profit when calculating EVA.

According to Accounting Standard for Business Enterprises No.7-Exchange of Non-monetary Assets, the fair value of swap-out assets and relevant payable taxes and dues should be regarded as the cost of swap-in assets, and the difference between the fair value and the book value of the swap-out assets should be recorded into the profit and loss in current period. Since the profits and losses coming from non-monetary transaction is not produced by the company's normal business, when calculating EVA, it is necessary to adjust the net profit, and to exclude the profits and losses coming from non-monetary transaction from net profit.

4.3 The adjustment to R&D expenses

According to Accounting Standard for Business Enterprises No.6-Intangible Assets, the expenditures for the company's internal R&D projects should be recorded into the profit and loss in current period. The expenditures in development stage for the company's internal R&D projects may be confirmed as intangible assets when they satisfy the required conditions. The R&D expenditure can promote the company's technological innovation activities. Once the R&D project is successful, this will be helpful to promote the company's long-term development and economic efficiency.

Therefore, if the R&D expenses are included in the current one-time costs by sound principles, this would lead to underestimate the accounting earnings and total assets in current period. So it is necessary to adjust the R&D expenses included in the current profits and losses. When calculating EVA, the R&D expenses which included in current profits and losses should be capitalized, and be amortized in the R&D project's effective period as a long-term prepaid expenditures. The profit and capital employed should be adjusted accordingly.

4.4 The adjustment to start-up costs

According to Enterprise Accounting System in China, start-up costs should be included one-time in profits and losses in the first month when the company starts its business. Due to start-up costs are the costs of setting up enterprises, with the nature of permanent assets, it is necessary to exclude the start-up

costs in profits and losses when calculating EVA, but to add this start-up costs to the company's after-tax net operating profit.

4.5 The adjustment to assets depreciation reserves

The assets depreciation reserves provided by enterprises in accordance with accrual accounting standards are included in the cost in current period by the sound principle, but they do not bring any real cash flow for the company. The actual assets are not reduced due to provision for assets depreciation reserves. The provision will underestimate the company's total invested capital by one hand, and also underestimate the enterprise's true operating profit. When calculating EVA, the assets depreciation reserves provision should be added to the total capital invested, and the company's after-tax operating net profit should also include the reserves provision in the period.

4.6 The adjustment to inventory valuation method

In accounting practice, there are many methods for inventory valuation, such as FIFO, LIFO, weighted average, individual identification and so on. Under FIFO method, the amount of assets can reflect the most recent value of the inventory. So, when calculating EVA, the other inventory valuation methods should be adjusted to the FIFO method. The amount of increased inventory valuation after adjustment by FIFO should be added to the total capital invested, and the less carry-over inventory costs should be added to after-tax operating net profit.

4.7 The adjustment to operating lease

When the company acquires assets through operating lease, the operating lease cost should be treated as the expenses in current period. Since operating lease can increase the company's real assets, when calculating EVA, the operating lease assets should be added to the total capital invested, and the costs of operating lease in current period should be added to after-tax operating net profit.

5 Conclusion

China's State-owned Assets Supervision and Administration Commission of the State Council (SASAC) claimed that all the large state-owned enterprises must adopt EVA to measure the performance from the year 2010 on. In order to get an accurate EVA of the company, some accounting events should be adjusted under CAS. In this paper, the adjustment methods for seven accounting events are discussed when calculating EVA in China, and this will help the company to measure the performance accurately. However, general principle should be discussed to adjust all the accounting events under CAS, which is helpful for China's company to accurately measure its performance and improve the management.

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