CHAPTER 2: EVA FRAMEWORK

2.1 EVA definition

Stewart (1991) defines EVA as the net operating profit after tax (NOPAT) in excess of a capital charge taken by the company. Companies which earn NOPAT in excess of the cost of employing capital will have positive EVA (they are called value creators) while those that earn NOPAT of less than the cost of employing capital will have negative EVA (they are value destroyers).

There are two ways of viewing EVA, that is using the RI method and the spread method.

(1) Under the RI method,
EVA = NOPAT – Capital charge
EVA = NOPAT – (Invested capital x Cost of capital)

NOPAT is profit arising from a company's operation after depreciation and taxes but before interest and non-cash bookkeeping entries like goodwill amortisation and deferred tax reserve. Indeed, NOPAT is the total pool of profits available to provide a cash return to all financial providers of capital to the company.

Stewart (1991) defines invested capital (IC) as total assets minus non-interest bearing current liabilities, which is invested in going-concern operating activities. Alternatively, IC is the amount of contributed and retained debt and equity capital, plus other long-term liabilities in a company. According to Stewart (1991), this is the sum of cash invested in a company's net assets over its life, without regard to financing form, accounting name or business purpose. The cost of capital (COC) is the weighted average of the after-tax cost of debt and the cost of equity.

(2) Under the spread method,
EVA = (Rate of return – COC) x IC
where Rate of return = NOPAT / IC

Assuming that IC is positive, a company is a value creator if it earns a rate of return that exceeds its cost of capital. Likewise, a company is a value destroyer if it earns a rate of return that is below its cost of capital.

Essentially, a company's EVA can be improved upon by the following ways: -
(1) Increasing the operating profits without the use of more capital via cost-cutting programmes and employment of financial leverage,
(2) Be selective in the investment of new capital in projects and businesses that will earn more than the cost of capital, and
(3) The optimal use of capital, where capital is being diverted or liquidated from business activities that do not provide adequate returns.

In practice, computing EVA is far more elaborate depending on the number and type of adjustments made to both NI and equity in order to arrive at NOPAT and IC respectively. These adjustments are made in order to overcome accounting distortions in Generally Accepted Accounting Principles (GAAP) practices such as the use of last-in, first-out (LIFO) versus first-in, first-out (FIFO) accounting for inventory, full cost versus successful effort accounting, amortisation of goodwill, treatment of research and development (R&D) costs, and deferred taxation. The adjustments are also made to ensure a fairer measure of assets employed in the business and that the profits are operating profits arising from the core business. Stewart (1991) has developed over 160 proprietary adjustments in order to arrive at NOPAT and IC.

Tables 1 and 2 present some of the common EVA adjustments.

Table 1 EVA adjustments

NOPAT	**IC**
= NI to equity	= Equity
+ Increase in equity equivalents	+ Equity equivalents
Adjusted NI	Adjusted equity
+ Preferred dividend	+ Preferred stock
+ Minority interest provision	+ Minority interest
+ Interest expense (net of tax)	+ Long- and short-term debts

Table 2 Examples of equity equivalent adjustments

Add to NOPAT **Increase in equity equivalents**	**Add to IC** **Equity equivalents**
1. Exceptional loss / (gain) after tax	1. Cumulative exceptional loss / (gain) after tax
2. Fixed assets write-down	2. Cumulative fixed assets write-down
3. Loss / (gain) on disposal of fixed assets and investments	3. Cumulative loss / (gain) on disposal of fixed assets and investments
4. Increase / (decrease) in bad debt and stock obsolescence reserve	4. Cumulative increase / (decrease) in bad debt and stock obsolescence
5. Increase / (decrease) in prov for diminution in value of investments	5. Cumulative loss / (gain) for diminution in value of investments
6. Goodwill amortisation	6. Cumulative goodwill amortisation
7. Trademark amortisation	7. Cumulative trademark amortisation
8. Increase in deferred tax reserve	8. Deferred tax reserve
9. Restructuring costs written-off	9. Cumulative restructuring costs
10. Increase in LIFO reserve	10. LIFO reserve
11. Increase in net capitalized intangible	11. Net capitalized intangibles
12. Increase in full cost reserve	12. Full cost reserve
	13. Unrecorded goodwill

In the case of R&D costs, the amount written-off to the profit and loss account is capitalized and amortised over the useful economic life of the product to which it relates. The effect on NOPAT is to add back R&D costs expensed, minus the period's amortisation of capitalized R&D costs. The corresponding adjustment for IC is to add back the cumulative R&D costs written-off to the profit and loss

account minus the period's amortisation of the capitalized R&D costs. Similar treatment is accorded for new product, marketing and advertising costs.

2.2 MVA definition

Another performance measure that is frequently used in conjunction with EVA is Market Value Added (MVA). Stewart (1991) defines MVA as the difference between the total market value of debt and equity of a company and its IC. Assuming that the market value of debt (MVD) is equal to the book value of debt (BVD), then MVA is also the difference between the company's market value of equity (MVE) and the book value of equity (BVE) that is supplied by shareholders. MVE is determined by multiplying the number of shares outstanding by the stock price.

MVA = (MVE + MVD) – (BVE + BVD)
MVA = MVE – BVE if MVD = BVD
MVA = (Shares outstanding x Stock price) – BVE

The MVA measure indicates how much value a company has created or destroyed from its shareholders' capital. Successful companies will generate positive MVA and this implies that the company has created value for its shareholders in the long-term. Unsuccessful companies will generate negative MVA and this means that the company has destroyed the value of capital invested by its shareholders in the long-term. MVA, used as a corporate performance measure, therefore fits well with the primary goal of management that is to maximize shareholders' wealth.

The computation of EVA and MVA for this study is based on the adjustments listed in Tables 1 and 2, and other adjustments that is deemed necessary to ensure a fairer measure of assets employed in the business and that the profits are only those arising from the core business. Note that the EVA and MVA adjustments in this study are also dependent on the extent of the companies'

disclosure of information in their respective annual reports. An example of how EVA and MVA are computed for RJ Reynolds is found in Appendix 1.

2.3 The Link between EVA and MVA

According to Stewart (1991), MVA is also equal to the market's estimate of the net present value (NPV) of all future EVA. MVA is an external measure that captures the long-term wealth creation potential of a company while EVA is the internal measure that is most closely related to MVA. Rearranging the MVA equation, the relationship between MVA and EVA can be expressed as: -

$$MVE = BVE + MVA$$

$$MVE = BVE + \text{NPV of future EVA}$$

$$MVE = BVE + [\ EVA_1 / (1+c)^1 + EVA_2 / (1+c)^2 + \ldots\ ]$$

This means that companies generating positive EVA should see a rise in their MVA, which in turn should drive up stock prices. Similarly, for companies generating a stream of negative EVA, this will lead to lower MVA, which will then cause stock prices to decline. In short, EVA is what drives stock prices.