Free essay about residual income model

Business, Company

Residual Income Model

In general, the residual income model makes no assumptions relating to the future earnings and earnings growth. However, if we assume a constant growth and dividend growth, a residual income model can be derived that efficiently illustrates the fundamental drivers of the residual income. Thus, under such assumptions, a fundamental based equation for justified Price/Book Value which can be derived will be:

Po/Bo= 1+ (ROE- g)/(r-g)

Interestingly, since the justified price is equivalent to stock's intrinsic value, we can re-arrange the above equation to find the intrinsic value of the stock. For Instance, since Po= Vo, we can conclude that the intrinsic value of the stock is equal to book value per share(Bo) plus the present value of the expected stream of residual income i. e. (ROE- g)/(r-g)]. Hence, the equation for finding the intrinsic value of the stock is :

Vo= Bo+[(ROE- g)/(r-g) Bo]

In the equation above, while Bo, is the book value of the company, [(ROE- g)/(r-g)], represents additional value expected because of the ability of the company to generate additional returns in excess of its cost of equity. In other words, the latter part is the present value of the company's economic profit. This equation is also referred to as ' Single Stage Residual Income Model'.

Importance of Book Value and ROE in the formula and related concerns:

The above formula carries equal concern for Book Value and ROE. Book value is the difference between assets owned by the company less its

liabilities. However, since many accounting standards both in USA and international areas, allow exclusion of liabilities from the balance sheet, there are concerns that Book Value reported by the company is not fair. Similarly, as for ROE, if the ROE of the company is equal to its cost of equity then the intrinsic value will be equal to its Book Value. On the contrary, if ROE of the company is greater than the cost of equity, then the company will have positive residual income and will be valued above its book value.

Example of Single Stage Valuation Model:

An example will help us in understand the residual income model:

Joseph Yoh is evaluating a purchase of Canon Inc Current book value per share Is $18. 81 and the current price per share is $51. 90. He expects that the long term ROE to be 16 percent and long term growth rate to be 8 percent. Assuming a cost of equity of 11 percent, what is the intrinsic value of Canon Stock calculated using a single stage residual income model?

Using, the Single Stage Valuation Model equation: Vo= Bo+[(ROE- g)/(r-g) Bo]

Vo= 18. 81+ [(0. 16-0. 11)/(0. 11-0. 08)]*18. 81

Vo= $50. 16

Multistage Residual Income Model:

Since the single stage residual income model have a certain drawback of single stage residual income model which assumes of forecasting the residual income indefinitely into the future, which makes it difficult to calculate the present value of the residual income and implement the residual income model. Thus, analyst use multi-stage residual income model

to forecast residual income for a certain time horizon and then provide an estimate for the terminal value based on continuing residual income at the end of that time horizon. Continuing residual income is the residual income after that is expected over the long run.

The analyst make one of the following assumptions for residual income model:

- Residual Income is expected to persist at its current level forever.
- Residual Income is expected to drop immediately to zero from the terminal period forward.
- Residual Income reflects reversion of ROE to the mean level.
- Residual Income is expected to decline over time as ROE falls to the cost of equity.

Formula:

Strengths and Weakness of Residual Income Models:

Strengths of residual income models include the following:

- Terminal Value does not dominate the intrinsic value estimate, as is the case with dividend discount model and free cash flow valuation models.
- Residual Income models use accounting data, which is easy to find from the financial websites.
- The models are applicable to the firms that do not pay dividends or that do not have a positive expected free cash flows in the short run.
- The models are applicable even when the cash flows are volatile.
- The models focus on economic profitability rather than just on accounting profitability.

Weakness of residual income model include the following:

- The model rely on accounting data that can be manipulated by management.

- Reliance on accounting data requires numerous and significant adjustments.

- The residual income model use of accounting income assumes that cost of the debt capital is reflected appropriately by the interest expense.

- The model assumes that the clean surplus relation holds or that its failure to hold has been properly taken into the account.

Favorable and Unfavorable Circumstances for using Residual Income Model:

Residual income models are appropriate under the following circumstances:

- A firm do not pay dividends or the stream of payments is too volatile to be sufficiently predictable.

- Expected free cash flows are negative for the foreseeable future.

- The terminal value forecast is highly uncertain, which makes the dividend discount or free cash flow model less useful.

Residual income models are not appropriate under the following circumstances:

- The clean surplus accounting relation is violated significantly

- There is significant uncertainty concerning the estimates of book value and return on equity.