

Future Earnings Discounted Plus Equity Model

Written by Dr. Econ

Wednesday, 13 July 2011 00:00 - Last Updated Thursday, 06 October 2011 06:51

There are many different ways to estimate the **fair value** of a company. I look at it from a financial engineering perspective. Let's say there is a project. You invest your capital in the project. You expect the project to make a minimum return for your investment. At the same time, you need to know what the downside of the project is. In the worst case, you will lose your money up to the equity value. Thus, the companies already have this equity in them. By purchasing a stock, you pay for the rest.

The companies make profit. They are supposed to make profits. If they do not, make sure to stay away from the company. As a shareholder, you are the owner and at least theoretically you are entitled to receive the profits. I would rather prefer it in my pocket in form of a dividend check, but still it is in the company's account which I am entitled a portion of. The profits continue growing in the long term. However, analysts have almost no idea about what will be the profit growth after 5 years. Therefore 5 years is a good cut-off point for the profits. The company still keeps making profits, but we assume the profits to stay constant.



Based on the above logic FED+ Fair Value is calculated as the following:

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$$\text{Fair Value} = E_0 + E_1 / (1+r) + E_2 / (1+r)^2 + E_3 / (1+r)^3 + E_4 / (1+r)^4 + E_5 / (1+r)^5 + \text{Disposal Value}$$

$$\text{Fair Value} = E_0 + E_0 (1+g) / (1+r) + E_0 (1+g)^2 / (1+r)^2 + \dots + E_0 (1+g)^5 / (1+r)^5 + E_0 (1+g)^5 / [r(1+r)^5]$$

The earnings after the last period act as a perpetuity that creates regular earnings:

$$\text{Disposal Value} = D = E_0 (1+g)^5 / [r(1+r)^5] = E_5 / r$$

$$\text{Fair Value} = E_0 + E_0 (1+g) / (1+r) + E_0 (1+g)^2 / (1+r)^2 + \dots + E_0 (1+g)^5 / (1+r)^5 + E_5 / r$$

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