

15.433 Investments

Assignment 2: Security Analysis

You are now in the position of a research analyst. You are covering the prestigious industry sector “Asset Management / Custody Business”. The portfolio managers expect from you:

- to estimate the **fair value** of Northern Trust.

On purpose you will receive a lot of information. A research analyst gets swamped every day with press releases, research reports from broker companies, etc. One of your objectives will be to figure out what information is “need to know”, and what information is “nice to know”. Attached you find the annual reports of Northern Trust and several research papers. The information required for the assignment is not limited to the information package. I encourage you to research more information. It is my full intention to give you a lot of information.

On the web you find a template for the valuation. It is already filled with *live data* and you are encouraged to enhance / modify the information from your research. However, I encourage you to develop / enhance your own valuation model.

I expect from you:

- the estimated fair value;
- a transparent valuation process;
- a description of your key consideration for the valuation; and
- should you move away from the result of the quantitative model approach, I want a description why you think the model does not represent the fair value.

Write your assignment in a way that the TA’s can read it, disclose the sources of the information following academic standards.

Defining Fair Value

We all like bargains but few investors attempt to estimate a company's worth before buying its stock. Investing requires the same discipline one exerts when purchasing a house, a car or even groceries. Most capital losses in the stock market arise when investors buy securities at inflated levels and do not anticipate the amount of risk they are taking when purchasing stocks that trade at high premiums to the fair value of the business.

What is fair value?

From a purely static point of view, the fair value of an equity share is a point of indifference. A price level, below which you would buy the stock. Or a price level, above which you would sell the stock. However, real life is more dynamic and as a stock investor you are dealing with moving targets. Here stock prices fluctuate madly, as much as eight or 12 per cent every day.

Thankfully, the fair value of a company does not fluctuate with its price. It is important to understand this before you proceed with your equity investments. Forces of demand and supply in a stock market generate price. Fair value, on the other hand, is an output of a valuation process.

How to determine fair value?

A simple method is to use the price-to-earning multiple, where the price of a company's stock is divided by the earnings per share of a company. Which makes sense since growth in earnings is a proxy for how well a company is performing within a given market opportunity. However, as long-term investors we are interested in absolute value, irrespective of how the stock market is currently pricing the company. Here, the P/E loses relevance since it will be continuously influenced by the demand or supply for a company's stock on the numerator side.

Earnings per share, which represents the denominator side of the P/E, also may not help. Since all earnings do not equal free cash flows. Most of it is ploughed back into the company via capital expenditures. And as investors we are interested in the surplus cash (though this term has many variations, it is loosely defined as the cash after providing for recurring capital expenditures plus depreciation, the later being a non-cash charge), which can be returned to equity shareholders.

This dictum is codified in the discounted cash flow model. Which says, that the value of a stock is equal only of the free cash flows it produces in the future, discounted back to the present.

When you discount future income, you essentially adjust for the fact that a rupee in hand today is more valuable than a rupee to be received in the future because today's rupee can be invested elsewhere to generate a return. The DCF allows you to discount incoming

15.433 Investments

cash flows by a rate, which you believe equates the level of risk you are assuming. This risk-adjusted value then is compared with the prevailing stock price to check a company's investment worthiness.

If a stock is said to be trading at fair value, it simply means that the market is pricing it according to the value it represents. Otherwise, it could either be bought or sold. With minor modifications, the DCF can be used to value a range of companies, from those growing faster than the economy to those growing slower, or matching the pace of the economy.

Limitations

However, like all other valuation models, the DCF too has its limitations. For decades it served analysts and investors well until faced with the prospect of valuing companies in the so-called new economy businesses.

Not that the basic premises of the DCF are under question, but how does one account for companies where revenues are growing at a rate, which have a high element of surprise. And small changes in the amount of information available can bring about large changes in stock prices. How does one come up with an appropriate discount rate, which reflects the high level of technological risk for many such companies? How does the DCF model build in for a boost in valuation that comes when a company is taken over by another?

The inability to predict the fair value for these companies also causes their stock prices to fluctuate wildly. To state it more correctly and in the words of John Burr Williams, who pioneered the concept of DCF: "They (the stock market) had high hopes for the business, but no logical evaluation of these hopes in terms of stock prices. The very fact that the company was one of the hardest of all stocks to appraise was the reason it sold at extravagant prices, for speculation ever feeds on mystery, as we have seen before."

Hence distinguish between "price" and "value"

In the end, instead of grasping on the appropriate valuation for these companies, investors can caution themselves by thinking more carefully in terms of 'price' versus 'value'.

Price is not value. Price is what you pay. Value is what you get in return for owning a piece of a company. When you shop for a consumer durable, you don't pay the list price without being sure of the quality of the good and consistency of its performance. Issues like this define value.

In case of equity stocks, thinking about the return you will need to compensate for the investment risk is probably a good place to start. If you cannot see a company providing such a return over a longer term, do not invest. Academicians and analysts can offer a potpourri of valuation tools, but ultimately the investor has to decide the price he or she is comfortable paying for a stock.