

The FTS Valuation Tutor

The FTS Valuation Tutor is a unique way to learn about methods used to value a stock. Also known as “equity valuation,” the aim is to study the fundamentals of the operations of the company to determine what the stock should be worth. This has important implications, particularly in trading; for example, you may have heard of financial analysts saying that a company is undervalued; what they mean is that the value they have come with is greater than the current market price.

We provide datasets covering the S&P500 stocks, split into three datasets: DOW 30 stocks, the S&P 100 stocks, and the S&P 500 stocks. The data is updated periodically, and eliminates the need to sort through the financial reports of the companies for the necessary data. You can modify the data, and also create your own data sets (which can then be stored on our server for easy access).

Overview

(If you want to get started using the FTS Valuation Tutor right away, scroll down to the Quick Start section of this document).

Over the years, a variety of equity valuation methods have been developed. The FTS Valuation Tutor lets you learn many of these methodologies while using actual information on real world companies. Our standard data sets include the DOW 30 stocks and the S&P 100 stocks. You can modify the data, add you own companies, and study the implications of alternative methodologies. You can even store your dataset on our server, so that it is always available to you.

The FTS Valuation Tutor starts with the simplest model, known as the “dividend model.” This model requires an estimate of dividends paid by the company, the growth rate of the dividends, and discount rates to arrive at a present value.

The next set of models look at the components of the dividend model in more detail. They branch out in two ways: first, there are different ways of calculating dividends. Second, there are different ways of calculating the growth rate. The alternatives offered by the FTS Valuation Tutor use information from the company’s financial statements to derive alternative estimates for these numbers. There are also several ways you can calculate the discount rate, including using the Capital Asset Pricing model and option-based approaches, which are also covered by the program.

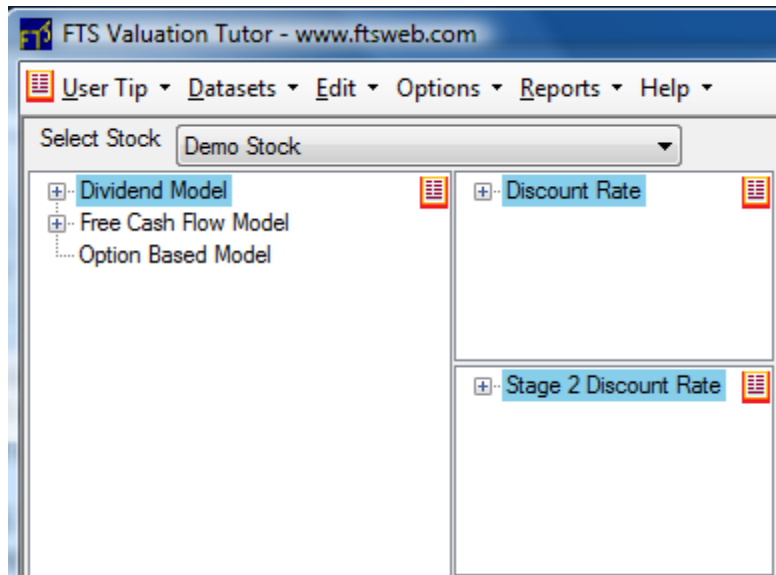
The more complex models move away from dividends that are paid to dividends that could be paid. For example, suppose a company made a profit, but decided to re-invest the money rather than paying it out. In that case, dividends are zero, but the company is clearly more than zero! These are called the “Free Cash Flow to Equity (FCFE) Models.” The FCFE measures the “economic dividend” or what could be paid out to shareholders. There are multiple ways of calculating the FCFE, and all these methods rely on the company’s financial statements.

The third model is based on the option pricing approach. These models are particularly useful for companies that are distressed or are currently making losses, in which case they have negative free cash flows.

The best way to learn about the methodologies is in combination with a textbook. While many corporate finance texts have chapters on valuation, there are also more comprehensive texts, such as “Damodaran on Valuation: Security Analysis for Investment and Corporate Finance” by Aswath Damodaran.

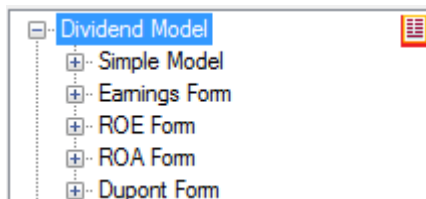
Organization of the FTS Valuation Tutor

The FTS Valuation Tutor is organized in a hierarchical way. The first hierarchy distinguishes consists of the three types of models: the dividend model, the FCF model, and the option model:



The Dividend Model

The variations of the dividend model can be accessed by click on the + sign to the left of “Dividend Model.” This reveals:

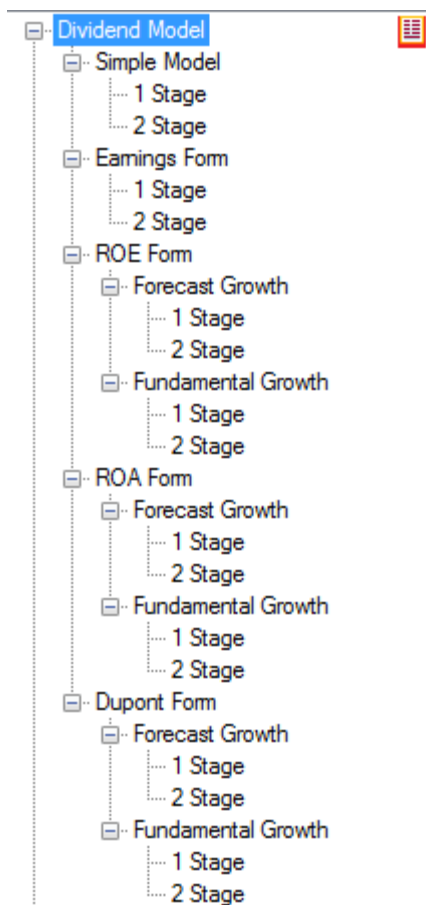


These variations are:

- Simple Model: the simplest model requires you to input an estimate of dividends.
- Earnings Form: this method obtains an estimate of dividends from earnings
- ROE Form: the “return on equity”, or ROE, is used to estimate dividends
 - The ROE can also be used to forecast growth. The “fundamental growth” variation of the ROE form is based on this approach, sometimes called “fundamental growth,”

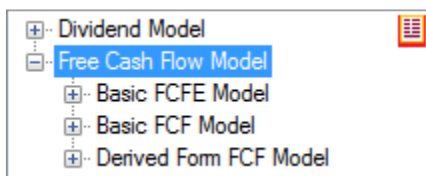
- ROA Form: this method derives the ROE from the ROA (“return on assets”). Again, this method has a “fundamental growth” variation.
- DuPont Form: this method uses the DuPont drivers of ROE (Net Profit Margin, Total Asset Turnover, and Financial Leverage Multiplier) are used to derive the ROE. This method also has a “fundamental growth” variation.

Each of the variations can be further decomposed into a 1- or 2-stage growth model. If you open all the variations with the dividend model hierarchy, you will see:



In a 1-stage model, the dividend grows at the specified (or calculated) growth rate. The 2-stage model allows you to separate out the short term from the long term. For example, a firm may grow abnormally fast for a few years and then grow at a “normal” rate. The two-stage models allow this separation.

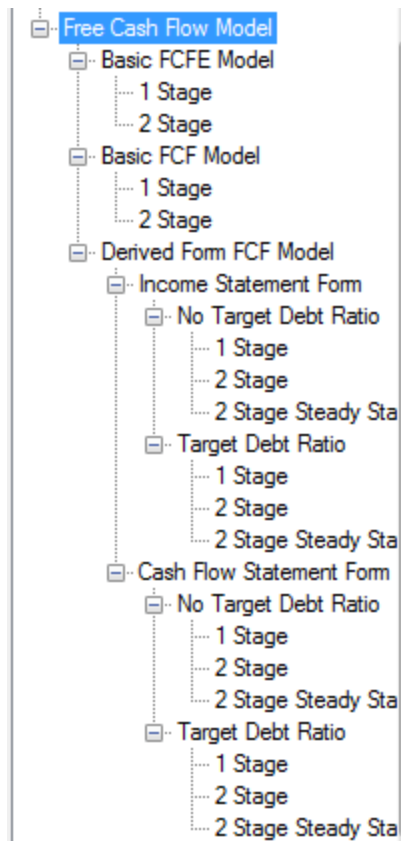
The Free Cash Flow Model



The variations of the FCF models are as follows.

- Basic FCFE Model: this model starts directly with the free cash flow to equity (FCFE). Financial databases sometimes provide estimates of the FCFE. You can also estimate it from other variables (as in the variations below).
 - Basic FCF Model: it is much more common that databases provide estimates of the Free Cash Flow to a Firm as opposed to the FCFE. This variation takes the FCF as an input and derives the FCFE.
- Derived Form of the FCF Model: the most comprehensive way to estimate FCFE is from the financial statements. There are two alternatives given here: working with the income statement, or working with the cash flow statement. Additional options concern long term behavior, such as whether to assume the current debt-to-equity ratio will persist or whether the firm has a target debt ratio. All the variations are explained in detail in the User Tips, which come up automatically when you click on a model.

All the variations of the Free Cash Flow Model are shown below:



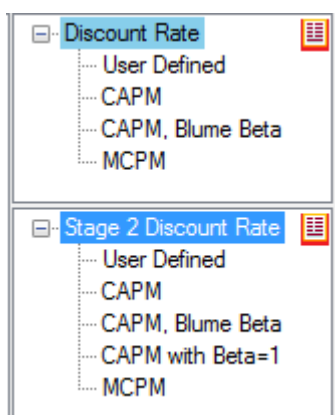
The Option Based Model

For companies that are making losses, the previous approaches do not apply. The losses could be due to one-time charges, a restructuring of the company, or general market conditions. A

startup company may also not have positive earnings. The option based approach provides a way to value such companies. The basic argument is that the company still has assets, and eventually, these will lead to profits. The stock issues by the company is viewed as an option on the assets' the stock holders only get paid after the company has met all its debt obligations. The option based model uses the Black-Scholes model to value such companies.

Discount rates

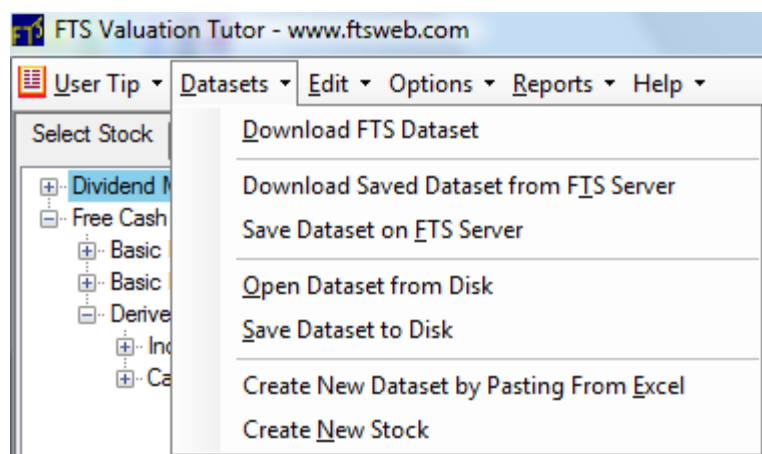
In the dividend model and the FCF model, you have to select the rates at which future values are discounted. You can specify different rates for the first and second stage of the two stage model. You can also choose different methods for calculating the discount rate. The discount rate variations are:



Again, these are explained in the User Tips.

Quick Start Instructions

The easiest way to start is to download the default dataset from FTS:



This has data on large US companies. Then, work through the models, using the User Tips (which automatically appear in the bottom part of the screen) as a reference guide.

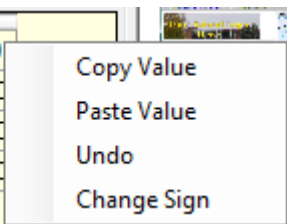
You can modify the data. For example, when the program starts, if you select the simple dividend model and the user defined interest rate, you will see:

Market Price	120.00
Annual Dividend	4.50000
Growth Rate	0.06600
Discount Rate	0.10650

To change the price to the current market price, click on the price, press F2 to edit the number, type in the new number, and then press Enter (the same way in which you would edit a cell in a spreadsheet).

You can also copy the data and paste it in. For example, if you go to a financial web site and obtain a quote on a stock, you can copy the quote from the web page, right click on the number in the Valuation Tutor and select "Paste" from the popup menu:

Market Price	120.00
Annual Dividend	4.50000
Growth Rate	0.06600
Discount Rate	0.10650



You can also create your own dataset in a spreadsheet and paste it in. The dataset must have a certain structure for the program to recognize it, and the User Tips show you what to do. Once you have modified or created your own data set, you can store it on our server. This makes it easy to access your data at any time.

The best thing to do now is to start interacting with the FTS Valuation Tutor, experiment with the parameters, and eventually learn how to analyze financial statements, combine them with forecasts of growth, and estimate the value of a stock.