Valuation Tutor 3.0: Quick Overview

Valuation Tutor is an interactive and visual presentation of Financial Statement Analysis and Valuation. It is designed to help you:

- Understand how to interpret and analyze the financial statements of a company
- Compare companies along various dimensions relating to efficiency, profitability, and risk
- Learn how different valuation models are used to derive the intrinsic value of a company

When you launch VT, you have to select what you want to do. You have 4 choices:

- **View SEC Filings**
    - This lets you explore company 10-K and 10-Q filings
        - Our database covers over 3000 companies
    - You can view the items as reported by the companies and plot the items
    - You can also access the full SEC filing to obtain information beyond just the financial statements
    - Chapter 2 of the online textbook covers this topic.
- **Common Size Analysis**
    - This is a continuation of "View SEC Filings." It lets you scale variables within the filings
    - For example, you could look at the income statement where all the variables are scaled by the total assets of the company
    - This is also explained in Chapter 2 of the textbook.
- **Financial Ratios: Visual Comparisons**
    - Valuation Tutor lets you study measures of company performance ("business ratios") and how these ratios are "priced" in the market ("price ratios")
    - Business ratios are explained in Chapter 3 of the online textbook.
    - Price ratios are explained in Chapter 4 of the online textbook.
    - This part uses data sets we have created from the company filings
        - You have to select a dataset. The smaller data sets have larger well known companies; the largest data set has over 3000 companies.
    - Valuation Tutor allows you to visually compare companies along different dimensions (business ratios and price ratios).
- **Intrinsic Value Models**
    - Here you explore a variety of models that derive an intrinsic or fundamental value for a company.
    - These models are explained in Chapters 6 to 10 of the textbook.
    - This part also requires you to select one of our datasets.
    - You can modify the data if you want to replace our estimates of some of the inputs into the models

To get you started, we now show you how to compare companies using "**Financial Ratios: Visual Comparisons.**"

We follow that with an example of using Valuation Tutor in conjunction with the **FTS Real Time Client** (Windows Version). That lets you explore the fundamental characteristics of *your* portfolio.

Financial Ratios: Visual Comparisons

Launch Valuation Tutor, and on the opening screen, select **"Financial Ratios: Visual Comparisons."**

On the following screen, you have to select a dataset. Select the 500 stock dataset. You will see the main Valuation Tutor screen:
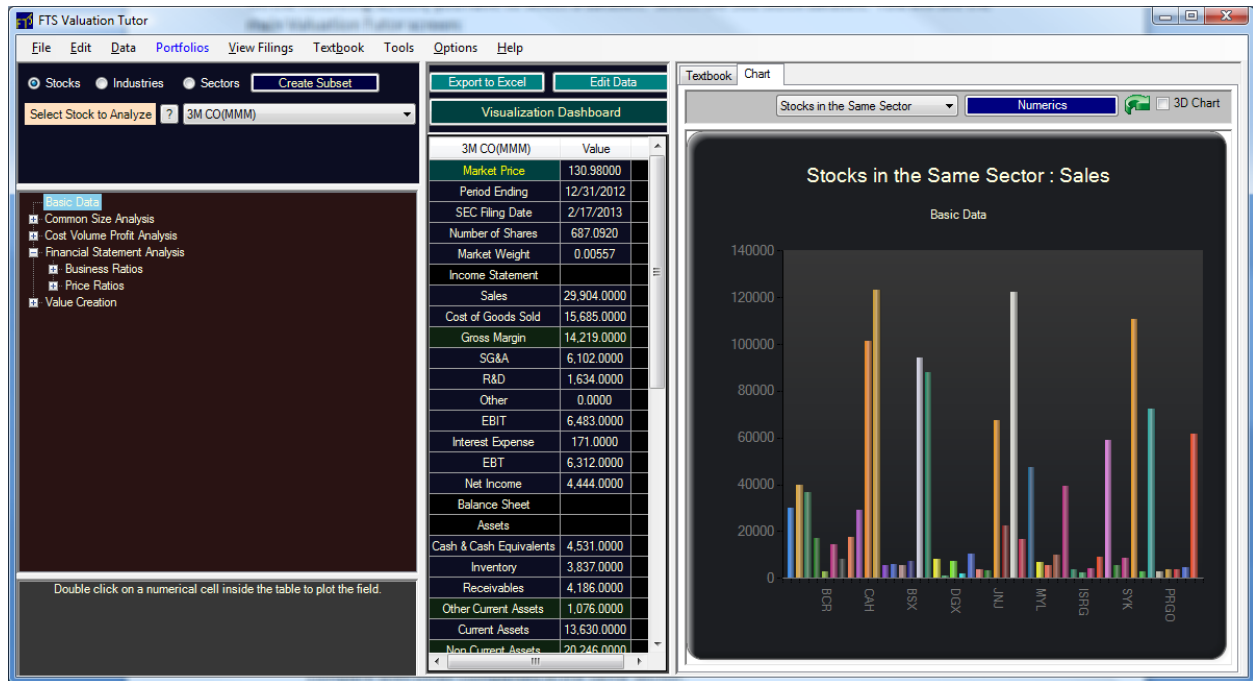
- The first company in the dataset (alphabetically) is selected
- The first "calculator" is also selected. In this case, it is 3M and the first calculator shows you various financial statement variables.
    - The different calculators in the "tree" on the left take you through the ratios described in Chapters 2 and 3,
- The numbers for 3M are in the table in the middle.
- The chart compares the company with others; in this case, it is showing you how 3M's sales compare with other companies in the same sector.
- Click on another field in the table to plot it.
- Select another calculator for comparisons
    - You can select the comparison set from the dropdown above the chart
   - You can enter tickers of individual companies for the comparison
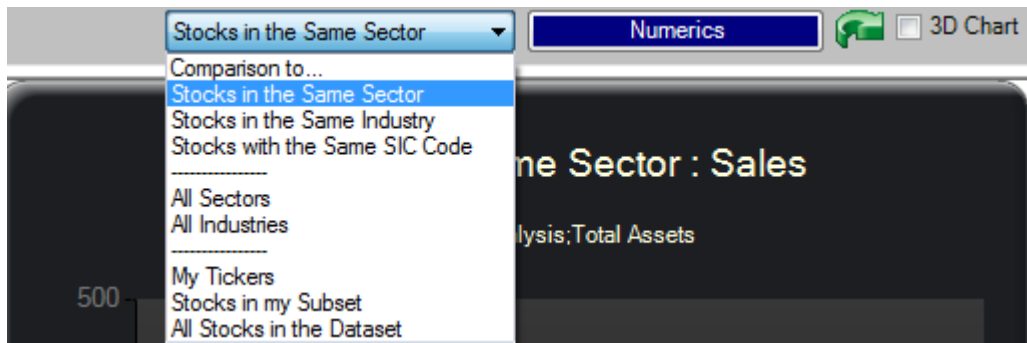
The Visualization Dashboard

This is a powerful way to extract information about company performance and to compare companies across multiple dimensions.

- Note: the chart on the initial screen plots one variable across different companies or sectors.
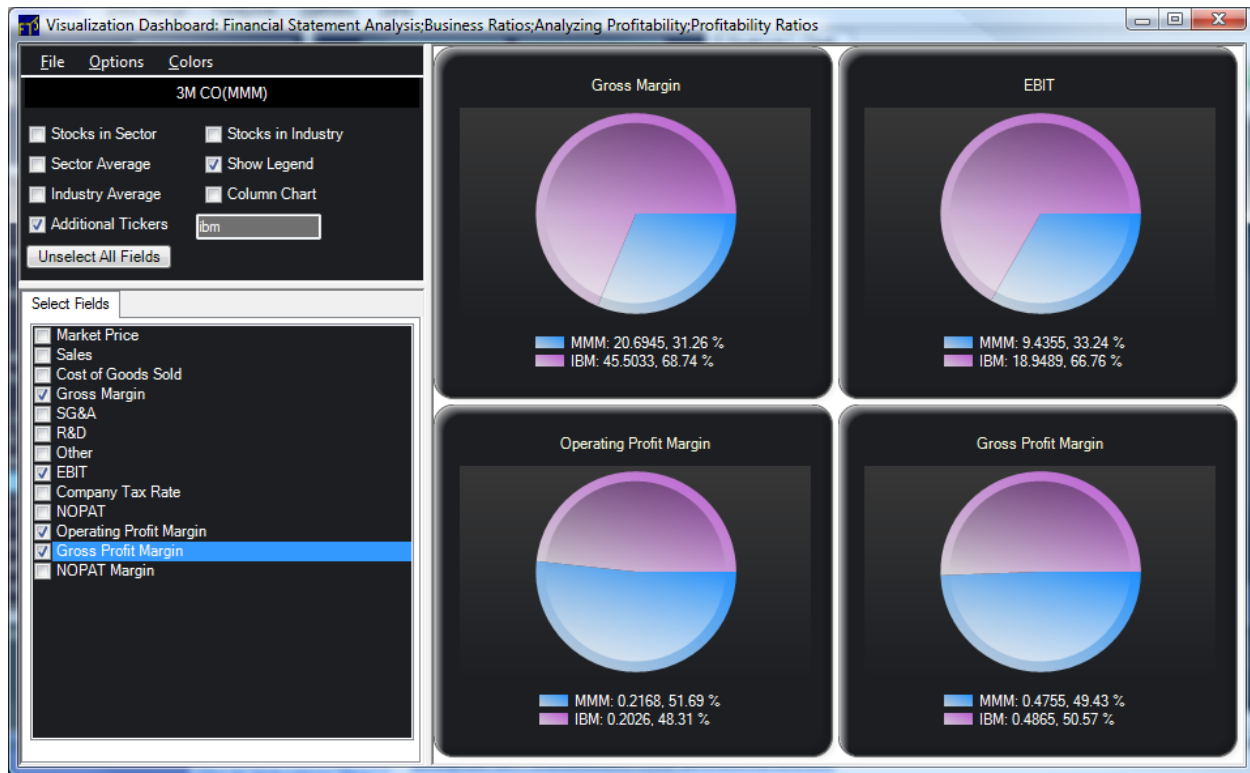- What we will show you now is how to compare companies along multiple dimensions.

Select "Profitability Ratios" from the tree:
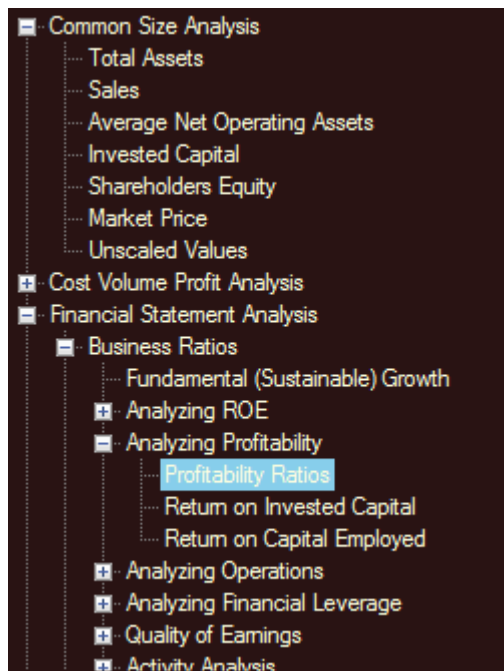
Then, click the "Visualization Dashboard" button above the numerical table:
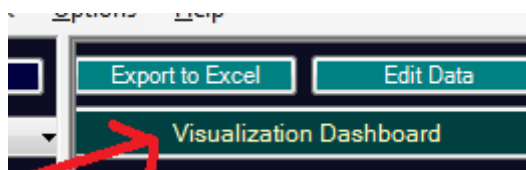
Let us compare 3M to IBM and see how they convert their gross margin into measures of profitability:


These are all "per share" values, and therefore easily comparable across companies. You can see that IBM's gross margin per share is more than twice that of 3M but 3M actually has a slightly higher operating profit margin per share. You could investigate why: is it because SG&A is higher for IBM? R&D? Simply check the fields you want to compare.

You can compare more than two. Here is an example with 3 companies:
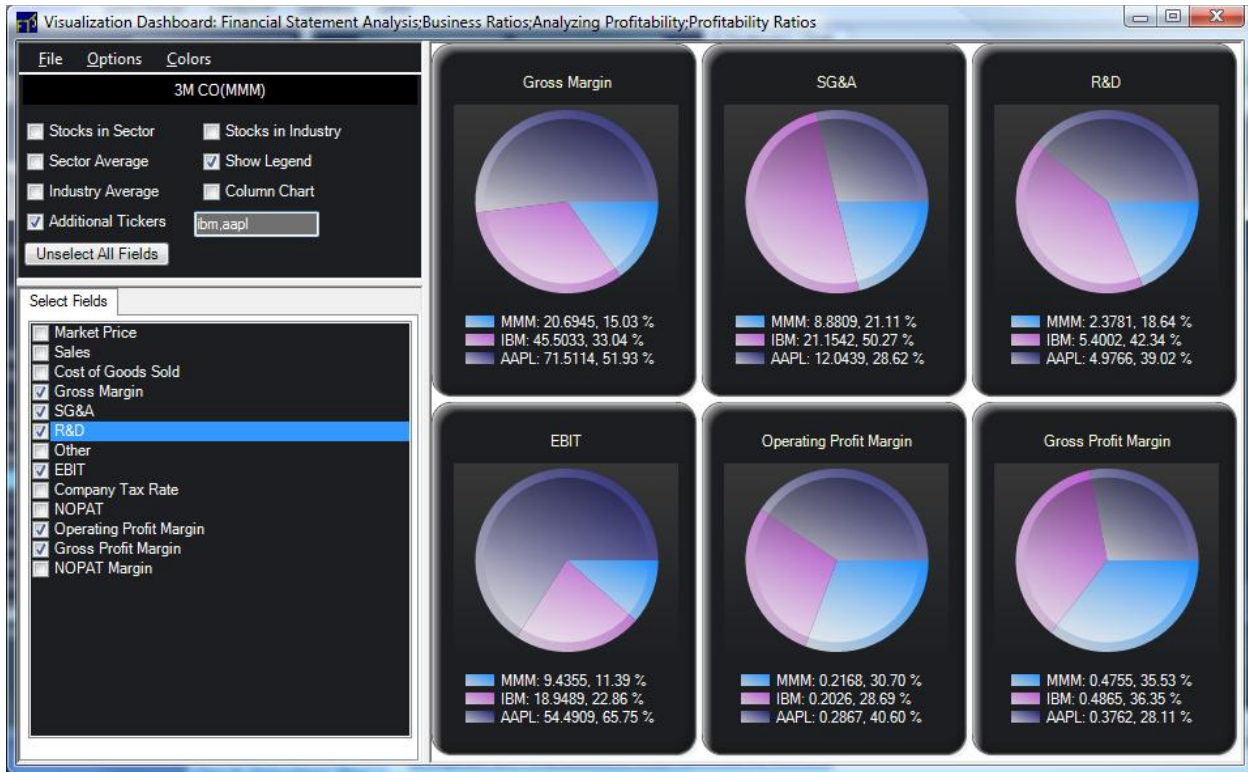
You can compare any set of tickers or check one of the settings in the upper panel, e.g. all stocks in the same sector as 3M, as well as the sector and industry averages. You can also see a column chart:
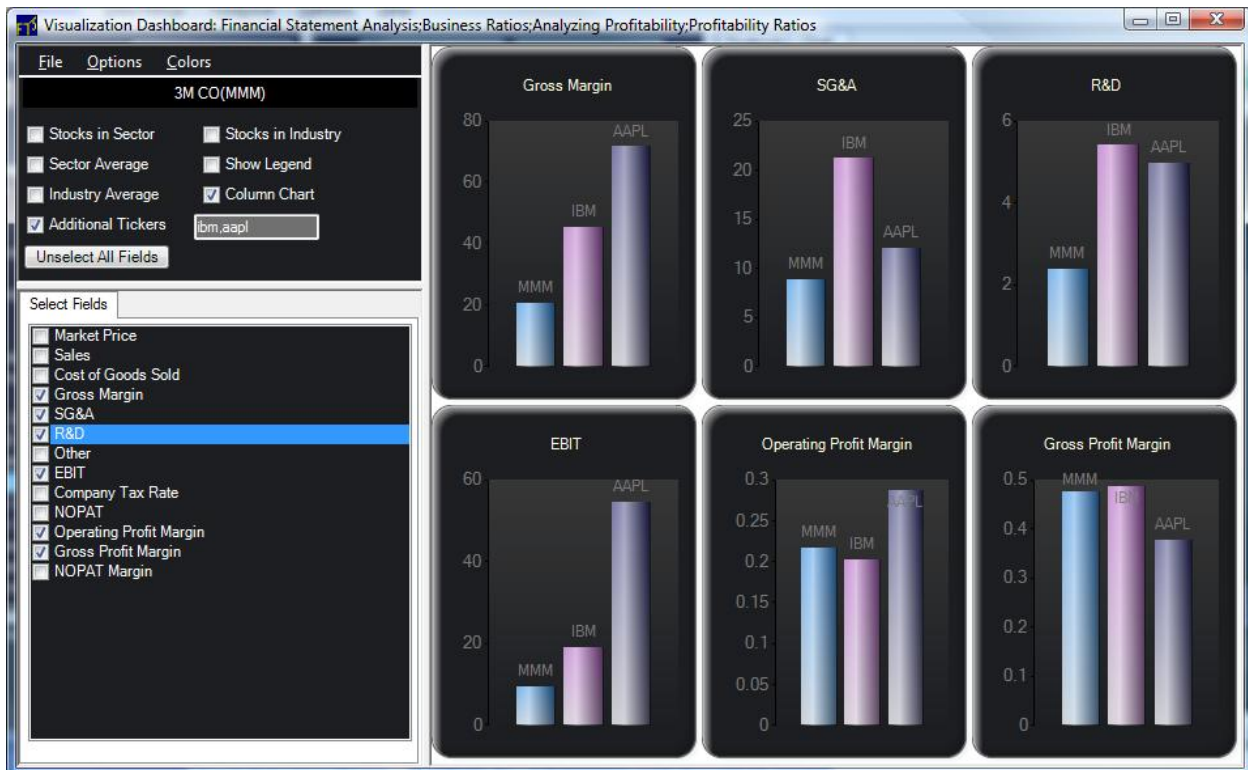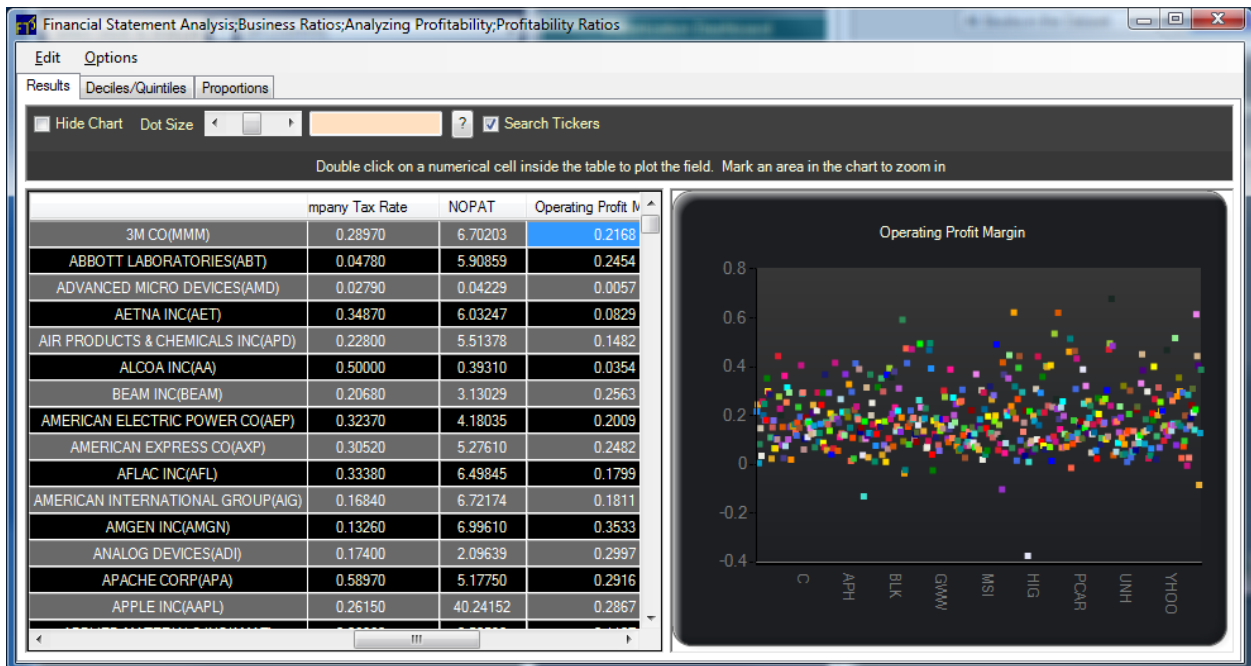
Numerical Comparisons

The Visualization Dashboard helps you quickly compare small numbers of companies. Obviously, the charts would not be as clear if you wanted to compare 300 companies!

The "Numerics" button in the main window sets you on the path to large scale comparisons. Select "All Stocks in the Dataset" and click the "Numerics" button.
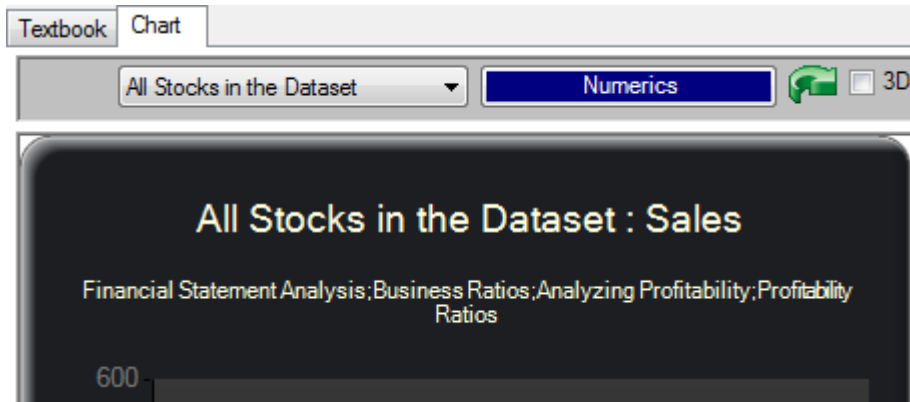

You will see:

- The numbers are in the table
- Click on a header in the table to sort along that dimension
- The scatter plot shows you what the overall picture looks like; here, we have plotted the Operating Profit Margin.

- Click on a numerical cell in the table to plot that variable.
- You can zoom in to the plot
- Hold your mouse over a point to identify the company.

The "**Deciles/Quintiles**" tab shows you the ranking of each company. For example, we calculated deciles:
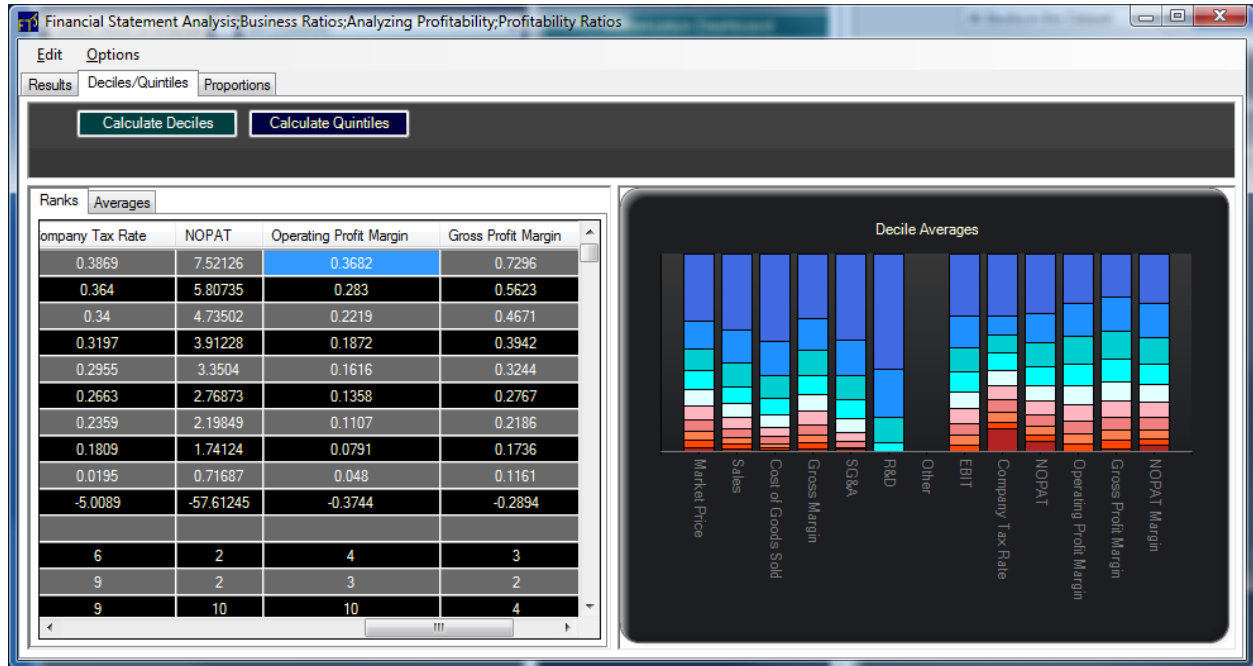
You can see that among the 500 companies in our data set, 10% have an operating profit margin of 36.82% or higher. In the table, you can spot that 3M is in the 4th decile on this dimension.

The chart shows you the decile ranges. You can see that for R&D, there is a big difference between the first and last company in the top decile (in blue).

To see which companies are in a decile, right click over the decile in the chart, and the popup menu will left you see the members of that decile (or quintile).

The numerical comparisons help you identify the top or bottom companies for any of the calculators covered in Valuation Tutor.

You can export any of the tables into Excel.

The **"Proportions"** tab shows you something very interesting. Take a variable, say Gross Margin. We can calculate the total Gross Margin of all the stocks. Then we can calculate the proportion of the Gross Margin contributed by each stock. In the following chart, you can see that in our dataset, 3M contributes about 0.35% of the total Gross Margin.

	Market Price	Sales	Cost of Goods Sold	Gross Margin	SG&A	R&D	Other	EBIT	Company Tax Rate
3M CO(MMM)	0.0037	0.0020	0.0015	0.0035	0.0031	0.0068		0.0034	0.0019
ABBOTT LABORATORIES(ABT)	0.0011	0.0012	0.0006	0.0027	0.0024	0.0084		0.0022	0.0003
ADVANCED MICRO DEVICES(AMD)	0.0001	0.0004	0.0003	0.0005	0.0004	0.0055		0.0000	0.0002
AETNA INC(AET)	0.0019	0.0051	0.0053	0.0048	0.0069	0.0000		0.0033	0.0023
AIR PRODUCTS & CHEMICALS INC(APD)	0.0032	0.0022	0.0023	0.0021	0.0018	0.0018		0.0025	0.0015
ALCOA INC(AA)	0.0003	0.0010	0.0013	0.0003	0.0003	0.0005		0.0003	0.0033
BEAM INC(BEAM)	0.0024	0.0007	0.0004	0.0015	0.0017	0.0001		0.0014	0.0014
AMERICAN ELECTRIC POWER CO(AEP)	0.0014	0.0014	0.0016	0.0010	0.0000	0.0000		0.0022	0.0022
AMERICAN EXPRESS CO(AXP)	0.0025	0.0014	0.0015	0.0013	0.0000	0.0000		0.0027	0.0020
AFLAC INC(AFL)	0.0018	0.0025	0.0028	0.0016	0.0000	0.0000		0.0035	0.0022
AMERICAN INTERNATIONAL GROUP(AIG)	0.0014	0.0021	0.0023	0.0013	0.0000	0.0000		0.0029	0.0011
AMGEN INC(AMGN)	0.0034	0.0011	0.0003	0.0031	0.0022	0.0128		0.0029	0.0009
ANALOG DEVICES(ADI)	0.0014	0.0004	0.0002	0.0009	0.0004	0.0047		0.0009	0.0012
APACHE CORP(APA)	0.0023	0.0020	0.0019	0.0023	0.0005	0.0000		0.0045	0.0039
APPLE INC(AAPL)	0.0152	0.0088	0.0075	0.0119	0.0042	0.0143		0.0194	0.0017
APPLIED MATERIALS INC(AMAT)	0.0005	0.0003	0.0002	0.0004	0.0003	0.0032		0.0002	0.0018
ARCHER-DANIELS-MIDLAND CO(ADM)	0.0011	0.0062	0.0082	0.0009	0.0008	0.0002		0.0011	0.0020
AUTODESK INC(ADSK)	0.0015	0.0005	0.0001	0.0015	0.0018	0.0077		0.0006	0.0013
AUTOMATIC DATA PROCESSING(ADP)	0.0021	0.0011	0.0009	0.0016	0.0014	0.0039		0.0015	0.0023

These proportions are used to create "fundamental indexes" and you can find more information about them at http://en.wikipedia.org/wiki/Fundamentally_based_indexes and at http://www.researchaffiliates.com/Our%20Ideas/Solutions/RAFI/RAFI%20Equity/Pages/Home.aspx