

JEL 330.43

ANALYST TASKS IN FINANCIAL MODELING

Kateryna Vadymivna Stiepanova, Ph.D.,
Simon Kuznets Kharkiv National University of Economics, Kharkiv, Ukraine

Abstract — The aim of this brief communication is to consider what a financial model is, what competence of financial analyst and data is needed to create one.

Key Terms — financial data, financial model, competence of financial analyst.

The financial industry is easy enough to break into, but carving out a viable long-term career is tough. To succeed in this industry, one must have discipline, intelligence, and possess a thick-skinned psyche. There are many different positions in the financial services industry, and it often takes years for individuals to find and settle into a position that is a good fit for them.

Let's say you're perusing the want ads and come upon an ad for an equity analyst. The pay is great; there are travel opportunities. It looks like the job for you. Glancing down the list of qualifications, you mentally check off each one:

- Bachelor's in engineering or mathematics
- Master's in economics or business administration
- Curious, creative thinker
- Can interpret financial statements
- Strong technical analytical skills
- Modeling experience required

The truth is that companies want their equity analysts to have modeling experience. What the term refers to is an important and complicated part of equity analysis known as financial modeling. In this brief communication, we'll explore what a financial model is, what competence of financial analyst and data is needed to create one.

Theoretically, a financial model is a set of assumptions about future business conditions

that drive projections of a company's revenue, earnings, cash flows and balance sheet accounts.

In practice, a financial model is a spreadsheet (usually in Microsoft's Excel software) that analysts use to forecast a company's future financial performance. Properly projecting earnings and cash flows into the future is important since the intrinsic value of a stock depends largely on the outlook for financial performance of the issuing company.

In order to predict the future, it is a good idea to start with the past. Therefore, a good first step in building a model is to fully analyze a set of historical financial data.

A financial model spreadsheet usually looks like a table of financial data organized into fiscal quarters and/or years. Each column of the table represents the balance sheet, income statement and cash flow statement of a future quarter or year. The rows of the table represent all the line items of the company's financial statements, such as revenue, expenses, share count, capital expenditures and balance sheet accounts. Like financial statements, one generally reads the model from the top to the bottom, or revenue through earnings and cash flows. For more on financial statements see [1–5].

Obviously, that one of the crucial points of financial statements is understanding how to read the balance sheet and its related notes using for example, Espresso Software, «1C». It is important to study at the company's income statement and statement of cash flows and conclude by covering the key contents of an annual report. This will help to analyst understand the financial strength of the company and as a result to help make informed decisions. So, you must be ready

- understand complex balance sheet concepts (e.g. deferred taxes, goodwill, investments, etc.)
- read and interpret the various items in a published balance sheet and income statement
- navigate successfully through the notes to the financial statements
- understand the different ways to present an income statement and cash flow statement.
- identify the operating, financing, and investing activities of a company.

It should be remembered that each quarter embeds a set of assumptions for that period, like the revenue growth rate, the gross margin assumption and the expected tax rate. These assumptions are what drive the output of the model - generally, earnings and cash flow figures that are used to value the company or help in making financing decisions for the company.

It is clear that the historical track record of gross margin can become somewhat of a basis for a future income projection. Analysts are always smart to examine and analyze historical trends in revenue growth, expenses, capital expenditures and other financial metrics before attempting to project financial results into the future. For this reason, financial model spreadsheets usually incorporate a set of historical financial data and related analytical measures from which analysts derive assumptions and projections. Revenue growth rate assumptions can be one of the most important assumptions in a financial model. Small variances in top-line growth can mean big variances in earnings per share and cash flows and therefore stock valuation. For this reason, a good starting point is to look at the historic track record of revenue. Perhaps revenue is stable from year to year. Perhaps it is sensitive to changes in national income or other economic variables over time. Perhaps growth is accelerating, or maybe the opposite is true. It is important to get a feel for what has affected revenue in the past in order to make a good assumption about the future. Acknowledging that there

are big differences between the fixed costs and variable costs incurred by a business, analysts are smart to consider both the dollar amount of costs and their proportion of revenue over time. If selling, general and administrative expense has ranged between 8% and 10% of revenue in the past ten years, then it is likely to fall into that range in the future. If business is improving rapidly, reflected by the revenue growth assumption, then perhaps the fixed cost element will be spread over a larger revenue base and the expense proportion will be smaller next year than it is right now. That means that margins are likely to increase, which could be a good sign for equity investors.

Projected net income available for common shareholders is projected revenue minus projected expenses. Projected earnings per share is this figure divided by the projected fully diluted shares outstanding figure. Analyst clearly separates these concepts as earnings and projected earnings per share projections are generally considered primary outcomes of a financial model because they are frequently used to value equities or generate target prices for a stock.

References

1. Scholz F. *Industrial Statistics* / F. Scholz. – Washington: Washington EDU, 2014. – 58 p.
2. Duran A., Caginalp G. Parameter optimization for differential equations in asset price forecasting // *Optimization Methods & Software*. 23, 2008 (4): 551–574.
3. A. Duran. *Overreaction Behavior and Optimization Techniques in Mathematical Finance*. PhD thesis, 2006, University of Pittsburgh, Pittsburgh, PA.
4. Парушина Н. В. Анализ собственного и привлечённого капитала // *Бухгалтерский учёт*. – 2002. - № 3. - с. 72 – 78.
5. Bass Richard F. *The Basics of Financial Mathematics* / Richard F. Bass. *Mathematical Finance* 2003. – 106 p.

Author

Stiepanova Kateryna Vadymivna,
Assistant of the Department of Higher
Mathematics, Economic and Mathematical
Methods, KhNUE, Kharkov, Ukraine
(stepanova.katerina@hneu.net).

Manuscript received 14 January 2020.
Published as submitted by the author.