
An Overview of Financial Statement Analysis: The Mechanics

Introduction

On September 20, 2000, Jonathan Weill, a *Wall Street Journal* reporter in Dallas, Texas, published a piece questioning the profitability and accounting of Enron Corporation. He based his article on a study of Enron's financial statements and conversations with staff at the Financial Accounting Standards' Board (FASB), accounting professors, financial analysts, and others. "It took me a while to figure out everything I needed to. It probably took a good month or so. There was a lot of noise in the financial statements."¹ His piece was read by James Chanos, founder and president of Kynikos Associates, a firm that specialized in short-selling. Chanos recalled his reaction:

I read the 10-K and the 10-Q that first weekend...I went through it pretty quickly. I flagged right away the stuff that was questionable. I circled it. That was the first run-through. Then I flagged the pages and read the stuff I didn't understand, and reread it two or three times. I remember I spent a couple of hours on it.²

Both Weill and Chanos analyzed Enron's financial statements and noted the cash flow problems and that the rate of return was less than the cost of capital. Enron was going broke. Chanos began selling short in November 2000, and he told others including a reporter from *Fortune*, who wrote a March 2001 piece in that magazine. Then things started to happen. Enron CEO Jeff Skilling resigned in August, and by December 2001, the company was in bankruptcy.

So how did Weill and Chanos figure Enron out when so many others were pushing up the stock price? How did they know to do that kind of analysis? Only the answer is simple: through study, application, and more application. You cannot develop financial analysis expertise overnight. Our objective in this document, however, is to present a very basic structure for financial analysis that will help move you toward that goal. We focus on what to look for in the financial statements, how to do basic ratio analysis, what financial forecasting entails, and how analysts use financial statement data in valuation. We intentionally focus on the mechanistic nature of financial analysis because these tools are fundamental building blocks common to the analysis of most firms. Without understanding this basic structure the unique issues facing a firm would be difficult to interpret.

There can be no two exact prescriptions for how an analysis of a company will unfold because no two companies are alike. We can, offer, however, a general approach to analysis that will help answer the most fundamental of questions about a firm. To accomplish this we perform an illustrative analysis of Home

¹ Malcolm Gladwell, "Open Secrets," *The New Yorker* (January 8, 2007).

² "Open Secrets."

Depot, Inc., one of the most successful retail operations in the world. Consider that no matter what your ultimate objectives may be to understanding a company, your objective would be satisfied if you understood where that company has been, where it is headed, and what it is worth. This document is organized around these central themes: (i) historical ratio analysis, (ii) pro-forma forecasting, and (iii) valuation. In a perfect world, our analysis task would be complete here. However, there are a number of other factors to consider that might greatly affect the conclusions reached through these three generalized steps. These include—but are not limited to—understanding firm-specific risks and trends; understanding risks related to macroeconomic factors; identifying accounting measurement issues; and assessing corporate governance, management skill, and expertise. The final section of this document further summarizes these points.

Historical Financial Statement Analysis: Financial Ratios

Financial analysts and academic researchers have created an array of ratios found to be particularly useful in understanding the financial performance and condition of companies. This collection of ratios includes methods for analyzing operating performance, financial condition, cash flow, liquidity and solvency, and capital structure and risk. Although there is no fixed set of such metrics and individual analysts typically rely upon their own personal set of assessment tools, there is a core set used by most of the financial community.

Below we describe some of these ratios and illustrate how information can be extracted from this type of historical analysis. As we look at these metrics, remember that each is just one piece of the mosaic we are trying to build. A simple piece of data or metric, by itself, does not tell us much. At the end of 2006, Home Depot had \$614 million in cash and \$5.76 billion in net income. So what? These numbers seem large, but how large are they? Only when we see the whole picture will we be able to tell. As we go through these metrics, we will be looking for patterns, changes, big items, missing items, items related to other items, and items that seem to defy explanation.

Percentage change and common-size statements

The first recommended step in ratio analysis requires studying the components of a company's balance sheets, income statements, and statements of cash flow in historical perspective. Two complementary techniques are recommended: (1) analyzing the proportion of an account relative to other accounts, and (2) analyzing the growth in an account across periods. Common-size statements and percentage change statements, respectively, are the labels given to those tools. View them for what they are—recasting dollar amounts contained in the original financial statements to an easier-to-interpret, more enlightened, and more comparable set of financial ratios. All accounts are either a proportion or a growth variable. Both of these perspectives together help highlight key financial activity, particularly the often subtle, but important, shifts in asset, liability, or cost mix.

Let's start with the income statements and their changes over time. **Figure 1** illustrates the percentage change statement for Home Depot for the years 2003–06.³ The change in revenue or “top-line growth” is a good starting point. Home Depot net revenue grew 11.4% from 2005 to 2006, but not as fast as 2004 when net revenues grew 12.8%.⁴ Whether an 11.4% growth rate is good or bad depends upon many things but, in general, it is often easier for a small company to grow than it is for a big one. Home Depot, with \$91 billion of net revenue, is a large company, and a growth rate three times that of gross domestic product (GDP)

³ Home Depot is a retailer, and like most retailers, it runs on a weekly accounting cycle. For Home Depot, its fiscal years close on the Sunday nearest to the last day of January.

⁴ Net revenue is total sales or revenue less estimated sales discounts, returns, and other allowances.

growth is admirable. The fact that the growth rate in 2006 was less than that of 2004 could be cause for some concern. Analysts are always looking for signs that growth in a large, successful company might be slowing. When studying financial results like this, it is not just the parameter, 11.4% net revenue growth in this case, but any significant change in that parameter, such as from 12.8% to 11.5% to 11.4%. Perhaps it was 2004 that was unusual. We will say more about this later.

Figure 1. Percentage change income statements.

	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>
Net revenues	11.4	11.5	12.8	11.3
Cost of sales	12.7	11.4	10.0	10.2
Gross margin	9.0	11.8	18.7	13.7
Selling, general, & administrative	11.3	8.1	20.0	11.8
Depreciation and amortization	19.7	17.9	22.2	13.1
Operating income	3.3	18.1	15.8	17.4
Interest and investment income	(56.5)	10.7	(5.1)	(25.3)
Interest expense	174.1	104.3	12.9	67.6
Earnings before taxes	0.3	17.3	15.6	16.5
Income taxes	3.0	18.3	14.7	15.0
Net income	(1.3)	16.7	16.2	17.5
Diluted earnings per share	2.6	20.4	20.2	20.5

In 2006, Home Depot's 11.4% revenue growth resulted in a slight decline in net income—the bottom line—and a 2.6% increase in earnings per share (EPS), in sharp contrast to the previous year where an 11.5% increase in revenue produced a 16.7% increase in net income and a 20.4% increase in EPS. How did this happen? Now our analysis switches from revenue growth to profitability.

Look carefully at both the percentage change statement and the common-size statement in **Figure 2**. The common-size statement in the vertical format expresses each significant line in the income statement in terms of percentage of sales.⁵ So on the question of how they did it, we begin by noting that the 2006 cost of sales percentage increased leading to a smaller gross margin percentage. Depreciation and amortization increased, but from a small base. There was not much effect due to taxes; the decrease in income taxes as a percentage of net revenue was due to the decrease in earnings before taxes. So the big story at Home Depot for 2006 was that it turned 11.4% revenue growth into a slight decline in net income because margins declined. Looking at all five years of data, we see strong growth in sales and steady improvement in gross margins, operating profits, and net income until 2006. As an interesting side note, although you cannot tell by looking at **Figure 1**, the reason a 1.3% decline in net income translates into a 2.6% increase in EPS is the company bought back some of its own common stock, thereby reducing the number of shares outstanding and increasing EPS.

⁵ Common-size statements and percentage change statements usually only include the most important line items on the income statement. In this case, Home Depot interest and investment income and interest expense have been ignored, because the amounts are small. Although not shown in this note, we can also arrange a common-size statement in a horizontal format. This format begins with the oldest data (2002 in this case) and then shows the percentage changes in each line item from that base year. The percentage change statement and the vertical and horizontal format statements show three different perspectives on this same set of results.