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Investment Principles

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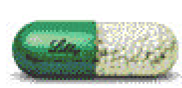
Relative Valuation (Enterprise Value and Equity Value Multiples)

Objective: The objective of this assignment is to apply the concept of total enterprise value (TEV) and also equity market value (EMV) multiples to a real world company. This assignment should be done after you have finished reading Chapter 14 through Chapter 16 in Damodaran, *Investment Valuation*.

Company: Eli Lilly's (Ticker: LLY, http://www.lilly.com) primary focus is on one significant business segment, called Pharmaceutical Products. While its primary research efforts are directed toward the search for products to diagnose, prevent and treat human diseases, the company also conducts research to find products to treat diseases in animals, and to increase the efficiency of animal food production. Eli Lilly is best known as the maker of Prozac, the world's best-selling antidepressant which will soon lose its US patent protection. To makeup for the revenues from Prozac, Lilly is looking to its drug pipeline, which includes over 40 potential products. The company also makes Gemzar (for pancreatic cancer), Humalog (injectable insulin), ReoPro (an anti-clotting compound used in angioplasties), Evista (for osteoporosis), and Zyprexa (schizophrenia treatment also approved to treat bipolar disorder). Other products include antibiotics, growth hormones, anti-ulcer agents, and cardiovascular therapy medications, as well as animal health products.

Competitors: Abbot Labs (ABT), American Home Products (AHP), Bristol-Myers Squibb (BMY), Johnson & Johnson (JNJ), Merck (MRK), Pfizer (PFE), Pharmacia (PHA), and Schering-Plough (SGP). For purposes of this analysis, we have excluded other major drug companies such as Novartis (NVS) due to lack of information on their financial statements.

Assignment: Download the file, EliLilly.xls from my website and do all your work on this spreadsheet. This is an *individual* assignment. Although you can discuss this case with your classmates, you are responsible for doing the case yourself. Students caught cheating will be able to experience depression first-hand since they'll be given an F on this assignment. In doing this assignment, please use the assumptions given on the next page. The assignment/questions can be found after the assumptions.



Assumptions to Use in Calculations:

Item	Assumption
Total Enterprise Value (TEV)	Market Cap (Total Equity Market Value) + Total Debt = Price per Share * Number of Shares Outstanding + Total Debt
Total Common Shares Outstanding	Use the **Total Common Shares Outstanding** in the Quarterly Balance Sheet in calculating the Market Cap
Cost of Goods Sold	Cost of Goods Sold *includes* Depreciation and Amortization. Depending on the nature of the calculation, you may have to subtract out Depreciation and amortization
Earnings Before Interest and Taxes (EBIT)	EBIT = Revenues – COGS - SGA - R&D. Note that COGS includes Depreciation and Amortization. While there are other “expenses” in the income statement, a closer at these expenses reveal that they are either non-operating income or expenses dealing with unusual circumstances such as a merger. As such these expenses are excluded since we focus on recurring expenses arising from operations.
EBITDA	EBIT + Depreciation and Amortization.
Amortization	If amortization is only available for 12 months, divide by 4 and use this number for each preceding quarter. For example, in the case of American Home Products, amortization of $198.8 million is given for 12 Months ending 12/31/2000. For the preceding months, no figure is given. Thus, we assume that the amortization is $198.8/4 quarters = 49.7 per quarter e.g. 3/31/00 = 49.7, 6/30/00 = 49.7, 9/30/00 = 49.7, 12/31/00 = 49.7
Book Value of Equity	Total Assets – Goodwill – Intangible Assets – Total Liabilities – Preferred Stock
Price to Earnings Per Share to Growth (PEG)	Use 2001 EPS and the expected long-term growth rate in EPS given in the spreadsheet.

If the calculated multiple(s) is a negative number, put NMF (no meaningful figure) in the appropriate cell of your spreadsheet. If either the earnings estimate or revenue estimate is not available for a particular firm, put NA (not available) in the appropriate cell of your spreadsheet. ***Warning***: The financial statements are quarterly. Make the necessary adjustments to these quarterly numbers to obtain the trailing twelve-month (TTM) figures. Income statement numbers are “flow” numbers while balance sheet items are “stock” numbers. Also, be very careful about the time periods in question. While most financial statements on a quarterly basis are for 3 months, some companies report every 6 months. In addition to this, the "quarterly" cash flow statements are cumulative.

As such, some figures need to be backed out to obtain the number for the quarter. This is especially the case with Depreciation and also Amortization numbers used in the calculation of EBITDA. You can calculate the quarterly depreciation and quarterly amortization (if any) at the bottom of each drug company financial statement worksheet.

Assignment:

1. Using the Valuation Template provided in the EliLilly.xls file, complete the template by filling in each cell that is highlighted in yellow by linking the worksheets containing the various financial statements in the EliLilly workbook to the valuation template worksheet. What is the justified average ***equity*** value for your stock – mean price per share and median price per share - based on the various multiples (please highlight in yellow on the spreadsheet)?

2. What multiple(s) appear to be the most reliable? Why?

3. Do you agree or disagree with the analyst recommendations for Eli Lilly? Why or why not? Please discuss.

Date	Firm	Action	Details
18-June-01	Merrill Lynch	downgrade:	from NT Buy to **NT Accum**
13-June-01	ABN AMRO	initiated:	at **Hold**
23-May-01	Prudential	initiated:	at **Hold**
4-Jan-01	Bear Stearns	downgrade:	from Attractive to **Neutral**

Source: http://biz.yahoo.com

4. Are the comparables that we use truly "comparable"? Please explain. If you had to exclude one comparable, firm would you exclude? Why (on what basis would you exclude the comparable)?

5. Redo your calculations (make a copy of your answers in another worksheet using Edit → Move or Copy Sheet … → highlight the sheet you wish to make a copy of → click the box labeled "Create a copy" → click OK) excluding the one firm that is not truly comparable. Label this worksheet Valuation wo ___ where ___ is the ticker symbol of the excluded firm. Why has the mean and median justified price per share changed (don't simply say because we excluded one firm)? Has your recommendation changed?

Please turn in a hard copy of the spreadsheet together with your disk containing the spreadsheet with all the appropriate calculations.