Professor Crocker H. Liu Revised: June 4, 2003

Built Up Betas and the Cost of Equity

Objective: The objective of this assignment is to introduce students to how to calculate beta using comparable companies. Not only is this approach the correct one to use in general but is especially appropriate when a firm is either a private company or a publicly traded company that has been trading only a short time or only infrequently. A secondary goal is to show the impact that leverage (the use of debt) has on risk (beta).

Company: Staples

After being fired from his executive position with Connecticut supermarket Edwards-Finast in 1985, Thomas Stemberg (the man who developed the idea for generic food) started his search for a niche retail market. Applying the supermarket model to office supply, Stemberg founded Staples in late 1985 with Leo Kahn, a former competitor in the supermarket business. Today, Staples is clipping along as the #1 office supply superstore company in the US. Although most of its 1,500 Staples and Staples Express stores are either located in the US and Canada, it also has stores in Germany, the UK, the Netherlands, and Portugal. Averaging about 22,000 sq. ft., Staples superstores offer about 8,500 office products (business machines and equipment, computers, office furniture, and supplies) and services (printing, photocopying).

Staples superstores generate most of the company's sales and profits. The company also operates Staples Business Delivery (a combination of its Staples Direct small business catalog and Staples.com), Quill Corporation (catalogs and related Web sites), and a contract stationery business.

Staples growth strategy includes opening superstores in city suburbs, with smaller Staples Express stores (6,000-10,000 sq. ft.) located in urban locations, and even smaller airport locations (1,500 sq. ft.). Acquisitions are also part of their growth strategy with targets consisting primarily of companies that either complement its European operations or that boost its customer base with new services.

Competitors (Publicly Traded)[1]: Buhrmann (BUH), Office Max (OMX), Office Depot (ODP), United Stationers (USTR).

[1]We excluded Buhrmann (BUH) from our analysis since it just started trading.

Assumptions:

Item	Assumption
Marginal tax rate	32.6% for Staples
Debt	Use most recent debt outstanding for each firm
Equity	Use market value of equity for each firm
Risk premium (R_M - r_F)	5.5%
NA	Set NA = 0 in the Financial Statements (Disclosure spreadsheet)

Assignment: Download the SPLS data from my website and use the downloaded spreadsheet to answer the following questions (all work should be done on this spreadsheet). Please highlight your answers in yellow in the worksheet templates provided:

1. Firm Betas (5 points): Calculate the betas for the comparable firms using either the Regression option under Data Analysis in the Excel menu or the slope command.

2. Total Debt (10 points): Calculate the total amount of balance sheet debt using the appropriate 10Q spreadsheet for each firm. In calculating the debt for each comparable company, use the *most recent* figure given in the spreadsheet for each firm. Assume that the book value of debt equals the market value of debt.

3. Market Value of Equity also known as Market Cap (5 points): Calculate the total market value of equity using the appropriate 10Q spreadsheet for each firm.

4. Estimate the Beta for SPLS using other Office Comparables (25 points): Calculate the levered beta for Staples using Office Depot, Office Max, and United Stationers as comparables.

5. Estimate the Beta for SPLS using Specialty Retail (25 points): Since Staples is considered as part of the Specialty Retail industry, calculate the levered beta for Staples using Office Depot, Office Max, United Stationers, Home Depot, ToysRUs, Barnes & Noble, Bed Bath & Beyond, Borders, Sports Authority, Linen & Things, Michaels Stores, and Williams Sonoma as comparables. Discuss whether the estimate of beta for Staples using the Specialty Retail industry is similar to that obtained using only other Office Stores as comparables.

6. <u>Estimate the Cost of Equity for Staples</u> (10 points): Calculate the cost of equity for SPLS using other Office Stores as comparables and alternatively using the firms in the Specialty Retail sector. The cost of equity is the discount rate that shareholders use to discount back the cashflows they receive (dividends, stock buybacks, etc.). Use the 10 year Treasury bond for the riskfree rate.

7. <u>Present Value of Operating Leases for Staples</u> (10 points): Calculate the present value of operating leases for Staples using the information provided in the "SPLS Operating Lease" worksheet. In calculating the number of years remaining on the operating lease, please round to the nearest integer. For example, if the number of years remaining on the lease (Rents Thereafter ÷ Average Rent per Year) is 4.3 then you would round to 4 years and if the number of years remaining was 4.7 then you would round to 5 years. The last year of the lease contains the difference between the Thereafter rents and the sum of the average rent per year.

Example: Office Depot (ODP), a competitor of Staples, has the following operating leases

In Thousands (000s)	**ODP**
Bond Rating	BBB-
Default Spread	0.0172
Pre-tax Cost of Debt	0.0514
Year	
2003	390,771
2004	353,042
2005	308,916
2006	272,697
2007	251,148
2008	
Thereafter	1,118,332
Cumulative Rents (Thereafter)	1,118,332
<u>Avg Rent Per Year</u>	<u>315,315</u>
#Years (Annuity)	4

Pre-tax Cost of Debt	0.0514
Year	ODP
2003	390,771
2004	353,042
2005	308,916
2006	272,697
2007	251,148
2008	315,315
2009	315,315
2010	315,315
2011	172,388
PV of Op. Leases	2,151,833

Since there are 4 years remaining on the operating leases, and the average rent per year is $315,315 it follows that the rent per year is $315,351 and the rent in the last year is $172,388 (this is obtained from $1,118,332 - 315,315 - 315,315 - 315,315).

8. Revised Levered Beta and Cost of Equity for Staples (10 points): Given your answer in question 7, recalculate the levered beta for Staples using the Office Comparables and alternatively using the comparables from the Specialty Retailing industry. Next, calculate the "new" cost of equity for Staples using the "revised" levered beta from the Office Comparables and alternatively using the comparables from the Specialty Retailing industry. Does it matter whether we include off-balance sheet debt in calculating the cost of equity for Staples? Please explain what impact it has on equity valuation.

Please turn in a hard copy of your solutions together with your disk, which shows all work on your spreadsheet. Since this is an individual effort, any student caught cheating will be given an F on this assignment.