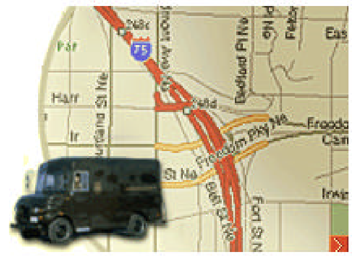
Professor Crocker H. Liu Rev. August 3, 2002
Financial Management

Percentage of Sales Forecasting Method

Objective: The objective of this assignment is to forecast the income statement and balance sheet and future financing requirements using an Excel spreadsheet. The percentage of sales method, which relates various (but not all) financial statement line items as a percentage of net sales, is the technique used.



Company: United Parcel Service (UPS) is the world's #1 package-delivery company with deliveries in more than 200 countries and territories. The firm delivers approximately 14 million packages per day. Not only is UPS the leading ground-delivery firm but it is gaining on its rival FedEx in air delivery. The company is expanding its role in managing supply chain operations and logistics for corporations through its UPS Logistics and UPS Consulting division. In addition to this, UPS has built a freight-forwarding business through acquisitions and launched e-Ventures to develop operations supporting e-commerce. The focus of the company is thus on the movement of goods, information and funds. Managers, employees, retirees, and the founders' families own 90% of UPS.

The growth strategy of UPS is designed to take advantage of their competitive strengths. The principal components of their growth strategy involve: 1) Building on their leadership position in their core domestic business, 2) Continued international expansion, 3) Providing comprehensive supply chain and financial solutions, 4) Leveraging their leading-edge technology and E-commerce advantage, and 5) Pursue strategic acquisitions and global alliances. (*Note to students: UPS is continually redefining what it is that they move*). In terms of growth, the international package delivery market has grown, and continues to grow, at a faster rate than the U.S. market. Europe, which includes operations in Africa and the Middle East, remains their largest regional market outside of the U.S. UPS believes that there is significant untapped potential for them to expand their service offerings in Latin America. During 2001, UPS completed 12 acquisitions, which were concentrated primarily in the non-package segment and the customs brokerage industry.

Significant Developments:

- July 23, 2002: Reached a new labor contract two weeks prior to the expiration of the existing pact. The new contract calls for wages and benefits to increase an average of 4% annually. The labor negotiations caused some volume diversion from customers. The company anticipates half of the volume diversion to quickly return.

- October 2001: UPS introduces a new subsidiary, UPS Consulting, which will offer clients supply chain management strategies that go beyond fulfillment and distribution.

- August 2001: Acquires First International Bancorp, Inc. a provider of structured trade finance, commercial and government-backed lending products, in a transaction in which they issued 1.1 million shares of class B common stock valued at approximately $54 million.

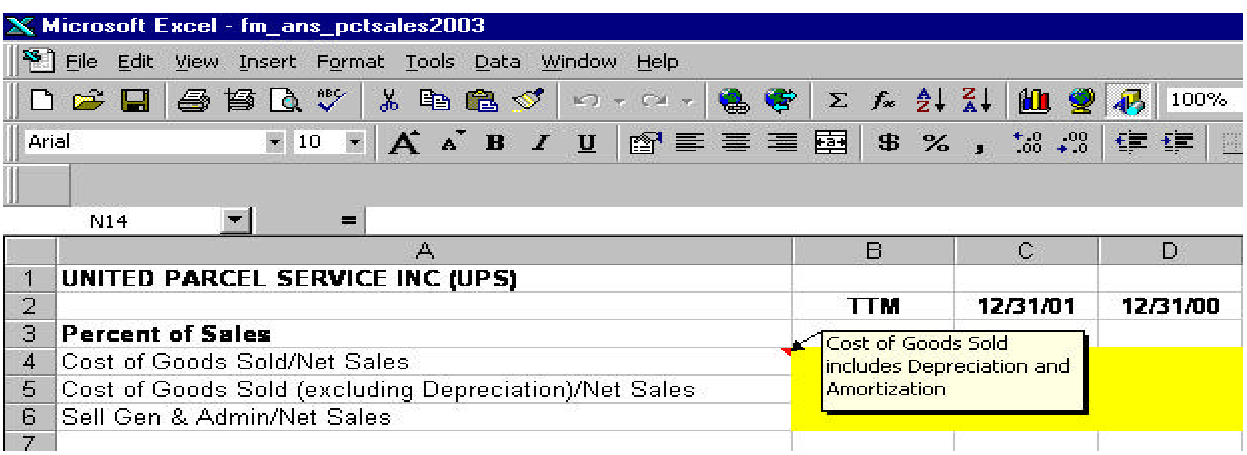
- May 2001: Acquires Fritz Companies, Inc., a global freight forwarding, customs brokerage and logistics company in a transaction in which they issued 7.3 million shares of class B common stock valued at approximately $456 million.

- April 2001: Acquires substantially all of the assets of Mail Boxes Etc., the world's largest franchisor of independently owned and operated business, communication and shipping centers, for approximately $185 million in cash.

Competitors: Airborne (ABF), DHL (Subsidiary of Deutsche Post), Federal Express (FDX), TNT Post Group (TP), US Postal Service (Government owned)

Assignment: Download the spreadsheet for UPS and use the data in the workbook together with the assumptions at the end of this mini-case to answer the following questions.

1. Using the margin analysis worksheet labeled "PCT of Sales Template" in your downloaded workbook, calculate the appropriate ratios for the years given including TTM. TTM stands for trailing twelve months. The ratios should be calculated using the information from Disclosure contained in the "UPS 10Q" and "UPS 10K" worksheets. Comment on whether the percentage of sales ratios for the TTM are "representative" in general e.g., are they more or less in line with the ratios for each line item over the past 3-5 years? Be sure to read any comments (the orange corner) in doing your calculation. To read a comment, simply move the cursor next to the orange corner/tab and a comment box will appear. Following is an example:



Should you as the analyst rely primarily on the TTM and 2001 numbers or also take into consideration the percent of sales numbers prior to 2001? Please discuss.

2. Using the template labeled the "Partitioning Revenue Template" worksheet, calculate the various drivers of revenue by completing the sections of the spreadsheet highlighted in yellow. Based on your calculations in the highlighted sections, where does the overwhelming majority of UPS's sales comes from (U.S. Domestic Package, International Package, or Non-package)? Is revenue from this component as a portion of net sales increasing, decreasing or remaining relative stable over time? If you do a further decomposition of each of the 3 revenue drivers, what revenue line item accounts for the largest portion of UPS's net sales? What revenue line item accounts the the second largest portion of UPS's net sales? Have these revenue sources (as a percentage of net sales) been increasing, decreasing, or remaining relatively stable over time? Which drivers of revenue (as a percentage of net sales) have been increasing over time? Does the trend in the sources of revenue reflect what UPS has been saying about how the company intends to grow in the future? Is it consistent with UPS's current acquisition strategy?

3. In the 2002 annual report of UPS, the company claims that the "Our fourth quarter 2000 results reflected a decline in our previously reported growth rates for both revenue and average daily volume. These declines were caused by an overall weakening of the economy."

a. Using the data provided in the "Sales and GDP" worksheet where Gross Domestic Product (GDP) is our proxy for the economy, graph the relationship between quarterly sales and quarterly GDP using a **Lines of Two Axes** graph (located under Custom Types). Also, graph the relationship between annual sales and GDP using another **Lines of Two Axes** graph. Based on your graphs, to what extent does the health of the U.S. economy impact on UPS sales?

b. Next, regress quarterly UPS sales (the dependent variable) against quarterly GDP, and dummies for the 2nd Quarter, 3rd Quarter, and 4th Quarter (independent variables). To what extent are movements in UPS sales accounted for by fluctuations in U.S. GDP and seasonal factors? Are UPS quarterly sales to some extent seasonal in nature?

c. Regress annual UPS sales (the dependent variable) against GDP (the independent variable). Based on your regression estimates, what is the forecasted annual growth in UPS sales for the year 2002 if the government estimates that GDP is expected to grow at an annual rate of 3.5% in 2002?[1]

[1] Treasury Secretary Paul O'Neil, Press Release, Office of Public Affairs, July 31, 2002 (http://www.treas.gov/press/releases/po3304.htm)

4. Using the worksheet labeled " Forecast FinStmt Template", please complete the following

a. Fill in the numbers for the assumptions box and also the income and balance sheet for 12/31/2001. The area to be filled in is highlighted in yellow. In using this template, you will need to aggregate/add several line items together in the balance sheet or income statement. Next, forecast the income statement and balance sheet for 12/31/2002 and 12/31/2003 using the assumptions given on the last pages of this handout in conjunction with the numbers for 12/31/2001.

b. After you have finished forecasting net income, calculate the basic and diluted earnings per share (EPS) for UPS. Assume that the basic number of shares remains constant over time at 1,126,000 (in thousands of shares). This is the number of basic shares outstanding as of 12/31/2001. Also assume that the Diluted EPS/Basic EPS ratio remains constant at .98422 over 2001 to 2003.

c. Given your forecasted 2002 and 2003 basic/primary EPS, use the Data Table command in Excel to perform EPS sensitivity analysis based on changes in the growth rate in sales. Please round your answer to two decimal places e.g., $1.03. (Warning: If you are still in the Manual Calculation mode in Excel, you will need to use the F9 key in updating your calculations). How close did your estimated 2002 basic EPS for UPS come to the consensus EPS estimate? What would be the estimated 2002 EPS for UPS based on your answer for estimated sales growth in question #3c?

Please hand in a hardcopy of your answers together with a disk containing all of your calculations. This is an individual assignment. Anyone caught cheating will be given an automatic F on this project.

Assumptions Used in Forecasting Financial Statements:

Line Item	Assumption
TTM (LTM)	Trailing twelve months (last 12 months)
Sales	Sales are expected to grow at 4% per annum
Cost of Goods Sold (COGs)	Use the TTM COGS/Net Sales ratio from the "PCT of Sales" worksheet for your forecast (question #1). The Cost of Good Sold *excludes* depreciation and amortization.
Selling, General & Admin (SGA)	Use the TTM SGA/Net Sales ratio from the "PCT of Sales" worksheet for your forecast (question #1).
Depreciation and Amortization	Use the TTM Depreciation & Amortization/Net Sales ratio from the "PCT of Sales" worksheet.
Interest Expense on existing debt	Interest Expense is actual interest expense, not *net* interest expense (interest expense – interest income). Use the TTM Interest Expense/Total Debt ratio from the "PCT of Sales" worksheet. Total debt = Notes Payable + Current LT Debt + Current Portion of Capital Leases + Mortgages + Convertible Debt + LT Debt + LT Capital Leases. If a cell has an "NA", assume that NA = 0.
Interest Expense on new debt	UPS's debt rating is AAA. Assuming that UPS prefers a 10-year maturity, the default spread over a 10-year Treasury bond, as of 8/2/2002 was 71 basis points or .71%. The current yield on a 10-year Treasury Bond is 4.55%. Hence, the interest rate is 5.26% (4.55% + .71%).
Interest Income	Use the TTM Interest Income/(Cash + Marketable Securities) ratio from the "PCT of Sales" worksheet. Assume that Non-operating income over the period from 6/30/01 to 3/31/02 is equal to interest income. This isn't necessarily the case i.e., it could represent income obtained from a secondary offering. Assume that the interest rate on cash and marketable securities is 1.6%.

Line Item	Assumption
Marginal tax rate	38%. We arrive at this by looking at the ratio of Tax Expense/Income before Taxes from the "PCT of Sales" worksheet for TTM and 12/31/01.
Debt Maturing in the Future	Debt maturing in fiscal year 2002 is equal to short term debt in 2001 (as of 12/31/2001) (by definition). Assume that the amount of debt maturing in 2003 is equal to the amount of debt maturing in 2002.
Total Debt/(Total Debt + Shareholder Equity)	Assume that the firm continues to maintain a 33% debt to total capitalization ratio (we assume that this is their target capital structure) in the near term[2]. This means that the debt to total capital ratio in 2002 and also 2003 is equal to 33%.
Cash and marketable securities	Is the "**Plug**" e.g. the balance sheet item that "closes" the model. In other words, it makes Assets = Liabilities + Equity. To obtain the amount of cash and equivalents (the plug), since Total Assets = Total Liabilities + Equity, it follows that Cash & Marketable Securities = Total Liabilities + Equity - Current Assets (excluding cash & marketable securities) - Net Property, Plant & Equipment - Intangibles – Other Long Term Assets.
Current Assets (excluding cash and marketable securities)	Use the TTM Current Assets excluding cash & marketable securities/Net Sales ratio from the "PCT of Sales" worksheet.
Net Property, Plant & Equipment	Use the TTM Net PP&E/Net Sales ratio from the "PCT of Sales" worksheet.[3]
Intangibles	Note that we are using the most recent figure ("freshest" numbers) available to us as of this writing. If a cell has an "NA", assume that NA = 0.
Other Long Term Assets	Remains constant at the 3/31/2002 level (see UPS 10Q) in forecast period. Includes Investments & Advances to Subsidiaries, Other Non-Current Assets, Deferred Charges (that are Assets), as well as Deposits & Other Assets.

[2] Debt = .33*(Debt + Equity) = .33*Debt + .33*Equity ⇒ Debt - .33*Debt = .33*Equity ⇒ .67*Debt = .33*Equity ⇒ Debt = (.33/.67)*Equity

[3] In actual practice, there may be a lag between Net PP&E and Sales depending on the nature of the industry. One way to detect this is by looking at the ratio of contemporaneous and lagged Net PP&E in relation to Sales ratio.

Line Item	Assumption
Current Liabilities (excluding ST Debt)	Use the TTM Total Current Liabilities (excluding ST Debt)/Net Sales ratio from the “PCT of Sales” worksheet. Short term (ST) debt = Notes Payable + Current LT Debt + Current Portion of Capital Leases
Other Long Term Liabilities	Remains constant at the 3/31/2002 level (see UPS 10Q). Includes Deferred Charges (in Liabilities section), Other LT Liabilities, and Minority Interest (if any).
Dividends	Use the TTM Dividend/Net Income ratio from the “PCT of Sales” worksheet. This ratio is also known as the Payout ratio = dividends/net income. What isn't paid out as dividends is added to retained earnings.

Note: If there is a NA in a particular cell of your data spreadsheet, set it equal to zero e.g., NA = 0.