

Calculating Free Cash Flow to the Firm (FCFF)

Objective: The objective of this assignment is to apply the concept of Total Cash Flow that you learned in Chapter 10: Making Capital Investment Decisions (RWJ) to a real world company.

Company: Best Buy (Ticker: BBY, <http://www.bestbuy.com/>). Best Buy believes it has the *best* deal. Best Buy is a specialty retailer of consumer electronics, home-office products, entertainment software, appliances and related services. More than a third of the company's US sales come from consumer electronics, followed closely by home office products. The Company operates retail stores and commercial Websites under the brand names Best Buy (BestBuy.com and BestBuyCanada.ca), Future Shop¹ (FutureShop.ca), Magnolia Audio Video² (MagnoliaAV.com) and Geek Squad³ (GeekSquad.com), as well as an outlet store on eBay.



Schulze has been restructuring the chain and has sold the firm's unprofitable Musicland stores in 2003. Best Buy plans to continue expanding its Best Buy superstores domestically and internationally. Currently, the firm is testing a new retail strategy, Customer Centricity, that targets its most profitable customer segments (including affluent professionals, busy suburban moms, and small business customers). As part of the strategy, Best Buy is reducing the number of promotions and sales it offers customers, as well as changing return policies and adding a 15% restocking fee on returned items. Satisfied with the test market results in early 2004, company officials plan to incorporate the strategy in more Best Buy stores by the end of the year. Best Buy is also testing a new retail concept called eq-life (a combination of the words equilibrium and lifestyle) in Saint Paul, Minnesota. The first eq-life store, slated to open in early 2005, will incorporate healthy living items such as nutritional supplements, exercise equipment, and personal care products in addition to technology products. The store will also include a salon and pharmacy.

Primary Competitors: Circuit City (CC), CompUSA (Private), Staples (SPLS), Radio Shack (RSH)

¹Best Buy acquired Future Shop, Canada's leading consumer electronics retailer, in 2002 acquisition. There are more than 100 Future Shop stores operating in all of the Canadian provinces.

²Magnolia Audio Video (formerly Magnolia Hi-Fi) sells high-end audio and video equipment through 20 west coast stores (California, Oregon, and Washington).

³Acquired in the third quarter of fiscal 2003, Geek Squad provides residential and commercial computer support services. Geek Squad currently operates in seven US markets and provides in-store technicians in about 20 Best Buy stores. Best Buy plans to have technicians available in most of its stores by 2007.

Assignment: Download the BBY data from my website and use the downloaded spreadsheet (BBY2004) to answer the following questions (all work should be done on this spreadsheet). Please review the assumptions located on the last page of this case before you answer the following questions. Assume that your analysis is of December 16, 2004:

1. Imputed Interest on Operating Leases (30 points): Calculate the imputed interest on operating leases for BBY's for the trailing twelve months (TTM) ending August 28, 2004. In addition to this, go to the yahoo website (<http://finance.yahoo.com>), type in the ticker for Best Buy (Ticker: BBY) and then once the page loads, click on **SEC Filings** which is located in the left hand column. Next access the **Full Filing at EDGAR Online** for BBY's 10K dated February 28, 2004 and **print out** the page in the 10K that has the information on operating leases.. the actual per year amount⁴. Alternatively, you can use edgarscan (<http://edgarscan.pwcglobal.com/recruit/edu.html>) to access the 10K for BBY.



Assume for purposes of this assignment that December 16, 2004 is the date of our analysis and that lease rent is paid at the **end** of each fiscal year (BBY's end of fiscal year is in February). Do NOT prorate the lease for February 2005. Also assume that Best Buy currently has a BBB- (S&P)/Baa3 (Moody's) bond rating and that the maturity of their debt is **20** years. To calculate the pre-tax cost of debt = discount rate for discounting cash flows to holders of debt such as leases, you will add the default spread (located in the worksheet labeled **Spreads 20041216**) which is stated in basis points (100 basis points = 1%) to the 20 year Treasury bond (intuition: because BBY's debt has a 20 year maturity). Since there is no 20 year treasury bond as well as no 20 year default premium (the Spreads 20041216 are the default premium over treasury), take the average of the 10 year and 30 year numbers. Mathematically, the **discount rate on pre-tax cash flows (k_{Debt})** to the debt holder (bondholder) is

$$k_{Debt} = r_F + \text{Default premium} = \text{nominal risk free yield} + \text{default spread}$$

To calculate the imputed interest, first discount the operating lease expense (also known as rental expense) by using the pre-tax cost of debt as the discount rate. Since the rental payments after 2009 (the line item labeled "Thereafter") is the sum of all future lease commitments e.g. $\text{Rent Thereafter} = \text{Rent}_{2010} + \text{Rent}_{2011} + \dots + \text{Rent}_{20xx}$, we will use the fact that operating leases expire in 2024⁵ in converting the final cumulated amount into annual amounts.

Example: Suppose that a firm has lease commitments of \$294 in Year 1, \$291 in Year 2, \$263 in Year 3, \$245 in Year 4, \$236 in Year 5 and a total of \$2,701 Thereafter. If operating leases go through year 15, then the Rent Thereafter = \$2,701 represents the

⁴At the time that this case was written, the 2/28/2004 10K was the most recent 10K available.
⁵In BBY's 10K, it states that "The terms of our lease agreements generally range up to 20 years."

sum of cumulative rents over the remaining ten years from year 6 through year 15. Consequently, the annual lease payments for each of the remaining ten years is $\$2,701/10 \text{ years} = \270.10 per year. Thus,

	Year 6	Year 7	Year 8	Year 15
Operating Lease	\$270.10	\$270.10	\$270.10		\$270.10

Once you have calculated the present value of operating leases i.e., long-term debt due to operating leases, multiply this amount by the pre-tax cost of debt⁶ (the discount rate) to obtain the imputed interest on operating leases.

$\begin{aligned} \text{Imputed Interest on} & & \text{PV of Off-Balance} & * & \text{Pre-tax Interest Rate} \\ \text{Operating Leases} & = & \text{Sheet Debt} & & \end{aligned}$

Observe that the calculation of interest for off-balance sheet debt (operating leases) is identical to the way that interest for on-balance sheet debt is calculated. As an example, suppose that a firm issues \$500 million in bonds (debt) with a 6% coupon. Then the interest rate is \$30 million and is calculated as follows

$$\begin{aligned} \text{Interest on debt} &= \text{Amount of Debt} * \text{Interest Rate} \\ &= \$500 * .06 = \$30 \end{aligned}$$

The rationale for why we are doing this: **Operating lease expenses** are really **fixed financial expenses**, although accounting standards allow these rental expenses to be treated as **operating** expenses. The debt arising from operating leases is treated as an “off-balance sheet” item. Thus, we will convert operating leases into debt and adjust the operating income accordingly, by adding back the imputed interest expense on this debt.

2. Operating Cash Flow (35 points): Calculate the operating cash flow for the last twelve months (LTM) or trailing twelve months (TTM) using BBY’s 10Q. *Intuition:* In the real world, analysts use the most current financial information on a firm. As such, they frequently add together information on the last twelve months (e.g. quarterly sales, expenses, and other “flow” information) if several quarters have past since a firm issued their annual report/10K.

In calculating cash flows, recall that items in the quarterly income statement are “flows” in contrast to items in the quarterly balance sheet which are “stock” items. A “stock” item is analogous to calling a store Best Buy and asking whether they have any video phones currently in “stock” before wasting your time to drive to the store.

⁶Please refer to the assumptions page which is the last page of this handout.

3. Non-cash Working Capital and Change in non-cash Working Capital (15 points): Calculate the non-cash working capital for the current period (8/28/2004) using BBY's 10Q. Also calculate the NWC for the prior period (8/30/2003). Calculate the change in non-cash working capital by subtracting $NWC_{8/28/04} - NWC_{8/30/03}$. If a line item has an "NA", set the "NA" equal to zero for purposes of our calculations. Note that we are using the financial definition of working capital rather than the accounting definition. The accounting definition incorrectly includes excess cash and interest-bearing debt.

4. Free Cash Flow to the Firm (10 points): Calculate the TTM free cash flow to the firm (FCFF) using the results in questions 3 and 4 above and your calculations for capital expenditures for the trailing twelve months.

5. Understanding Accounting Concepts (10 points): Please discuss

a. whether interest income should be included in free cash flow to the firm. What about any cash proceeds from security offerings? Please provide economic intuition as to why these items should or should not be included in FCFF.

b. whether accounts payable and/or lines of credit (LOC) should be regarded as debt for purposes of calculating the finance definition of working capital.

c. what is the difference between a capital lease and an operating lease? Why is a capital lease reported on the balance sheet as debt while an operating lease is an off-balance sheet item (reported in the footnotes to the financial statements)?

Please turn in a hard-copy of your work together with a disk containing your spreadsheets. No late work will be accepted. Please put your name on your disk. This is an individual effort. Any student caught cheating will be given an F on this project.

Assumptions: Use in calculating the Free Cash Flow to the Firm

Line Item	Calculation/Assumption
Pre-tax Cost of Debt	Assume that Best Buy (BBY) currently has bond rating of BBB- (S&P)/Baa3 (Moody's) bond rating and that the maturity of their debt is 20 years. I obtained this bond rating from Mergent Online (NYU Intranet). To calculate the pre-tax cost of debt = discount rate for discounting cash flows to holders of debt such as leases, you will add the default spread (located in the worksheet labeled Spreads 20041216) which is stated in basis points (100 basis points = 1%) to the 20 year Treasury bond (intuition: because BBY's debt has a 20 year maturity). Since there is no 20 year treasury bond as well as no 20 year default premium (the Spreads 20041216 are the default premium over treasury), take the average of the 10 year and 30 year numbers.
Imputed Interest on Operating Lease	Imputed Interest = PV of Operating Lease * Pre-tax Cost of Debt
Operating Cash Flow	EBITDA + <u>Imputed Interest on Operating leases</u> Adjusted EBITDA <u>- Taxes</u> Operating Cash Flow (OCF)
Non-cash Working Capital (NWC)	Non-cash Current Assets - Non-debt Current Liabilities ⁷ . Cash includes cash equivalents e.g., cash + marketable securities.
Change in Non-cash Working Capital (Δ NWC)	NWC in period T – NWC in period T-1. Δ NWC = $NWC_T - NWC_{T-1}$. Here T = 8/28/2004 and T-1 = 8/30/2003.
Capital Expenditures (CapEx)	CapEx in each period is the amount spent per quarter. This is a “flow” item just like items in the income statement.
Free Cash Flow to the Firm (basic definition)	Operating Cash Flow - Δ NWC – Capital Expenditures (please refer to pages 296-297 of your text.)

*If a cell in the spreadsheet that you downloaded contains an NA (Not Applicable), assume that NA = zero (0) for purposes of this case study.

⁷This definition of working capital differs from that in your textbook. RWJ define net working capital total current assets – total current liabilities. The current portion of LT debt is excluded in our definition since we will consider it as part of the overall financing and thus we exclude it in NWC to avoid double counting. We also eliminate cash from our definition since we are estimating the effect of changes on cash flows. See Damodaran's Corporate Finance text for a fuller elaboration on this subject.