

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. This assignment should be done after you have finished the assigned homework problems for Chapter 10.

Company: McDonald's (Ticker: MCD) is the world's largest fast-food company in terms of sales with approximately 30% of its locations company-owned and the rest franchisee operated. It has over 30,000 restaurants in 120 countries. The majority of McDonald's restaurants (approximately 80%) and total revenues (about 75%) are generated from 9 markets: Australia, Brazil, Canada, China, France, Germany, Japan (a 50% owned affiliate), the United Kingdom, and the United States.



McDonald's also owns the Boston Market, Chipotle Mexican Grill, and Donatos Pizza chains which are all located in the United States. In April of 2003, Reuters reported that McDonald's is targeting system-wide annual sales growth of 3% to 5% and anticipates annual operating income growth (EBIT) of 6% to 7% in 2005 and beyond.

Competitors: Burger King (Private), Wendy's (WEN), Subway (Private), Yum (formerly Tricon Global Restaurants - YUM).

Assignment: Download the MCD data from my website and use the downloaded spreadsheet (MCD2003) to answer the following questions (all work should be done on this spreadsheet). Assume that your analysis is of May 29, 2003¹:

1. Imputed Interest on Operating Leases (30 points): Calculate the imputed interest on operating leases for McDonald's for the trailing twelve months (TTM) ending December 31, 2002. In addition to this, go to the WSRN website (<http://www.wsrn.com>) and print



out the page in the 3/12/2003 10K that has the information on operating leases.. the actual per year amount. Assume for purposes of this assignment that May 29, 2003 is the date of our analysis and that lease rent is paid at the **end** of the year. 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 2007 (the line item labeled "Thereafter") is the sum of all future lease commitments e.g. $\text{Rent}_{\text{Thereafter}} = \text{Rent}_{2008} + \text{Rent}_{2009} + \dots + \text{Rent}_{20xx}$, we will use the average lease commitment over the first five

¹ At the time that this case was written, the March 2003 financial statements had not yet been posted to Global Access in spreadsheet form even though a hard copy form of the financial statement existed. As such, just use the information in the spreadsheet provided for this exercise.

years (from Year 2003 to Year 2007) as an approximate annuity 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. The average rent over this period is \$266 $((294+291+264+245+236)/5)$. Dividing this average rent into the cumulative amount of \$2,701 yields a 10 year annuity $(2701/266 = 10.15)$ or 10 years rounded down to an integer). This annuity can be considered to have annual lease payments of \$270 a year for 10 years $(\$2,701/10 = \$270)$ starting in year 6. Consequently, the annual lease payment is approximately \$270 for year 6 through year 15. 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 debt² (the discount rate) to obtain the imputed interest on operating leases.

$$\text{PV of Debt} * \text{Pre-tax Interest Rate} = \text{Imputed Interest on Operating Leases}$$

Rationale for why we are doing this: Operating lease expenses are really 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). *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.

3. Non-cash Working Capital and Change in non-cash Working Capital (15 points): Calculate the non-cash working capital for the current period (12/31/2002). Also calculate the NWC for the prior period (12/31/2001). Calculate the change in non-cash working capital by subtracting $\text{NWC}_{12/31/02} - \text{NWC}_{12/31/01}$. If a line item has an “NA”, set the “NA” equal to zero for purposes of our calculations. Note: In contrast to the income statement, items in the balance sheet are “stock” variables.

4. Free Cash Flow to the Firm (15 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. The Nature of Income (5 points): Please discuss whether interest income should be included in free cash flow to the firm. What about any cash proceeds from security offerings (e.g., McDonald's Japan IPO gain)? Please provide economic intuition as to why these items should or should not be included in FCFF.

²Please refer to the assumptions page which is the last page of this handout.

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	As of February 21, 2003, McDonald's had a bond rating of A2 from Moody's (this is equivalent to an A rating from S&P or Fitch). Their most recent bond issues also carry this A2/A rating. Using a 10 year benchmark, it's pre-tax cost of debt as of May 29, 2003 is thus $.0105 + .0342 = .0447$ or 4.47%
Imputed Interest on Operating Lease	Imputed Interest = PV of Operating Lease * Pre-tax Cost of Debt
Operating Cash Flow	EBITDA + Imputed Interest on Operating leases <u>Adjusted EBITDA</u> - Taxes Operating Cash Flow (OCF)
Non-cash Working Capital (NWC)	Non-cash Current Assets - Non-debt Current Liabilities ³ . 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 = 12/31/2002 and T-1 = 12/31/2001.
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.

³This 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.