

Homework Solutions - Lecture 3

1. **Operating Lease Adjustments:**

Future operating lease commitments for Nike, as listed in the 2009 10K, are shown below. Use this information to answer the questions below.

Year	Operating Lease Commitments (\$ millions)
2010	330.2
2011	281.3
2012	233.6
2013	195.6
2014	168.6
>2014	588.5
Total	1,797.8

- a) In the Lecture 2 homework, we found the cost of debt for Nike to be 4.67%. Using this cost of debt, calculate the value of the operating lease debt and operating lease asset for Nike as of FY 2009. Use these values any necessary information from Nike's financial statements to estimate the adjusted book values of debt and assets for Nike.

I will assume that Nike continues to pay 168.6 per year after 2014. Based on this assumption, lease payments after 2014 can be approximated as an annuity of \$168.6 per year for 3.49 years, since $588.5/168.6 = 3.49$. The present value of lease obligations is then given by:

$$PV = \frac{330.2}{(1.0467)^1} + \frac{281.3}{(1.0467)^2} + \frac{233.6}{(1.0467)^3} + \frac{195.6}{(1.0467)^4} + \frac{168.6}{(1.0467)^5} + \frac{168.6 \left(\frac{1 - (1.0467)^{-3.49}}{0.0467} \right)}{(1.0467)^5} = \$1,496.52 \text{ mil}$$

As of FY 2009, Nike's total assets are \$13,249.6 million and total (short-term plus long-term) debt equals \$812.1 million. As discussed in the solutions to homework 2-2, the market value of debt prior to operating leases is 799.3 million. Adjusted values are then given by:

$$\text{Adjusted Debt}(bk) = 812.1 + 1496.5 = 2,308.6$$

$$\text{Adjusted Debt}(mv) = 799.3 + 1496.5 = 2,295.8$$

$$\text{Adjusted Assets} = 13,249.6 + 1496.5 = 14,746.1$$

- b) Using your answers above and any necessary information from Nike's financial statements, calculate the value of after-tax operating income and Net Income in FY 2009 both before and after adjusting for operating leases. Assume a tax rate of 24.0%. Also, note that the firm paid operating lease expenses in 2009 of \$397.0 million.

The income statement gives operating income of \$1,858.5 million. As noted in the solution to homework #1, however, we should exclude restructuring and impairment charges. Adding back these charges, gives adjusted operating income of \$2,454.8 million. Based on the firm's effective tax rate of 24.0%, adjusted after-tax operating income equals:

$$2454.8(1-.24) = 1,865.6$$

The operating lease adjustment can then be applied in one of two ways:

$$\text{Adjusted EBIT}(1-T) = 1865.6 + \left(397 - \left(\frac{1496.5}{(5 + 3.49)} \right) \right) (1-.24) = \$2,033.4$$

OR

$$\text{Adjusted EBIT}(1-T) = 1865.6 + (1496.5)(.0467)(1-.24) = \$1,918.7$$

Note that in both cases, the operating lease adjustment is multiplied by (1-T). I have used the firm's effective tax rate for the adjustment, but it may make sense to use the firm's marginal tax rate.

Reported Net Income equals 1,486.7 prior to any adjustments. Since Net Income is unaffected by the operating lease adjustment, no adjustment for operating leases is necessary. However, we should adjust net income to remove the effects of restructuring and impairment charges. In order to remove these effects, we can add back the after-tax value of these effects, based on the firm's marginal tax rate. The financial statement note describing taxes suggests that Nike's marginal tax rate on U.S. income is 36.2%. Given this tax rate, the adjusted value for Net Income can be calculated as follows:

$$\text{Adjusted Net Income} = 1486.7 + (195.0 + 199.3 + 202.0)(1-.362) = \$1,867.1$$

2. **Capitalization of Advertising**

Advertising expenses for Nike in each of the past four years are listed below. Use this information to answer the subsequent questions.

Year	Advertising Expense (\$ millions)
2006	1,740.2
2007	1,912.4
2008	2,308.3
2009	2,351.3

- a) Assuming a three-year life for advertising, calculate the Advertising Amortization for Nike in FY 2009 and the unamortized value of Nike's Advertising asset in FY 2009. Use your answers and any necessary information from Nike's financial statements to calculate the adjusted book values of equity and assets.

The R&D amortization for FY 2009 and the remaining unamortized amount of R&D can be determined as follows:

Year	Mktg Expense (\$ 000)	Current Year Amortization	Unamortized Amount Remaining in Current Year
2006	1,740.2	580.1	0%
2007	1,912.4	637.5	33%
2008	2,308.3	769.4	67%
2009	2,351.3	0.0	100%
	Total	1987.0	

Equity was unaffected by the operating lease adjustment, so we begin with the book value of equity from the balance sheet (8693.1). Total assets have already been adjusted to reflect the operating lease asset, so we begin with the adjusted value of assets from question #1a (14746.1).

$$\text{Adjusted Equity} = 8693.1 + 4527.6 = \$13,220.7$$

$$\text{Adjusted Assets} = 14746.1 + 4527.6 = \$19,273.7$$

For completeness, we should also increase the appropriate asset categories and retained earnings to reflect the adjustments we made to income for restructuring and impairment charges. I have not included these adjustments here.

- b) Using your answer above and any necessary information from Nike's financial statements, calculate the value of after-tax operating income and Net Income for Nike in FY 2009 after adjusting for the both operating lease and the capitalization of Advertising.

Operating Income will be affected by both the operating lease adjustment and the Advertising adjustment. As a result, we will begin with the adjusted value of after-tax operating income from question (1b). We will then add back the reported Advertising Expense and instead subtract the amortization of Advertising (I will base my answer on the second of the two possible answers to question #2b). Again, no tax adjustment is required.

$$\text{Adjusted EBIT}(1-T) = 1918.7 + (2351.3 - 1987.0) = \$2,283.0$$

Note that Net Income was unaffected by the operating lease adjustment. However, we did make adjustments for restructuring and impairment charges. As a result, we will begin with the adjusted Net Income of 1,867.1 from question (1b). We will then add back the reported Advertising Expense and instead subtract the amortization of Advertising. No tax adjustment is required.

$$\text{Adjusted Net Income} = 1867.1 + (2351.3 - 1987.0) = \$2,231.4$$

3. **Estimating Cash Flows:**

Answer the questions below using your answers to questions (1) and (2) and any necessary information from Nike's financial statements.

- a) Calculate FCFF for Nike in FY 2009.

To calculate FCFF, we begin with the adjusted value of after-tax EBIT as calculated in question #2b (2283.0). We then subtract net capex and increases in working capital, where net capex will include expenditures on acquisitions, capitalized advertising (or R&D), and increases in the operating lease asset.

From the statement of cash flows, we find that CapEx net of asset divestitures in 2009 equals 423.7 (455.7 - 32.0). In addition, depreciation equals 335.0.

The footnotes reveal that the firm spent no money on acquisitions in 2009.

In problem 2, we determined that the 2009 advertising expense was 2351.3 and the 2009 amortization of Advertising was 1987.0.

The value of operating lease assets did not increase from 2008 to 2009 (and actually decreased slightly). As a result, we will not include any additional capex related to the increase in operating lease assets.

To define working capital, I exclude cash, investments, and deferred taxes from current assets, and I exclude all debt items from current liabilities. The resulting non-cash working capital increased from 2698.5 in 2008 to 3104.4 in 2009. This is an increase in non-cash working capital of 405.9.

FCFF is then defined as:

Adjusted EBIT(1-T)	2283.0
- (Capex - Depr)	- (423.7 - 335.0)
- Acquisition Costs	- 0.0
- (Advertising - Amort)	- (2351.3 - 1987.0)
- Increase in WC	- 405.9
<u>= FCFF</u>	<u>\$1,424.1</u>

- b) Calculate FCFE for Nike in FY 2009. Note that the cash flow statement shows that the firm raised a net amount of debt equal to \$170.3 million (177.1 - 6.8).

To calculate FCFE, we begin with the adjusted value of Net Income as calculated in question #2b (2231.4). We then subtract the portion of capex and working capital reinvestment that must be funded by equity holders. I will use the method where we add back net debt issues. An alternative would be to multiply the total amount of reinvestment by 1 minus a specified debt ratio.

FCFE is then defined as:

Adjusted Net Income	2231.4
- (Capex - Depr)	- (423.7 - 335.0)
- Acquisition Costs	- 0.0
- (Advertising - Amort)	- (2351.3 - 1987.0)
- Increase in WC	- 405.9
+ Net Debt Issues	+ 170.3
<u>= FCFE</u>	<u>\$1,542.8</u>