Homework Solutions - Lecture 3

1. **Operating Lease Adjustments:**
Future operating lease commitments for Nike, as listed in Nike's most recent 10K, are shown below. Use this information to answer the questions below.

Year	Operating Lease Commitments ($ millions)
2012	374.0
2013	310.0
2014	253.0
2015	198.0
2016	174.0
>2016	535.0
Total	1,844.0

a) In the Lecture 2 homework, we found the cost of debt for Nike to be 4.09%. Using this cost of debt, calculate the value of the operating lease debt and operating lease asset for Nike as of May 31, 2011 (the end of Nike's fiscal year). Use these values and 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 174.0 per year after 2016. Based on this assumption, lease payments after 2016 can be approximated as an annuity of $174.0 per year for 3.07 years (since 535.0/174.0 = 3.07). The present value of lease obligations is then given by:

$$PV = \frac{374.0}{(1.0409)^1} + \frac{310.0}{(1.0409)^2} + \frac{253.0}{(1.0409)^3} + \frac{198.0}{(1.0409)^4} + \frac{174.0}{(1.0409)^5} + \frac{174.0\left(\frac{1-(1.0409)^{-3.07}}{0.0409}\right)}{(1.0409)^5} = \$1{,}584.5\ mil$$

As of May 2011, Nike's total assets are $14,998 million and total (short-term plus long-term) debt equals $663 million (276+200+187). As discussed in the solutions to homework 2-2, the market value of debt prior to operating leases is $669 million. Adjusted values are then given by:

$$Adjusted\ Debt(bk) = 663 + 1{,}584.5 = 2{,}247.5$$
$$Adjusted\ Debt(mv) = 669 + 1{,}584.5 = 2{,}253.5$$
$$Adjusted\ Assets = 14{,}998 + 1{,}584.5 = 16{,}582.5$$

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 the most recent fiscal year, both before and after adjusting for operating leases. Assume a marginal tax rate of 26.1%. Also, note that the firm paid operating lease expenses in the most recent year of $446 million.

The income statement gives operating income of $2,815 million (= 9508 - 6693). There are no one-time charges or other adjustments. The firm's marginal tax rate of 26.1% (see question 3 below) is the appropriate rate to apply to any income adjustments. We will also apply this rate to operating income. Given this information, adjusted after-tax operating income equals:

2815.0(1-.261) = 2,080.29

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

$$\textit{Adjusted}\ \mathrm{EBIT(1-T)} = 2080.29 + \left(446 - \left(\frac{1584.5}{(5+3.07)}\right)\right)(1-.261) = \$2{,}267.53$$

OR

$$\textit{Adjusted}\ \mathrm{EBIT(1-T)} = 2080.29 + (1584.5)(.0409)(1-.261) = \$2{,}128.89$$

Again, note that we have applied the marginal tax rate to both the operating income term and the adjustment term. Taxes could be taken out of operating income using an alternative rate or alternative method, but taxes should always be applied to the income adjustment at the marginal rate.

Reported Net Income equals $2,133 prior to any adjustments. Since Net Income is unaffected by the operating lease adjustment, no adjustment for operating leases is necessary. The adjusted value of Net Income is therefore equal to $2,133.

Note that for the purposes of calculating FCFE, we may want to remove the effects of non-operating income from Net Income. This would allow us to value non-operating assets separately from the operating cash flows of the firm. However, we will not make this adjustment here.

2. **Capitalization of Advertising**

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

Year	Advertising Expense ($ millions)
2007	1,912.4
2008	2,308.3
2009	2,351.3
2010	2,356.4
2011	2,448.0

a) Assuming a three-year life for advertising, calculate the Advertising Amortization for Nike in the most recent fiscal year and the unamortized value of Nike's Advertising asset at the end of the fiscal year (May 31, 2011). Use your answers and any necessary information from Nike's financial statements to calculate the adjusted book values of equity and assets.

The advertising amortization for the most recent year and the remaining unamortized amount of advertising can be determined as follows:

Year	Mktg Expense ($ 000)	Current Year Amortization		Unamortized Amount Remaining in Current Year	
2008	2,308.3	33.33%	769.43	0.00%	0.00
2009	2,351.3	33.33%	783.77	33.33%	783.77
2010	2,356.4	33.33%	785.47	66.67%	1570.93
2011	2,448.0	0.00%	0.00	100.00%	2448.00
	Total		2338.67		4802.70

Equity was unaffected by the operating lease adjustment, so we begin with the book value of equity from the balance sheet (9843). Total assets have already been adjusted to reflect the operating lease asset, so we begin with the adjusted value of assets from question #1a (16582.5).

Adjusted Equity = 9843 + 4802.7 = $14,465.7 million
Adjusted Assets = 16582.5 + 4802.7 = $21,385.2 million

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 the most recent fiscal year 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 #1b). Again, no tax adjustment is required.

Adjusted EBIT(1-T) = 2128.89 + (2448 – 2338.67) = $2,238.22

Note that Net Income was unaffected by the operating lease adjustment. As a result, we will begin with the reported Net Income of 2,133 from question (1b). We will then add back the reported Advertising Expense and instead subtract the amortization of Advertising. No tax adjustment is required.

Adjusted Net Income = 2133 + (2448 – 2338.67) = $2,242.33

Again, note that for the purposes of calculating FCFE, we may want to remove the effects of non-operating income from Net Income. This would allow us to value non-operating assets separately from the operating cash flows of the firm. However, we will not make this adjustment here.

3. **Taxes:**

Answer the questions below using any necessary information from Nike's financial statements and 10K.

a) Calculate Nike's effective tax and marginal tax rates for the fiscal year ending May 31, 2011.

We can define Nike's effective tax rate based on reported taxes and pre-tax income, or:

$$\text{Effective Tax Rate} = \frac{711}{2844} = 25.0\%$$

Nike earns a substantial portion of its earnings outside the U.S. The notes to Nike's financial statements suggest that Nike raises debt globally and also pays taxes on earnings at a lower rate outside the U.S. than inside the U.S. For these reasons, I calculate Nike's marginal tax rate by adding the federal, state ,and foreign tax rates listed in the reconciliation discussion of the tax footnote, or:

$$\text{Marginal Tax Rate} = 35.0\% + 1.3\% - 10.2\% = 26.1\%$$

b) McKinsey & Co. recommend estimating the taxes actually paid on the operating income of the firm. They refer to this as operating cash taxes. Estimate the operating cash taxes for Nike in the most recent fiscal year using the following steps: (1) start with reported taxes, (2) subtract the taxes paid on non-operating income, (3) add back the tax shield related to interest expenses on the firm's debt (including debt listed on the balance sheet and operating lease debt), and (4) subtract (add) any increase (decrease) in deferred tax liabilities. For steps (2) and (3), estimate the taxes effects using the firm's marginal tax rate.

To estimate the operating cash tax rate, we begin with Nike's reported taxes of $711 million. Nike had non-operating income totaling $33 million and interest expenses of $4 million. Using the firm's marginal tax rate (26.1%) to make adjustments, Nike's operating taxes are then calculated as:

711 - 33(.261) + 4(.261) = $704.43

Although not shown here, we could also add back tax effects related to the implied interest expense on operating lease debt. This additional tax effect would equal +(1584.5)(.0409)(.261)=+$16.91.

To get operating cash tax rate, we then add reductions in deferred tax liabilities or subtract reductions in deferred tax assets. The balance sheet shows three categories of deferred tax assets and liabilities. Based on the these accounts, the firm's net deferred tax assets increased by $18m from 2010 to 2011. However, these balance sheet categories include items unrelated to deferred taxes and additional deferred tax items can be included in other asset and liability categories. To get a better estimate of the change in deferred taxes, we can examine the discussion of deferred taxes in the tax footnote. This note suggests that net deferred tax assets increased from $517 in 2010 to $563 in 2011, an increase of $46 million. As a result, Nike's operating cash taxes equal:

704.43 + 46 = $749.43 million

and the firm's operating cash tax rate equals this amount divided by pre-tax operating income, or:

$$\text{Operating Cash Tax Rate} = \frac{749.43}{2815} = 26.62\%$$

Note that McKinsey also ignores non-operating deferred tax items. We will not get into that much detail here.

4. **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 the most recent fiscal year.

To calculate FCFF, we begin with the adjusted value of after-tax EBIT as calculated in question #2b (2238.22). We then subtract net capex and increases in working capital, where net capex will be adjusted to 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 2011 equals 431 (432 – 1) and depreciation equals 335. The statement of cash flows also lists 23 million for "amortization and other". A more detailed look at the note 4 suggests that only 16 million of this amount is amortization. I will include this 16 million with the 335 million in depreciation, giving 335+16=351.

The footnotes reveal that the firm spent no money on acquisitions in 2011.

In problem 2, we determined that the 2011 advertising expense was 2448 and the 2011 amortization of Advertising was 2338.67.

In problem 1, we determined that the value of operating lease debt is currently 1584.5. Repeating the operating lease calculation for the prior year using the firm's cost of debt of 4.09% gives a debt value of 1382.6. In other words, operating lease debt (and assets) increased by $201.9. Will we include this amount as an additional CapEx.

To define working capital, I exclude cash, investments, and deferred taxes from current assets, and I exclude all debt items (current portion of l-t debt and notes payable) from current liabilities. The resulting non-cash working capital increased 2346 in 2010 to 2876 in 2011. This is an increase in non-cash working capital of 530.

FCFF is then defined as:

Adjusted EBIT(1–T)	2238.22
– (Capex – Depr)	– (431.0 – 351.00)
– Acquisition Costs	– 0.00
– (Advertising – Amort)	– (2448.00 – 2338.67)
– Increase in Oper. Lease Assets	– 201.90
– Increase in WC	– 530.00
= FCFF	$1,316.99

b) Calculate FCFE for Nike in the most recent fiscal year. Note that the cash flow statement shows that the firm raised a net amount of debt equal to $33.0 million.

To calculate FCFE, we begin with the adjusted value of Net Income as calculated in question #2b (2242.33). 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 subtract net payments to debtholders (or, equivalently, add back money raised from debt issues). An alternative would be to multiply the total amount of reinvestment by 1 minus a specified debt ratio. Nike also appears to pay preferred stock dividends of approximately $30,000 per year. As these dividends are relatively small relative to the value of FCFE, I will ignore them here.

Again, note that the adjusted net income here includes non-operating (investment) income. Ideally, we would remove this income from Net Income before calculating cash flows and then add the value of investments to our equity value at the end of the valuation.

FCFE is then defined as:

Adjusted Net Income	2242.33
– (Capex – Depr)	– (431.0 – 351.00)
– Acquisition Costs	– 0.00
– (Advertising – Amort)	– (2448.00 – 2338.67)
– Increase in Oper. Lease Assets	– 201.90
– Increase in WC	– 530.00
– Net Debt Repayments (+ Net Debt Issues)	+ 33.00
= FCFE	$1,354.10

Operating lease commitments from the Nike 10K:

Contractual Obligations

Our significant long-term contractual obligations as of May 31, 2011, and significant endorsement contracts entered into through the date of this report are as follows:

Description of Commitment (In millions)	Cash Payments Due During the Year Ending May 31, 2012	2013	2014	2015	2016	Thereafter	Total
Operating Leases	$ 374	$ 310	$ 253	$ 198	$ 174	$ 535	$ 1,844
Long-term Debt	200	48	58	8	109	37	460
Endorsement Contracts[1]	800	806	742	615	463	1,018	4,444
Product Purchase Obligations[2]	3,175	—	—	—	—	—	3,175
Other[3]	277	137	22	4	1	—	441
TOTAL	**$ 4,826**	**$ 1,301**	**$ 1,075**	**$ 825**	**$ 747**	**$ 1,590**	**$ 10,364**

Information on the Market Value of long-term debt from the Nike 10K:

NOTE 8 Long-Term Debt

Long-term debt, net of unamortized premiums and discounts and swap fair value adjustments, is comprised of the following:

(In millions)	May 31, 2011	2010
5.66% Corporate bond, payable July 23, 2012	$ 26	$ 27
5.40% Corporate bond, payable August 7, 2012	16	16
4.70% Corporate bond, payable October 1, 2013	50	50
5.15% Corporate bond, payable October 15, 2015	114	112
4.30% Japanese Yen note, payable June 26, 2011	130	116
1.52% Japanese Yen note, payable February 14, 2012	62	55
2.60% Japanese Yen note, maturing August 20, 2001 through November 20, 2020	54	53
2.00% Japanese Yen note, maturing August 20, 2001 through November 20, 2020	24	24
Total	476	453
Less current maturities	200	7
	$ 276	**$ 446**

The scheduled maturity of long-term debt in each of the years ending May 31, 2012 through 2016 are $200 million, $48 million, $58 million, $8 million and $109 million, at face value, respectively.

The Company's long-term debt is recorded at adjusted cost, net of amortized premiums and discounts and interest rate swap fair value adjustments. The fair value of long-term debt is estimated based upon quoted prices for similar instruments. The fair value of the Company's long-term debt, including the current portion, was approximately $482 million at May 31, 2011 and $453 million at May 31, 2010.

In fiscal years 2003 and 2004, the Company issued a total of $240 million in medium-term notes of which $190 million, at face value, were outstanding at May 31, 2011. The outstanding notes have coupon rates that range from 4.70% to 5.66% and maturity dates ranging from July 2012 to October 2015. For each of these notes, except the $50 million note maturing in October 2013, the Company has entered into interest rate swap agreements whereby the Company receives fixed interest payments at the same rate as the notes and pays variable interest payments based on the six-month LIBOR plus a spread. Each swap has the same notional amount and maturity date as the corresponding note. At May 31, 2011, the interest rates payable on these swap agreements ranged from approximately 0.3% to 1.0%.

In June 1996, one of the Company's wholly owned Japanese subsidiaries, NIKE Logistics YK, borrowed ¥10.5 billion (approximately $130 million as of May 31, 2011) in a private placement with a maturity of June 26, 2011. Interest is paid semi-annually. The agreement provides for early retirement of the borrowing.

In July 1999, NIKE Logistics YK assumed a total of ¥13.0 billion in loans as part of its agreement to purchase a distribution center in Japan, which serves as collateral for the loans. These loans mature in equal quarterly installments during the period August 20, 2001 through November 20, 2020. Interest is also paid quarterly. As of May 31, 2011, ¥6.3 billion (approximately $78 million) in loans remain outstanding.

In February 2007, NIKE Logistics YK entered into a ¥5.0 billion (approximately $62 million as of May 31, 2011) term loan that replaced certain intercompany borrowings and matures on February 14, 2012. The interest rate on the loan is approximately 1.5% and interest is paid semi-annually.

Information on advertising costs from the Nike 10K:

Selling and Administrative Expense

(In millions)	Fiscal 2011	Fiscal 2010	FY11 vs. FY10 % Change	Fiscal 2009	FY10 vs. FY09 % Change
Demand creation expense[1]	$ 2,448	$ 2,356	4%	$ 2,352	0%
Operating overhead expense	4,245	3,970	7%	3,798	5%
Selling and administrative expense	$ 6,693	$ 6,326	6%	$ 6,150	3%
% of Revenues	32.1%	33.3%	(120) bps	32.1%	120 bps

(1) Demand creation consists of advertising and promotion expenses, including costs of endorsement contracts.

Information on the marginal tax rate from the Nike 10K:

A reconciliation from the U.S. statutory federal income tax rate to the effective income tax rate follows:

	Year Ended May 31, 2011	2010	2009
Federal income tax rate	35.0%	35.0%	35.0%
State taxes, net of federal benefit	1.3%	1.3%	1.2%
Foreign earnings	-10.2%	-13.6%	-14.9%
Other, net	-1.1%	1.5%	2.7%
EFFECTIVE INCOME TAX RATE	**25.0%**	**24.2%**	**24.0%**

The effective tax rate for the year ended May 31, 2011 of 25.0% increased from the fiscal 2010 effective tax rate of 24.2% due primarily to the change in geographic mix of earnings. A larger percentage of our earnings before income taxes in the current year are attributable to operations in the United States where the statutory tax rate is generally higher than the tax rate on operations outside of the U.S. This impact was partially offset by changes to uncertain tax positions. Our effective tax rate for the year ended May 31, 2010 of 24.2% increased from the fiscal 2009 effective rate of 24.0%. The effective tax rate for fiscal 2009 includes a tax benefit related to charges recorded for the impairment of Umbro's goodwill, intangible and other assets.

Information on deferred taxes from the Nike 10K:

Deferred tax assets and (liabilities) are comprised of the following:

(In millions)	May 31, 2011	2010
Deferred tax assets:		
Allowance for doubtful accounts	$ 19	$ 17
Inventories	63	47
Sales return reserves	72	52
Deferred compensation	152	144
Stock-based compensation	148	145
Reserves and accrued liabilities	66	86
Foreign loss carry-forwards	60	26
Foreign tax credit carry-forwards	236	148
Hedges	21	1
Undistributed earnings of foreign subsidiaries	—	128
Other	86	37
Total deferred tax assets	923	831
Valuation allowance	(51)	(36)
Total deferred tax assets after valuation allowance	872	795
Deferred tax liabilities:		
Undistributed earnings of foreign subsidiaries	(40)	—
Property, plant and equipment	(151)	(99)
Intangibles	(97)	(99)
Hedges	(1)	(72)
Other	(20)	(8)
Total deferred tax liability	(309)	(278)
NET DEFERRED TAX ASSET	**$ 563**	**$ 517**