

INTRODUCTION

Background:

Kimi Ford, a portfolio manager of a large mutual fund management firm, is looking into the viability of investing in the stocks of Nike for the fund that she manages. Ford should base her decision on data on the company which were disclosed in the 2001 fiscal reports. While Nike management addressed several issues that are causing the decrease in market sales and prices of stocks, management presented its plans to improve and perform better. Third party sources also gave their opinions on whether the stock was a sound investment.

The **weighted average cost of capital (WACC)** is the rate (expressed as a percentage, like interest) that a company is expected to pay to debt holders (cost of debt) and shareholders (cost of equity) to finance its assets. It is the minimum return that a company must earn on existing asset base to satisfy its creditors, owners, and other providers of capital. Companies raise money from a number of sources: common equity, preferred equity, straight debt, convertible debt, exchangeable debt, warrants, and options, pension liabilities, executive stock options, governmental subsidies, and so on. Different securities are expected to generate different returns. WACC is calculated taking into account the relative weights of each component of the capital structure- debt and equity, and is used to see if the investment is worthwhile to undertake.

Management always takes notice of the cost of capital while taking a financial decision. The concept is quite relevant in the following managerial decisions and hence its importance:

(1) Capital Budgeting Decision. Cost of capital may be used as the measuring rod for adopting an investment proposal. The firm, naturally, will choose the project which gives a satisfactory return on investment which would in no case be less than the cost of capital incurred for its financing. In various methods of capital budgeting, cost of capital is the key factor in deciding the project out of various proposals pending before the management. It measures the financial performance and determines the acceptability of all investment opportunities.

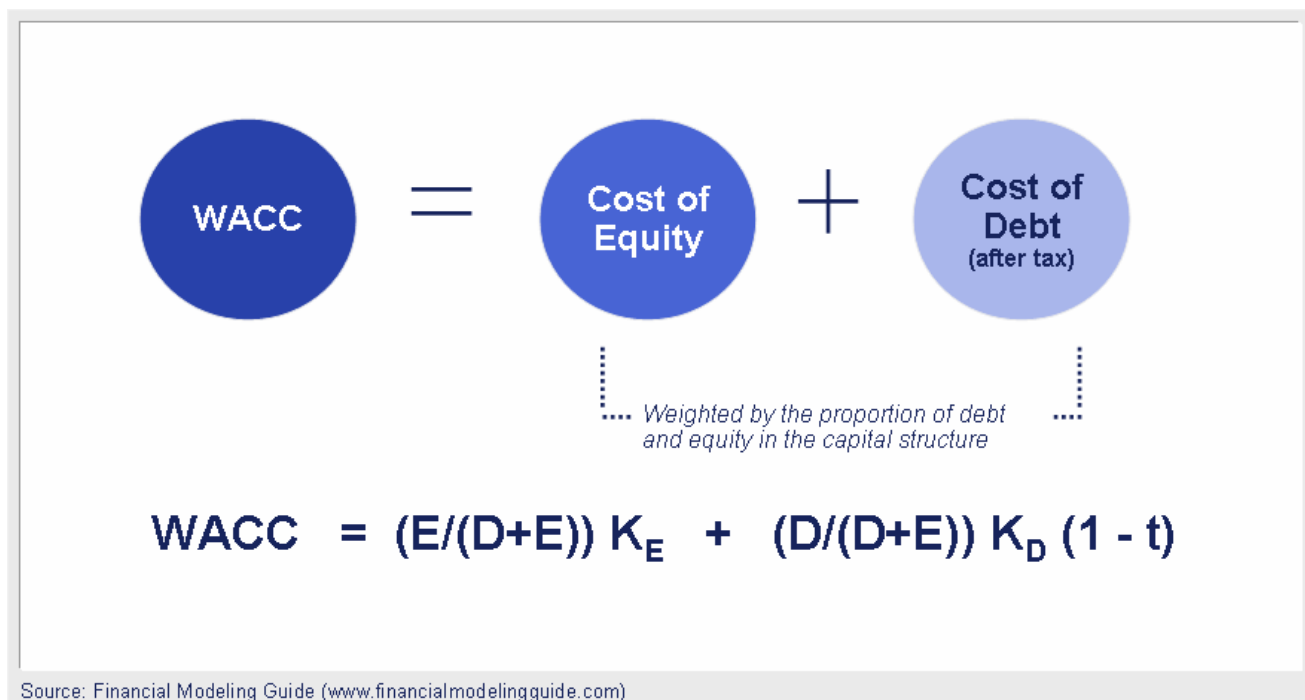
(2) Designing the Corporate Financial Structure. The cost of capital is significant in designing the firm's capital structure. The cost of capital is influenced by the changes in capital structure. A capable financial executive always keeps an eye on capital market fluctuations and tries to achieve the sound and economical capital structure for the firm. He may try to substitute the various methods of finance in an attempt to minimize the cost of capital so as to increase the market price and the earning per share.

(3) Deciding about the Method of Financing. A capable financial executive must have knowledge of the fluctuations in the capital market and should analyze the rate of interest on loans and normal dividend rates in the market from time to time. Whenever company requires additional finance, he may have a better choice of the source of finance which bears the minimum cost of capital. Although cost of capital is an important factor in such decisions, but equally important are the considerations of relating control and of avoiding risk.

(4) Performance of Top Management. The cost of capital can be used to evaluate the financial performance of the top executives. Evaluation of the financial performance will involve a comparison of actual profitability's of the projects and taken with the projected overall cost of capital and an appraisal of the actual cost incurred in raising the required funds.

(5) Other Areas. The concept of cost of capital is also important in many others areas of decision making, such as dividend decisions, working capital policy etc.

WACC CALCULATION:



II. Cost of Capital Calculations: Nike Inc

Cohen calculated a weighted average cost of capital (WACC) of 8.3 percent by using the capital asset pricing model (CAPM) for Nike Inc. And we do not agree with her figure, and the reasons to that are postulated as follows:

I. Value of equity

The problem with Cohen's calculations is that she used the book value for both debt and equity. While the book value of debt is accepted as an estimate of market value, book value of equity should not be used when calculating cost of capital. The market value of equity is found by multiplying the stock price of Nike Inc. by the number of shares outstanding.

Market Value of Equity(E) Calculation:

$$\begin{aligned}
 &= \frac{E}{\text{Stock Price}} \times \text{Number of Shares Outstanding} \\
 &= \$42.09 \times 271.5 \\
 &= \mathbf{\$11,427.44}
 \end{aligned}$$

This figure is much different than the book value of equity that Joanna Cohen used (\$3,494.50).

II. Value of Debt

Market value of debt should be used in the calculation of the cost of debt contrary to a book value used by Cohen. She should have discounted the value of long-term debt that appears on the balance sheet. The market value of debt is found by adding the current portion of long-term debt, notes payable, and long-term debt discounted at Nike's current coupon.

Market Value of Debt

$$\begin{aligned}
 &D \\
 = & \quad \text{Current LT} \quad + \quad \text{Notes Payable} \quad + \quad \text{LT Debt (discounted)} \\
 = & \quad \$5.40 \quad + \quad \$855.30 \quad + \quad \$416.72 \\
 = & \quad \mathbf{\$1,277.42}
 \end{aligned}$$

Using these figures, we can now find the market value of Nike Inc., and the company's capital structure.

III. Weightings

The weights of debt and equity are calculated using the market values of debt and equity as follows:

Weight of Debt(W _D)		Weight of Equity(W _E)	
W _D	$= \frac{D}{D+E}$ $= \frac{\$1,277.42}{\$12,704.86}$ $= \mathbf{10.05\%}$	W _E	$= \frac{E}{D+E}$ $= \frac{\$11,427.44}{\$12,704.86}$ $= \mathbf{89.95\%}$

IV. Cost of Debt and Equity

The next issue at hand is finding the correct costs of debt and equity in order to find an accurate calculation of WACC. Cohen used the 20-year yield on U.S. Treasuries as the risk free rate, which we found to be the correct figure given that Nike Inc. debt was valued over 25 years. Because there is no other given yield that is comparable to a 25-year valuation period, our risk free rate used in calculations is 5.74 percent.

Just as important as choosing a risk free rate is choosing the appropriate market risk premium. There are two historical equity risk premiums given for a time period from 1926 to 1999: Geometric mean and arithmetic mean. The geometric mean is a better estimate for longer life valuation while the arithmetic

mean is better for a one-year estimated expected return. Therefore, we chose to use the geometric mean to coincide with the choice to use the 20-year yield on U.S. Treasuries, which is 5.9 percent.

Next, we had to decide on a beta to use for Nike Inc. for use in the CAPM approach. The logical choice was to use the average (0.80) to account for the large fluctuations seen in Nike's historic betas. We felt that the YTD beta was a reflection of current business practices, but the goal of Nike Inc. was to look forward and gain back market share and increase revenues. Consequently, we felt the average beta reflected the historical business practices of Nike Inc. better.

From here, we calculated the cost of debt and equity. Cost of debt was calculated by finding the yield to maturity on 20-year Nike Inc. debt with a 6.75% coupon semi-annually. We assumed Nike Inc. to have a single cost of capital since its multiple business segments (shoes, apparel, sports equipment, etc.) are not very different and would experience similar risks and betas.

Cost of Debt

Cost of Debt	
K_D	= YTM on 20 Year Nike Inc. Bond
	= 7.51%

The cost of equity was calculated as follows:

Capital Asset Pricing Model (CAPM)

Cost of Equity(K_E)	
$K_E = R_f + \beta(R_f - R_m)$	$R_f = 5.74\%$ 20 Year Yield on US Treasuries
$= R_f + \text{Beta} * (\text{MRP})$	$\text{MRP} = 5.90\%$ Geometric Mean
$= 10.46\%$	$\text{Beta} = 0.8$ Average Nike Beta

Advantages:

- It considers only systematic risk, reflecting a reality in which most investors have diversified portfolios from which unsystematic risk has been essentially eliminated.
- It generates a theoretically-derived relationship between required return and systematic risk which has been subject to frequent empirical research and testing.
- It is generally seen as a much better method of calculating the cost of equity than the dividend growth model (DGM) in that it explicitly takes into account a company's level of systematic risk relative to the stock market as a whole.
- It is clearly superior to the WACC in providing discount rates for use in investment appraisal.

Disadvantages:

- It is virtually impossible to estimate betas for many projects.
- People sometimes focus on market risk to the exclusion of corporate risk, and this may be a mistake.

The next model that we used to calculate the cost of capital was the dividend discount model.

Dividend Discount Model.

The assumption made with this model is that the company pays a substantial dividend, but Nike Inc. does not. Therefore, we rejected this model because it does not reflect the true cost of capital. The calculation is as follows:

DDM

<i>DDM</i>	=	$[Do(1+g)/Po] + g$
	=	$[0.48(1+.055)/42.09] + .055$
	=	6.70%

Advantages:

- Allow significant flexibility when estimating future dividend streams
- Provide useful value approximations even when the inputs are overly simplified
- Can be reversed so the current stock price can be used to impute market assumptions for growth and expected return
- Investors are able to suit their model to their expectations rather than force-fit assumptions into the model
- Specifying the underlying assumptions allows for sensitivity testing and analyzing market reactions to changing circumstances

Disadvantages

- Subjective inputs can result in misspecified models and bad results
- Over-reliance on a valuation that is at heart an estimate
- High sensitivity to small changes in input assumptions
- Flow-through of minor data entry or formula errors when using spreadsheets

Earnings Capitalization Model:

The final model used to compute the cost of capital was the earning capitalization model. The problem with this model is that it does not take into consideration the growth of the company. Therefore we chose to reject this calculation. The earnings capitalization model calculations were found this way:

ECM

<i>ECM</i>	=	<i>EI/Po</i>
	=	232/42.09
	=	5.51%

Disadvantages

Brealey & Myers argue in Principles of Corporate Finance that this model is not good to use for growing firms but is appropriate for no-growth firms. Hence not appropriate for Nike Inc. since this company is still growing.

Weighted Average Cost of Capital (WACC) for Nike Inc.

CAPM was found to be more superior to other methods of calculating cost of equity, hence the cost of equity used in the WACC is one derived by CAPM. At this point, we calculated the WACC of Nike Inc. using the weights and costs of debt and equity. The formula used is: $WACC = w_d k_d (1-T) + w_e k_e$.

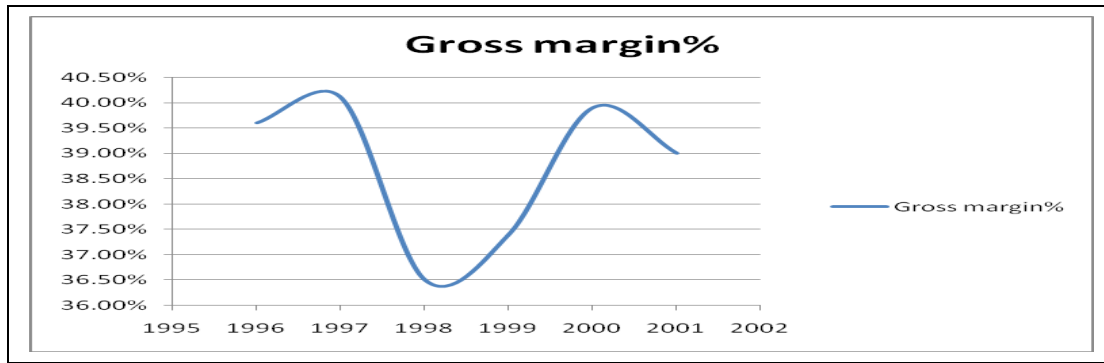
WACC

<i>WACC</i>	=	<i>Wd*Kd(1-T)</i>	+	<i>WeKe</i>
	=	10.05%*7.51 % (1-38%)	+	89.95%*10.46%
	=	0.4682%	+	9.4087%
	=	9.8767%		

The weighted average cost of capital for Nike Inc. is 9.8765 percent.

Financial performance appraisal: Ratio Analysis

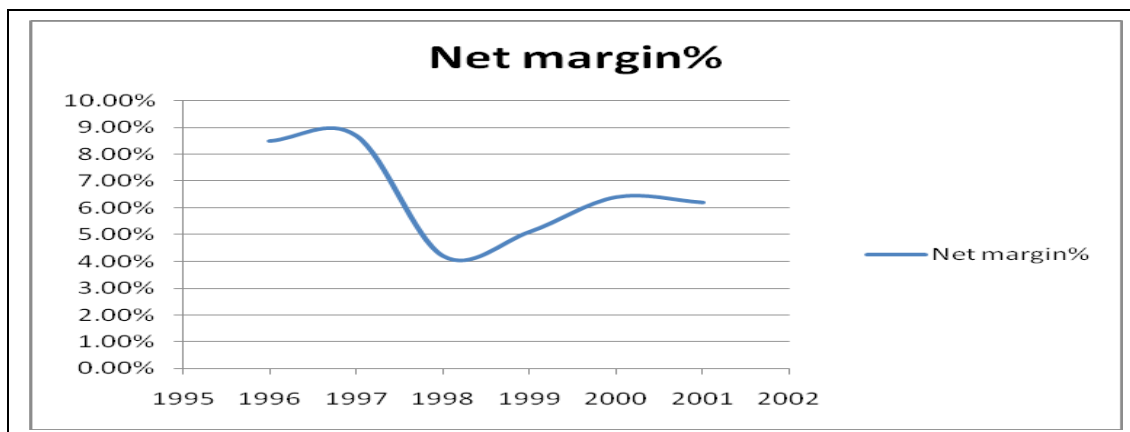
Profitability ratios



Source: Nike Inc 2001

The gross margin calculates the percentage gross profit on sales. The graph shows the percentage going as low as 36.5% in 1998 and recovered ever since till 2000 and turned again. Given the above trend and the management's forecast the gross profit margin sets to improve.

Net Margin = Net profit/Sales



Source: Nike Inc 2001

The graph shows a trend in the net profit margin i.e. the percentage of profit after operating expenses. The net profit margin is recovering from a low of 4% in 1998 to 6% in 2001 and has been consistent with the Gross profit margin a sign that even the expenses management is improving as well hence, profitability of Nike is set to improve.

Liquidity Ratios:

These ratios measure the liquidity position of the firm in question i.e its ability to meet short term obligations with short term assets.

Current Asset Ratio = Current Assets/Current liabilities

Year	
2000	2001

$$\begin{aligned} \text{Current Ratio} &= \frac{3596.4}{2140} = \frac{3625.3}{1786.7} \\ &= 1.6 \text{ times} = 2.03 \text{ times} \end{aligned}$$

Acid test ratio = (Current Assets-Stock)/Current liabilities

$$\begin{aligned} &= \frac{(3596.4-1446)}{2140} = \frac{(3625.3-1424.1)}{1786.7} \\ &= 1.005 \text{ times} = 1.2 \text{ times} \end{aligned}$$

Comment: The liquidity ratios are rated good i.e. Nike Inc. is able to meet its current liabilities with current assets even when we have removed inventory (which is considered illiquid among the current assets). Therefore, Nike is still sound on its liquidity position and has even improved from the preceding year 2000.

Financial/Investment Ratios

Return on Capital Employed (ROCE) = Net profit/Capital Employed

YEAR	
2000	2001
= 579.1/3716.9	589.7/4032.9
= 15.5%	14.62%

ROCE is a measure of the returns that a company is realizing from its capital employed. It is commonly used as a measure for comparing the performance between businesses and for assessing whether a business generates enough returns to pay for its cost of capital. The result shows that though performance had slowed a bit Nike Inc is still giving shareholders a return which is more than the cost of capital. Furthermore, with the improvement in profitability on the business it sets to improve.

Gearing Ratios

This is a measure of financial risk within a firm and is calculated as follows;

$$\text{GR} = \text{Debt} / (\text{Debt} + \text{Equity})$$

YEAR	
2000	2001
= 580.9/3716.9	538.4/4032.9
= 15.63%	13.35%

The gearing ratio of Nike Inc is very low i.e. has got a low financial risk and given the size of Nike and its establishment it should improve its gearing by use of debt in order to maximize shareholder value otherwise it is prone to a take-over through use of cheaper debt. A low gearing for a mature company is not healthy as can be seen that gearing has decreased from 15.63% in 2000 to 13.35% in 2001.

Recommendation:

Kimi Ford used a discount rate of 8.4 percent to find a share price of \$63.50. This makes Nike Inc. share price undervalued by \$21.41 as Nike is currently trading at \$42.09. We already established that we found this discount rate to not reflect the true market value and solved for a discount rate that would be more accurate. We found the weighted average cost of capital by using CAPM, finding a discount rate of 9.8767 percent. This discount rate results in a share price of \$56.81, meaning that Nike Inc. is undervalued by \$14.72 per share.

Using this data, we found that Nike Inc. should be added to the NorthPoint Large-Cap Fund at this time because the stock is undervalued. Therefore at this point in time we recommend a buy decision for Nike Inc. as it has growth potential that would be beneficial to the fund. Along with this fact, management has goals for the near future that could provide a great deal of profit for Nike Inc. All of the plans laid out at the executive meeting display that the company is heading on the recovery path and there is potential for abnormal profits given the growth capacity that Nike has got as elaborated by ratio analysis.

In addition to the above Ratio analysis of the performance of the company has shown a strong potential in the performance of the company since all the ratios are favorable for a better performance. And the set targets by the management are easily achieved if they stay focused since they have the capacity.

Technical analysis also supports a buy decision, because looking on the past performance of the Nike Inc. share against the market index. It has shown that Nike can outperform the market returns and now that it had gown down, it is left with the upside given plans that are being put in place. Once more we reiterate the decision to buy for Nike Inc and monitor its activities very closely.