

# Nike wacc case study

Education



## Financial Management

Agenda 1. What is the WACC and why is it important to estimate a firm's cost of capital?

Do you agree with Joanna Cohen's WACC calculation? Why or why not?

2. If you do not agree with Cohen's analysis, calculate your own WACC for Nike and justify your assumptions.

3. Calculate the costs of equity using CAPM, the dividend discount model, and the earnings capitalization ratio. What are the advantages and disadvantages of each method?

4. What should Kimi Ford recommend regarding an investment in Nike?

2 Case Overview Nike, Inc. NorthPoint Group Investment Decision Current share price of USD 42.09 ? Declining market share for the period 1997-2000 ? Strategy for revitalizing the company under consideration ? Plan to boost revenue and optimize costs ? Highly experienced management team ? Mutual fund management firm ? Emphasis on large-cap value stocks ? Has been outperforming the market for the past 18 months ? Kimi Ford – portfolio manager seeking to identify undervalued stocks, consistent with the fund's investment strategy ? Stock valuation based on forecasting future cash flows over a ten year period ?

Discounting the UFCFF using a predetermined WACC value ? Calculating the discount factor based on the CAPM approach ? Considering sensitivity analysis 3 Understanding the WACC ? The Weighted Average Cost of Capital

is the interest rate (minimal return) at which investor-supplied capital (equity and interest bearing loans) has been provided.

Therefore, it is the weighted average minimum expectation, which shareholders and creditors require for their respective investments made with the company under consideration. The WACC reflects both, the cost of equity and the cost of debt. Different sources of funds have different costs and therefore, depending on the capital structure of the organization, the weightings of debt and equity are calculated and assigned. ?

The WACC is calculated using the following equation:  $WACC = [E/(D+E)] \times Ke + [D/(D+E)] \times Kd (1-t)$  ?

The minimum required return on shareholders' investment. ? CAPM method has been widely used in calculating the cost of equity. ?

$Ke = Rf + b. (Rm - Rf)$  ?

Risk level and volatility are calculated based on historical data. Cost of Equity Cost of Debt ? The interest rate at which a company can acquire new debt. ? Any fixed rates on outstanding debt are not relevant, since the investors are concerned with what it will cost the company to generate cash from any future investments, which would occur at market rates rather than historical ones. ? After tax cost of debt =  $(1-t)Kd$ , since interest is tax deductible.

4 Critique of Joanna's Calculations Calculating Ke Since Joanna's FCF forecast reflects a ten year period, it could be argued that, for the sake of consistency, the yield of a risk free ten year security should be used

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instead. ? An arithmetic mean estimation of the risk premium is generally accepted as an appropriate approach by the investment community. \* ?

Since Nike is a multinational company, its revenue stream bears additional risk based on the specific allocations to various countries. This should reflect additional risk premium such as exchange rate risk, political risk etc. Such calculation goes beyond the scope of this case but it should not be ignored. Beta has been calculated as a historic average but the included value YTD 06/30/01 should be excluded not only since it is not consistent in terms of period length, but the apparels business is seasonal with great portion of the revenues coming during the months of Dec. and Nov. Historic betas prior to 1996 should not be excluded. Calculating  $K_d$  ?

Cost of debt is not properly calculated since potential shareholders and creditors are not concerned with interest on outstanding debt, but rather the current market rate at which the company could borrow to finance its operations and potential expansion. The technique used by Joanna is useful only to get some rough insight on what Nike is paying on its existing debt. ? Joanna has undertaken an appropriate approach in calculating the after tax cost of debt, since debt is tax deductible. ? Joanna is right to consider debt denominated in foreign currency, however her approach is flawed since she is once again looking at outstanding debt, which arrangements that occurred some time in the past might significantly differ from the current market reality. ?

Since existing Nike bonds are trading at discount, we already know that the market yield exceeds the coupon rate. 5 Strong arguments exist for using

the geometric mean under certain circumstances. This point will be further elaborated

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Rf = 5. 39% based on the current 10 year yield for the sake of consistency with the forecasted 10 year FCFF. ? Calculating risk premium based on arithmetic average vs geometric mean: ? Arithmetic average assumes no serial correlation and thus could be overstating the premium. ? Arithmetic average ignores estimation error and available data is limited. ?

Arithmetic average works best for forecasting short term periods where long term periods seem to be better captured by the geometric mean. Cost of Equity Yield on 10-year Treasuries Risk premium - developed market (geo. Risk premium - developed market (arit. ) 5. 39% 5. 90% 7. 50% Average risk premium Risk premium - country specific Levered ? Unlevered Cost of Equity 6. 70% 0. 00% 0. 82 0. 77 10. 91% ? Both methods are acceptable and even though the arithmetic mean is widely accepted as the proper method, we are using an average of both since we are dealing with a long term period and the geometric mean could be potentially more representative. ? No additional country risk premium is assumed due to lack of data. ? Unlevered beta has been calculated in order to reflect only the amount of business risk.

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Cost of Debt Coupon Years to maturity Periods within one year Total periods  
 Face value of c-bond Market price of c-bond YTM

\* Effective YTM 6.75% 20.03 240.05 100.00 95.60 7.17% 7.30%

Yield to Maturity Days from last coupon date Days to next coupon date Days  
 between coupon dates Transaction price Accrued interest adjustment  
 Quoted price Yield to maturity 171 10 181 98.79 3.19 95.60 7.17% 8

\* Calculations have been made based on a 360 day year Calculating WACC  
 10.26% WACC

- Calculations of the weightings
- We use book value of debt since not Weightings  $K_e / K_d$  consider the market value of equity based on the current price per share and the diluted shares outstanding. 89.87%\* 10.13%

\*\* all interest bearing debt is in the form of bonds maturing on 07/15/21 with a current YTD of 7.17%. However, since the company has low leverage and is not under financial distress, there should not be a significant difference between the current market and book value of the outstanding debt. Cost of Equity After Tax Cost of Debt 10.91%

- Calculations are based on revised 4.44%
- Before tax cost of debt has been assumptions previously described.
- Cost of equity is not to be adjusted reviously calculated at 7.17%.

- After applying tax rate of 38% the for taxes. after tax cost of debt amounts to 4.44%. 9

\* Market capitalization as of 05/07/2001 is USD 11.5 bn.

\*\* Total interest bearing debt (current + non-current) as of 31/05/2001 is USD 11.3 bn. Figures as of 05/07/2001 are not provided for a better estimate. Agenda

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Other Methods for Calculating Cost of Equity ?  $P_0 = \frac{D_0(1+g)}{(r-g)}$  ? Could be used for mature companies, which pay dividends on a constant basis, and it is reasonable to expect that they will also do so in the foreseeable future. ?  
The DDM model is overly sensitive over the value of assumed growth (g), however it is a very simple and straight forward method of calculating the fair value of a mature company. Since Nike is expected to undergo cost optimization over the next years, as well as shift in sales strategy, we should

consider a high growth period of the expected dividends, after which constant growth could be assumed. ?

For the purpose of this case, however, we are given that dividends increase by 5.50% on an annual basis, even though Joanne predicts a CAGR of NOPAT for the period 2002-2011 equal to approximately 10.4%. Dividend Discount Model Earnings Cap. Ratio ?  $P_0 = \frac{EPS_0(1+g)(1-b)}{(r-g)}$ , where  $b$  is the retention ratio. ? EPS is an accounting figure. The ratio depends on dividend policy. ? Useful and simple approach for mature firms with easily predictable future EPS and constant growth rate and retention ratio. ? For simplicity, we are assuming  $g = 5.50\%$ , just like in the DDM method. 11 DDM and Earnings Capitalization Ratio Calculations ?

D1 has been calculated as of 30/06/2002, assuming 5.5% increase in annual dividends paid in both 2001 and 2002. Do captures the period 30/06/2000-30/06/2001. ? Based on the DDM and Earnings Capitalization Ratio, we obtain a cost of equity of approximately 6.7%-6.8%.

Both estimates seem unreasonably low. ? This is significantly lower than the calculated cost of equity using the CAPM model. Due to the flaws of both the DDM and Earnings Capitalization Ratio methods described above, we should hold the CAPM approach as most reliable in calculating the cost of equity. ? The calculation of the cost of equity using both the DDM and Earnings Capitalization Ratio methods has been based on assumed constant growth in perpetuity, which will most likely not be the case, especially considering Nike's new sales strategy and cost optimization over the next few years.



Therefore, we are more likely going to observe a higher growth period followed by a stable growth period. Dividend Discount Model  $P_0 = \frac{D_1}{r - g} + \frac{P_5}{(1+r)^5}$   $50\%$   $42.09$   $D_1 = 0.48$   $0.53$   $6.77\%$  Earnings Cap. Ratio  $P_0 = b$  (retention ratio)  $EPS_0 = EPS_1$   $r = 5.50\%$   $42.09$   $77.75\%$   $2.16$   $2.28$   $6.70\%$   $12$  Agenda 1. What is the WACC and why is it important to estimate a firm's cost of capital? Do you agree with Joanna Cohen's WACC calculation? Why or why not? 2.

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Since the purpose of the assignment was to calculate the WACC value only, we have taken all predicted UFCFF levels as given, even though certain adjustments could be appropriate to better reflect the expected boost in sales resulting from the new sales strategy, and the expected cost optimizations. Based on the predicted NPV of UFCFF, we are given that the current price of USD 42.09 suggests a 11.17% discount rate. Since our calculations reveal that the actual discount rate ought to be 10.26%, Nike's share price is trading under its intrinsic value. Therefore, Kimi Ford should recommend a buy on the stock. 14