

## Merger and Acquisition Valuation

**Objective:** The purpose of this project is to reinforce the concepts that you have been exposed to through readings, lectures, and mini-cases as well as financial concepts that you should have learned in your prior finance classes. In essence, you will learn how to value a merger using discounted cash flow techniques. The data for this project can be downloaded from my website. The file is called ip\_merger\_spr2004.xls. The data is current as of August 25, 2003.

**The Deal:** On July 7, 2003, Nautica Enterprises (NAUT) announced that it had signed a definitive merger agreement to be acquired by VF Corporation (VFC). Under the terms of agreement, VF will pay Nautica shareholders \$17.00 per share in cash. In addition, VF will also pay approximately \$14.6 million, net of tax, to cash out employee stock options, for a total consideration of approximately \$585.6 million. The all-cash offer of \$17.00 represents an approximate 58% premium to the closing price on June 10, 2003, the date prior to the initial proxy filing by dissident shareholders, as well as a 28% premium to the closing price of Nautica shares on July 3, 2003. VF has indicated it will borrow \$400 million in commercial paper to finance the acquisition with the remainder financed with cash. The Company expects that even with additional borrowings its debt to total capital ratio at year-end will range between 30-35%, remaining well below the Company's long-term target of 40%. Moody's Investors Service announced that it might cut VF's debt ratings because of its plans to buy Nautica "as well as the recently announced softness in VF's core businesses." If a company's ratings are lowered, its cost of borrowing increases.



In a separate negotiation, VF agreed to pay David Chu, who founded Nautica 20 years ago and is the visionary behind the designs and product lines, \$104 million for his rights to receive 50% of NAUT's royalty income, which approximates \$9M annually<sup>1</sup>. More specifically, VF will pay Mr. Chu \$38M upon the closing of the transaction and \$33 million on each of the 3rd and 4th anniversaries of the closing of the merger. In addition to this, VF will pay Mr. Chu \$625,000 a year to be chief executive of the Nautica brand. Nautica's Chairman, Harvey Sanders, and John Varvatos, CEO and designer of the

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<sup>1</sup>One shareholder said a key to the deal was a provision under which VF Corp. will buy Nautica designer David Chu's intellectual property rights in the brand for about \$104 million. Chu formerly received half of all licensing royalties generated by Nautica. "Continuing to give Chu such a large amount of royalties would have discouraged VF Corp. from expanding the brand and ultimately would have held up the acquisition," the investor said.

John Varvatos subsidiary of Nautica, are entitled to payments of \$4.3 million and \$2.5 million respectively if their employment contracts are terminated within three years of the acquisition.

The catalyst for the merger arose as a result of after a group of disgruntled shareholders led by James A. Mitarotonda, president of investment firm Barington Cos. Equity Partners LP of New York, launched a proxy contest on June 10 to oust three members of Nautica's eight-member board. At the time, he pledged to improve the company's governance, shake up management and encourage Nautica executives to consider a deal. Some Nautica shareholders had also pressed the company to consider a sale because of sluggish sales and concerns about excessive executive compensation. Ten days later, on June 20<sup>th</sup>, Nautica acknowledged it was in merger talks.

After the merger, VFC's priorities for Nautica include growing the business and reducing costs so that Nautica can achieve returns in line with VFC's long-term targets for Nautica of a 14% operating margin and a 17% return on capital within a 3 to 5 year period.

The acquisition of Nautica puts VF Corporation on an even playing field with Philips-Van Heusen who recently acquired Calvin Klein and Kellwood who also recently acquired Kasper, which owns the brands Anne Klein and Le Suit. The merger is consistent with one of VFC's core strategies of targeting brands to reach a variety of consumer segments across all retail channels. The deal gives VF, which sells in discount and mid-level department stores, a stronger hold in more upscale chains (department and specialty stores) and expands its sportswear presence. By purchasing Nautica, VF Corp. gains entree into a lucrative market niche less affected by swings in the economy. Nautica features 25 product lines under three brands that appeal to affluent consumers who shop at higher-profile department stores. These customers tend to be more brand-loyal and less affected by economic blips. Nautica's product line, in addition to apparel, ranges from fragrances to home furnishings and offers expanded marketing opportunities.



### **The Participants:**

VF Corporation (The Acquirer): VF Corporation, the world's largest apparel company are well known for their jeans under the brands Lee®, Wrangler®, Rider®, and Rustler® also manufacture and distribute Vanity Fair, Vassarette, Bestform, Lily of France, Lee Sport, Healthtex, JanSport, Eastpak, Red Kap and The North Face.

Nautica (The Target): Nautica sells preppy clothes in direct competition with Tommy Hilfiger, Ralph Lauren and Calvin Klien. It owns the Nautica, Nautica Competition and Nautica Jeans brands. Its high-end brands include Earl Jeans, considered a wardrobe staple for the fashion conscious, and John Varvatos menswear. Other brands distributed by Nautica are E. Magrath and Byron Nelson.

**Competitors (Publicly Traded):** Columbia Sportswear Company (COLM), Jones Apparel Group, Inc. (JNY), Liz Claiborne, Inc. (LIZ), Oxford Industries, Inc. (OXM), Perry Ellis International (PERY), Phillips-Van Heusen (PVH), Polo Ralph Lauren (RL), Russell Corporation (RML), Tommy Hilfiger (TOM), Quiksilver, Inc. (ZQK).

**Assignment/Tasks:** Download the file ip\_merger\_spr2004.xls and then given the assumptions on page 7 of this mini-case, perform the following tasks using this spreadsheet. Please refer to the section entitled "Valuation Assumptions" (page 7 of this case) for assumptions in doing your calculations. Observe that we are valuing the merger using Free Cash Flow to the Firm since VF Corporation discusses their valuation in terms of FCF.

1. Co-movement of Prices for VF Corporation and Nautica (5 points): Plot the daily closing price of VFC against the daily closing price of NAUT starting from May 27, 2003 until August 25, 2003 using the graphing option in Excel. Daily prices for both firms are located in the "NAUT VFC Historical Stock Price" worksheet. Discuss what happens to the price movement of NAUT relative to the price movement of VFC after the announcement of the merger on July 7, 2003. In addition to this, explain why is there a difference between the price of Nautica and the price of VF Corporation once the merger is announced e.g., why doesn't the price of Nautica equal the price of VF Corporation?

2. Cost of Debt (5 points):

- a. Since Nautica does not have any bond rating, use the Altman EM score model to calculate an imputed bond rating for Nautica. Appendix B of this case contains a discussion of the Altman EM score model and how to use it. A template is provided for your Altman EM score calculations in the worksheet named "2. Altman Z-Score (Template)".
- b. Calculate the before tax and after tax cost of debt for Nautica and for VF Corporation using information contained in the worksheets labeled "Bond Spreads" and "Treasury Rates". Moody's rated VF Corporation's long-term debt outstanding A2 at the time of the merger announcement<sup>2</sup>.

3. Present Value of Operating Leases (5 points):

- a. Calculate the present value of the operating leases for Nautica using the information provided in the worksheet labeled "Operating Lease (NAUT)". In addition to this, calculate Nautica's imputed interest on its operating lease. In doing this calculation, year 0 = 2003, year 1 = 2004, and so on.

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<sup>2</sup>Moody's Investors Service announced that it may cut VF's debt ratings because of its plans to buy Nautica "as well as the recently announced softness in VF's core businesses." If a company's ratings are lowered, its cost of borrowing increases.

b. Calculate the present value of the operating leases for VF Corporation using the information provided in the worksheet labeled "Operating Lease (VFC)". In addition to this, calculate VFC's imputed interest on its operating lease. In doing this calculation, year 1 = 2003, year 2 = 2004, and so on. Note: In case you are wondering why we set year 1 = 2003 for VFC while for Nautica we set year 1 = 2004, this is because of when each firm ends its "year" and when each firm pays its operating lease. When this case was written (September 10, 2003), VFC had still not paid its operating lease for 2003 whereas Nautica had.

4. Built-Up Beta: (5 points): Calculate the built-up beta for Nautica and also for VF Corporation using the "Returns" worksheet in your workbook. Use the book value of debt and the market value of equity in calculating the debt-to-equity ratio for the comparable firms (your comparables firms should not include either Nautica or VF Corporation). Round your answer to two decimal places. Use the marginal tax rate for the last twelve months for Nautica (VF) in calculating Nautica's (VF's) built-up beta. The debt for Nautica and VF Corporation should include the present value of operating leases, if any. However, we will not include the present value of operating leases in the debt for the comparable firms<sup>3</sup>. If any cell in a financial statement has an "NA", assume that NA is equal to zero. Do Nautica and VF Corporation have similar built-up levered betas? Are the built-up betas for both firms similar to their historical betas?

5. Cost of equity and weighted average cost of capital (5 points): Calculate the cost of equity for Nautica and also for VF Corporation using their respective built-up betas. Next, calculate the before-tax WACC and also the after-tax weighted average cost of capital for Nautica and VF Corporation using market value weights.

6. Margin analysis (10 points): Do a margin analysis for Nautica and also for VF Corporation using the Margin Analysis worksheets in your workbook. This analysis is a prelude to forecasting the cash flows.

7. Value of each firm without synergies: Standalone valuation (35 points): Calculate the standalone value of Nautica by performing a discounted cash flow valuation on the FCFF:

a. Value of Nautica (Perspective: management of Nautica): Based on the management of Nautica's projections reported in the press and in its 10K which is located in the Valuation Assumptions section of this case, what is the value of the operating assets? What is the value of the firm? What is the justified price per share? Do a sensitivity analysis using the data table command in Excel by completing the one-way table in the worksheet. This sensitivity table shows how the justified price per share for NAUT changes with a change in the assumption regarding varying sales growth relative to WACC and EBITDA multiples. Please observe that in the

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<sup>3</sup>We don't have to include the PV of Operating Leases for our comparable firms because we are trying to calculate the unlevered beta. Next, we will use re-lever this unlevered "imputed" beta for our firms by using their total debt (balance sheet and off-balance sheet debt).

valuation of Nautica from Nautica's perspective, we are using market value weights in calculating their WACC.

b. Value of Nautica (Perspective: management of VF Corporation): Based on the management of VF Corporation's projections for Nautica reported in the press and VF Corporation's 10K, which is located in the Valuation Assumptions section of this case, what is the value of the operating assets? What is the value of the firm? What is the justified price per share? Do a sensitivity analysis using the data table command in Excel by completing the one-way table in the worksheet. This sensitivity table shows how the justified price per share for NAUT changes with a change in the assumption regarding varying sales growth relative to WACC and EBITDA multiples. Please observe that in the valuation of Nautica from VFC's perspective, we are using their reported debt-to-total capital ratio (for purposes of calculating what they used as their WACC weight for debt; the weight for equity is thus  $1 - \text{weight for debt}$ ) which is based on book value. In doing your valuation of Nautica, include in your calculations the buyout of David Chu's right to receive royalties. VF will pay Mr. Chu \$38M (38,000 since your numbers are stated in 000s) upon the closing of the transaction and \$33 million (33,000) on each of the 3rd and 4th anniversaries (year 2006 and year 2007) of the closing of the merger. In addition to this, assume that VF will buyout both Nautica's Chairman, Harvey Sanders, and John Varvatos for \$4.3 million (43,000 since your numbers are stated in 000s) and \$2.5 million (25,000) respectively. VF will also pay approximately \$14.6 million (14,600), net of tax, to cash out employee stock options.

c. Value of VF Corporation (Perspective: management of VF Corporation): Based on the assumptions given in the Valuation Assumptions section of this case, calculate the value of the operating assets, the value of the firm, and the justified price per share for VFC using the FCFF valuation model. Assume that the value of equity options (in 000s) is \$7,724.

8. Cash Flows of the Combined Firm with Synergy (10 points): Calculate the free cash flow (FCFF) of VF Corporation on a post merger basis using the cash flows that you calculated in questions 8.b. and 8.c. above. In addition to this, calculate the terminal value of VFC by taking a weighted average of the TEV/EBITDA multiple of Nautica and VFC using your calculated firm value for Nautica (in question 8.b.) and firm value for VFC (question 8.c.). Assume that cost saving synergies<sup>4</sup>, stated as a percentage of sales (cost savings/sales), will amount to .5% and that the tax rate post merger will be 35% for years 1 through 5 and 37% thereafter.

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<sup>4</sup>At the time this case was written, there were no announcements on anticipated cost savings although there were news stories on the likelihood of cost cutting.

9. Weighted average cost of capital of the Combined Firm (10 points): Calculate the beta of the combined firm using your calculations in questions 8.b. and 8.c. above. Using this new levered beta, calculate the cost of equity for the combined firm. Next calculate the cost of debt<sup>5</sup> and then the weighted average cost of capital on a before-tax WACC and after-tax WACC for the combined firm. The debt for each firm should include the present value of operating leases. Note: The capital structure (debt/equity) of VFC will change post-merger even though the value of the merged firm won't change<sup>6</sup>. In particular, VFC will borrow \$400 million (\$400,000 since we state everything in 000s) in commercial paper (this is a form of short-term debt) to finance the acquisition.

10. Value of the Combined Firm with Synergy (10 points): Calculate the value of the combined firm with cost saving synergies using the valuation template provided. Be sure to adjust your valuation for the payment for Nautica shares and employee stock options of (000s) of \$585,000. Also, make sure to take into account the buyout of David Chu's right to receive royalties. VF will pay Mr. Chu \$38M (38,000 since your numbers are stated in 000s) upon the closing of the transaction and \$33 million (33,000) on each of the 3rd and 4th anniversaries (year 2006 and year 2007) of the closing of the merger. In addition to this, assume that VF will buyout both Nautica's Chairman, Harvey Sanders, and John Varvatos for \$4.3 million (43,000 since your numbers are stated in 000s) and \$2.5 million (25,000) respectively. Assume that the value of VFC's stock options (in 000s) is \$7,724.

What is the firm value and justified price per share of VF Corporation post-merger? How do your justified prices per share compare to the market price of VFC on August 28, 2003 of \$39.12 per share? On July 23, 2003 Lehman projected a target price for VFC (including the NAUT merger) of \$44 per share based on 110.1 million shares (their estimate of shares outstanding). How close was your price to that of Lehman's?

Please turn in a hard copy of your solutions together with your disk showing all your spreadsheet calculations. This is an individual project. As such, anyone caught cheating will be given an F on this assignment.

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<sup>5</sup> We assume that the cost of debt doesn't increase significantly due to how the merger is financed. If it in fact does, then the cost of debt and cost of equity will increase.

<sup>6</sup>The value of the *firm* is independent of how the firm is financed, i.e., a firm that has 50% debt and 50% equity and changes to a 75% debt and 25% equity will have the same value.

## Valuation Assumptions:

Item	Assumption		
TTM or LTM (Trailing twelve months)	Use the last twelve months of data (LTM)/last 4 quarters of data in the 10Q. Remember that only “flow” items are added for the last 4 quarters while only the most current quarter is used for “stock” items.		
Nautica Valuation: perspective of Nautica’s management		Years 1–5	Year 6+
	Annual Growth Rate in Sales	0.5%	7%
	COGS(exclu Depr & Amort)/Sales	55.2%	59%
	SGA/Sales	37.0%	28%
	Depreciation & Amortization/Sales	3.7%	3%
	Capital Expenditures/Sales	3.5%	3%
	Non-cash Working Capital/Net Sales	15.3%	15%
	Marginal tax rate ( $\tau$ )	Calc	38%
	TEV/EBITDA Multiple	8X	8X
	Set the Marginal tax rate for years 1-5 equal to the TTM tax rate. With respect to the after-tax WACC, use your answer for Nautica that you calculated in question #5 for years 1-5 (assume WACC remains constant). For year 6 onwards, assume that Nautica’s beta reverts to one in calculating the after-tax WACC. Assume that the value of equity options (in 000s) is \$4,187.		
Nautica Valuation: perspective of VF Corporation’s management		Years 1–5	Year 6+
	Annual Growth Rate in Sales	0.5%	7%
	Operating Margin (EBIT/Sales)	6.0% <sup>A</sup>	14%
	Depreciation & Amortization/Sales	3.7%	3%
	Capital Expenditures/Sales	3.5%	3%
	Non-cash Working Capital/Net Sales	15.3%	15%
	Marginal tax rate ( $\tau$ )	Calc	38%
	TEV/EBITDA Multiple	8X	8X
	VFC Debt-to-Total Capital Ratio	30%	30%
	The operating margin is assumed to increase by 1% per year from a base of 6% in 2004, i.e., Year1(2004)=6%, Year2(2005) = 7%, Year3(2006)=8%, Year4(2007)=9%, Year5(2008)=10%. We are using VFC's perception of their capital structure (VFC debt-to-total capital ratio is) in this part of the valuation which uses book value weights rather than the academic perception using market value weights to calculate the after-tax WACC under this scenario. For year 6 onwards, assume that Nautica’s beta reverts to one in calculating the after-tax WACC.		

Item	Assumption																								
Nautica Valuation: perspective of VF Corporation's management (continued)	In doing your valuation of Nautica, include in your calculations the buyout of David Chu's right to receive royalties. VF will pay Mr. Chu \$38M (38,000 since your numbers are stated in 000s) upon the closing of the transaction and \$33 million (33,000) on each of the 3rd and 4th anniversaries (year 2006 and year 2007) of the closing of the merger. In addition to this, assume that VF will buyout both Nautica's Chairman, Harvey Sanders, and John Varvatos for \$4.3 million (43,000 since your numbers are stated in 000s) and \$2.5 million (25,000) respectively. VF will also pay approximately \$14.6 million (14,600), net of tax, to cash out employee stock options																								
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Market risk premium	5.5% ( $R_M - r_F$ )																								
Firm's Bond Rating	Use Altman's EM model for Nautica; See Appendix B of this case. For VC Corporation, use Moody's bond rating of A2.																								
Maturity of Long Term Debt	10 years																								
Market Value of Debt	Assume that the Market Value of Debt = Book Value of Debt <sup>7</sup> ; Total debt includes the PV of Operating Leases only for Nautica and VF Corporation.																								

<sup>7</sup>This isn't the case from a theoretical perspective although many analysts make this assumption.

## Appendix: Altman Z-Score Model

There are several versions of the Altman z-score model. We will use the EM version of his model. Professor Edward Altman of NYU developed this model using multiple discriminant analysis in conjunction with financial ratios to predict the probability of business failure leading to bankruptcy.

The EM-score (emerging markets) model is defined as

$$\text{EM Score} = 3.25 + 6.56(X_1) + 3.26(X_2) + 6.72(X_3) + 1.05(X_4)$$

where  $X_1 = \text{Working Capital/Total Assets} = (\text{Current Assets} - \text{Current Liabilities})/\text{TA}$   
 $X_2 = \text{Retained Earnings/Total Assets}$   
 $X_3 = \text{EBIT/Total Assets}$   
 $X_4 = \text{Book Value of Equity/Total Liabilities}$

Bond Rating	Altman Z-Score	Bond Rating	Altman Z-Score
AAA	8.15	BB+	5.25
AA+	7.60	BB	4.95
AA	7.30	BB-	4.75
AA-	7.00	B+	4.50
A+	6.85	B	4.15
A	6.65	B-	3.75
A-	6.40	CCC+	3.20
BBB+	6.25	CCC	2.50
BBB	5.85	CCC-	1.75
BBB-	5.65	D	0.00



Ed Altman, NYU