TO SELL OR NOT TO SELL? A CASE ON BUSINESS VALUATION

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CASE DESCRIPTION

The purpose of this case is to explore the financial challenges faced by corporate executives about determining the intrinsic value of a company when making merger and acquisition (M&A) decisions. It is designed to be used with the textbook of Koller, Goedhart & Wessels (2015) and is best suited for discussions in a capstone financial policy and strategy course and other courses such as business valuation and student-managed investment funds at both undergraduate and graduate levels. The case can be discussed in two class periods and will require 4~5 hours of outside preparation by students. In the first class period, the instructor could review various business valuation models and discuss this case in the second class period. Upon completion of the case, students will understand the valuation procedures by using Excel to calculate the intrinsic value per share of a company's common stock and to make rational corporate M&A decisions based on both discounted cash flow (DCF) and relative valuation models. Another merit of this case is that the forecast of financial metrics for the next ten years is provided, which allows students to focus on the valuation process rather than on the forecasting process.

CASE SYNOPSIS

Schumacher, a publicly-listed athletic-shoe and apparel retailer, received a tender offer from a private equity firm. The cash offer represents a 45.57% premium above the prevailing market price. Facing the imminent challenge from the seemingly formidable online shopping trend, Schumacher has not experienced a consistent double-digit growth during the past three years. Receiving a lofty tender offer has further presented a dilemma to the board of directors: Whether to sell or not to sell Schumacher to the private equity firm. To help the board make the best decision, Austen Johnson, the president's special assistant and a recent MBA graduate was instructed to conduct an internal study to determine the intrinsic value of Schumacher's common shares.

INTRODUCTION

Schumacher (the Company hereafter), a publicly traded company, is a global-leading athletically inspired shoes and apparel retailer with over 3,000 athletic retail stores by the end of 2013 under different brand names in North America, Europe and Australia. The Company also operates a direct-to-customer business, offering athletic footwear, apparel and equipment through its internet, mobile and catalog channels.

The Company was founded in the late 1800s as one of the first US companies to allow customers to handle and select merchandise without a sales clerk. In the early 1900s, when it grew to a nationwide retailer, it became a publicly traded company with about 600 stores and half

a million dollars in sales.

In the 1960s, the Company started an aggressive expansion plan by acquiring family shoe store chains in the US. and overseas. A few years later, the Company made its foresighted decision by opening athletic-shoe retail stores, which would later prove highly successful and profitable. As of December 31, 2013, the Company operated over 3,000 stores throughout the world. The United States, as the key and critical market for the Company, accounts for 75% of its total stores, followed by Europe with 18% of stores which would shortly increase after implementing an aggressive plan to further grow its business in Germany through acquisitions. The rest of the markets are Canada with 4% and Australia with 3%, respectively.

Currently, Schumacher is one of the largest specialty athletic retailers in the world. Its major lines of business are shoes and clothing for men, women and children. Shoes can be categorized into athletic footwear, boots and casual shoes, whereas under clothing products, there are athletic and casual clothing. In addition, the Company also sells accessories that include, but not limited to, backpacks, belts, hats and socks.

Tables 1 & 2 present Schumacher's income statements and balance sheets, respectively and their corresponding common-size analyses over the past five years. Its fiscal year ends on December 31.

Table 1
SCHUMACHER'S HISTORICAL AND COMMON-SIZE (AS % OF SALES) INCOME STATEMENT 2009-2013

In millions	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Sales	5,237	4,854	5,049	5,623	6,182	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales	3,777	3,522	3,533	3,827	4,148	72.1%	72.6%	70.0%	68.1%	67.1%
Gross profit	1,460	1,332	516	1,796	2,034	27.9%	27.4%	30.0%	31.9%	32.9%
Operating expenses	1,304	1,262	1,263	1,361	1,424	24.9%	26.0%	25.0%	24.2%	23.0%
Operating income (EBIT)	156	70	253	435	610	3.0%	1.4%	5.0%	7.7%	9.9%
Interest expense	16	10	9	6	11	0.3%	0.2%	0.2%	0.1%	0.2%
Other income (expense)	(241)	14	13	6	8	-4.6%	0.3%	0.3%	0.1%	0.1%
Income before taxes	(101)	74	257	435	607	-1.9%	1.5%	5.1%	7.7%	9.8%
Income taxes	(21)	26	88	157	210	-0.4%	0.5%	1.7%	2.8%	3.4%
Net income	(80)	48	169	278	397	-1.5%	1.0%	3.4%	4.9%	6.4%
Earnings per share	(0.52)	0.31	1.08	1.82	2.63					
Shares outstanding	154	156	156	153	151					
Average tax rate	20.8%	35.1%	34.2%	36.1%	34.6%					

RECEIVING AN OFFER

On January 2, 2014, Schumacher received a cash offer from a private equity firm for $50 per share, which represents a 45.57% premium above the closing market price of $34.35 on December 31, 2013. Schumacher's stock price had just tripled from $11.29 to its current level during the past three years with a compound annual return of 44.90%. Over the same period, the compound annual return for the S&P 500 Index was 16.07%, but Schumacher's compound annual sales growth rate was only 8.40%. During the past several years, Schumacher can be described as riding a roller coaster as its business has been going up and down significantly. It underwent a disappointing year in 2010 with a 7.31% sales decline and rebounded with 11.37% sales growth in 2012 and 9.94% growth in 2013.

Table 2
SCHUMACHER'S HISTORICAL AND COMMON-SIZE (AS % OF SALES) BALANCE SHEETS 2009-2013

In millions	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Current assets										
Cash and cash equivalents	385	582	696	851	880	7.4%	12.0%	13.8%	15.1%	14.2%
Short-term investments@	23	7	0	0	48	0.4%	0.1%	0.0%	0.0%	0.8%
Receivables	60	37	41	50	68	1.2%	0.8%	0.8%	0.9%	1.1%
Inventories	1,120	1,037	1,059	1,069	1,167	21.4%	21.4%	21.0%	19.0%	18.9%
Other current assets	176	109	138	109	200	3.3%	2.2%	2.7%	2.0%	3.2%
Total current assets	1,764	1,772	1,934	2,079	2,363	33.7%	36.5%	38.3%	37.0%	38.2%
Non-current assets										
Property, plant and equipment, gross	1,261	1,527	1,525	1,562	1,651	24.1%	31.5%	30.2%	27.8%	26.7%
Accumulated depreciation	(829)	(1,140)	(1,139)	(1,135)	(1,161)	(15.8%)	(23.5%)	(22.5%)	(20.2%)	(18.8%)
Property, plant and equipment, net	432	387	386	427	490	8.3%	8.0%	7.7%	7.6%	7.9%
Goodwill	144	145	145	144	145	2.8%	3.0%	2.9%	2.56%	2.4%
Intangible assets	113	99	72	54	40	2.2%	2.0%	1.4%	1.0%	0.6%
Long-term investments@	424	413	359	346	329	8.0%	8.5%	7.1%	6.1%	5.3%
Total non-current assets	1,113	1,044	962	971	1,004	21.2%	21.5%	19.1%	17.3%	16.2%
Total assets	2,877	2,816	2,896	3,050	3,367	54.9%	58.0%	57.4%	54.3%	54.4%
Current liabilities										
Accounts payable	187	215	223	240	298	3.6%	4.4%	4.4%	4.3%	4.8%
Accrued liabilities	231	218	266	308	338	4.4%	4.5%	5.3%	5.5%	5.5%
Total current liabilities	418	433	489	548	636	8.0%	8.9%	9.7%	9.8%	10.3%
Noncurrent liabilities										
Long-term debt	142	138	137	135	133	2.7%	2.8%	2.7%	2.4%	2.1%
Other long-term liabilities	393	297	245	257	221	7.5%	6.1%	4.9%	4.6%	3.6%
Total non-current liabilities	535	435	382	392	354	10.2%	8.9%	7.6%	7.0%	5.7%
Total liabilities	953	868	871	940	990	18.2%	17.8%	17.3%	16.8%	16.0%
Stockholders' equity										
Common stock	691	709	735	779	856	13.2%	14.6%	14.6%	13.9%	13.8%
Retained earnings	1,581	1,535	1,611	1,788	2,076	30.2%	31.6%	31.9%	31.8%	33.6%
Treasury stock	(102)	(103)	(152)	(253)	(384)	-2.0%	-2.1%	-3.0%	-4.5%	-6.2%
Accumulated comprehensive income	(246)	(193)	(169)	(204)	(171)	-4.7%	-4.0%	-3.4%	-3.5%	-2.8%
Total equity	1,924	1,948	2,025	2,110	2,377	36.7%	40.1%	40.1%	37.5%	38.4%
Total liabilities & equity	2,877	2,816	2,896	3,050	3,367	54.9%	58.0%	57.4%	54.3%	54.4%

@ Denotes non-operating assets

Encountered with the fluctuating results mentioned above, Schumacher's board of directors was presented with a dilemma: whether to sell or not to sell the Company to the private equity firm. To help the board make the best decision, Austen Johnson, the president's special assistant and a recent MBA graduate was instructed to conduct an internal study to determine the intrinsic value of the Company's common shares.

Austen Johnson is a strong believer of value-based management (VBM), which is a management approach that ensures corporations are run consistently on value, i.e., creating value,

managing for value and measuring value. Generally speaking, the value of a company is determined by its discounted future cash flows. Value is created only when a company invests in projects with a positive net present value, which means that the return on capital must exceed the cost of capital. VBM extends these concepts by focusing management decision making on the key drivers of value. To focus more directly on value creation, companies should set goals in terms of discounted cash flow value, the most direct measure of value creation. Koller et al. (2015) have shown that a company's value is related to the fundamental drivers of economic value such as sales growth, free cash flow (FCF) and return on invested capital (ROIC). Understanding how these drivers behaved in the past will significantly help a company make more reliable estimates of future cash flow (Damodaran, 2012).

Austen Johnson first requested Schumacher' Accounting Department to provide him with the Company's various valuation metrics of the last five years, which are presented in Table 3. After evaluating the Company's historical financial performance, Austen Johnson decided to apply three discounted cash flow (DCF) models outlined in Koller et al. (2015): the enterprise DCF (EDCF) model, the discounted economic profit (DEP) model and the adjusted present value (APV) model. According to Koller et al. (2015), the EDCF model remains a favorite of both academics and practitioners because it relies solely on cash flows rather than on accounting-based earnings, the DEP model is becoming more popular as it highlights whether a company is creating value over time as evidenced by economic profit generated by the company and the APV model highlights changing capital structure more easily than the previous two models.

DCF-based models are welcomed by practitioners. In a recent survey of the CFA Institute's members conducted by Pinto, Robinson & Stowe (2015), 78.8% of the 1,980 survey respondents reported using DCF-based models in 59.5% of their valuation cases.

Table 3
SCHUMACHER'S VALUATION METRICS 2009-2013

*In millions	2009	2010	2011	2012	2013
Sales growth rate	-3.68%	-7.31%	4.02%	11.37%	9.94%
NOPLAT*	123.24	45.07	166.37	278.00	398.96
Invested capital (IC)*	2,012	1,963	2,048	2,156	2,354
Free cash flow (FCF)*	372.24	147.07	105.37	135.00	233.96
ROIC	5.05%	2.24%	8.48%	13.57%	18.50%

There is a four-step process when valuing a company's common equity based on the EDCF model. First, calculate the company's value of operations by discounting free cash flows at the weighted average cost of capital (WACC). Second, adding the value of operations with the value of non-operating assets such as short-term and long-term investments yields the enterprise value. Third, subtract the value of debt and non-equity claims, such as short-term debt, long-term debt, other long-term debt, pension liabilities, etc., from the enterprise value to get the value of common equity. Finally, the value of common equity is divided by the number of common shares outstanding to derive the intrinsic value per share.

As free cash flow provides little insight into the company's economic performance, economic profit highlights how and when the company creates value. The procedural difference between the DEP model and the EDCF model in the four-step valuation process lies in the first step, where the value of operations for the DEP model is the sum of the beginning-of-year invested capital plus future economic profits discounted at the WACC. The next three steps are the same for both models.

Table 4
FORMULAS FOR EDCF, DEP AND APV MODELS*

EDCF Model[1]:

$$VO=\sum_{t=1}^{10}\frac{FCF_t}{(1+WACC)^t}+\frac{CV_{10}}{(1+WACC)^{10}}$$

$$CV_{10}=\frac{NOPLAT_{10}(1+g)[1-\frac{g}{RONIC}]}{(WACC-g)}$$

Where VO = value of operations; FCF_t = free cash flow in year t; WACC = weighted average cost of capital; CV_{10} = continuing value in year 10; $NOPLAT_{10}$= net operating profit less adjusted taxes in year 10; g = expected growth rate of NOPLAT in perpetuity; and RONIC = expected rate of return on new invested capital.

DEP Model[2]:

$$EP_t = \text{Invested Capital}_{t-1} \text{ x } (ROIC_t\text{-WACC})$$

$$VO=IC_0+\sum_{t=1}^{10}\frac{EP_t}{(1+WACC)^t}+\frac{CV_{10}}{(1+WACC)^{10}}$$

$$CV_{10}=\frac{EP_{10}(1+g)}{WACC}+\frac{NOPLAT_{10}(1+g)\frac{g}{RONIC}(RONIC\text{-}WACC)}{WACC(WACC-g)}$$

Where EP_t = economic profit in year t; $ROIC_t$ = return on invested capital in year t; WACC = weighted average cost of capital; VO = value of operations; IC_0 = Invested capital at time 0; CV_{10} = continuing value in year 10; $NOPLAT_{10}$ = net operating profit less adjusted taxes in year 10; g = expected growth rate of NOPLAT in perpetuity; and RONIC = expected rate of return on new invested capital.

APV Model[3]:

$$VO=\sum_{t=1}^{10}\left[\frac{FCF_t}{(1+Ku)^t}+\left(\frac{ITS_t}{(1+Ku)^t}\right)\right]+\frac{CV_{10}}{(1+Ku)^{10}}$$

$$CV_{10}=CV_{10}(FCF)+CV_{10}(ITS) = \text{EDCF model's } CV_{10}$$

Where VO = value of operations; FCF_t = free cash flow in year t; ITS_t = interest tax shields in year t; Ku = the unlevered cost of equity; and CV_{10} = continuing value in year 10, where the CV_{10} in the APV model is equal to the CV_{10} in the EDCF model if the capital structure is assumed to be constantly going forward.

* A half-year adjustment as shown in Koller et al. (2015) is not applied to the present value for the above three DCF models because Schumacher is in retail whose business depends on year-end holidays so its cash flows will be more heavily weighted toward the latter half of the year.

The APV model follows Modigliani & Miller's (1963) trade-off theory of leverage in which the tax benefit from interest payments is recognized because interests paid on debts are tax deductible. Procedure-wise, the APV model differs from the above two WACC-based DCF models by separating the value of operations into two components: the value of operations as if the firm were all equity-financed and the present value of tax shields. After deriving the value of operations, the last three steps are the same as in the above two models.

In summary, the value of operations consists of the present value of cash flows measured as free cash flows, economic profits or interest tax shields during the 10-year forecast period and

the present value of a perpetuity-based continuing value after the 10-year forecast period. The formulas for the above three DCF models are presented in Table 4. Please refer to Chapter 6 "Frameworks for Valuation" of the textbook of Koller et al. (2015) to get a more narrative explanation of the formulas.

Table 5
FORECASTED VALUE DRIVERS FOR THE NEXT 10 YEARS

*In millions	2014E t=1	2015E t=2	2016E t=3	2017E t=4	2018E t=5	2019E t=6	2020E t=7	2021E t=8	2022E t=9	2023E t=10
NOPLAT*	434.87	460.96	488.62	517.94	549.01	576.46	605.29	35.55	654.62	674.25
Invested capital*	2,565.86	2,707.71	2,858.08	3,017.46	3,186.41	3,335.65	3,492.35	3,656.88	3,760.54	3,867.31
ROIC	18.47%	17.97%	18.05%	18.12%	18.19%	18.09%	18.15%	18.20%	17.90%	17.93%
Free cash flow*	207.62	307.92	326.40	345.98	366.74	415.46	436.23	458.04	542.79	559.07
Interest tax shields*	8.72	9.25	9.81	10.40	11.02	11.68	12.27	12.88	13.52	13.93

Table 6
OTHER VALUATION METRICS

Expected growth rate of NOPLAT (g)	3.00%
Expected rate of return on newly invested capital (RONIC)	13.00%
Weighted average cost of capital (WACC)	8.49%
The unlevered cost of equity (Ku)	8.66%

Table 7
RELATIVE VALUATION METRICS (MULTIPLES) FOR SCHUMACHER AND TWO COMPETITORS

	P/B	P/E	P/S	EV/EBITDA
	Based on stock price of $34.35 on 12/31/2013			
Schumacher	2.70	13.1	0.84	6.97
Competitor 1	2.62	16.2	0.90	6.85
Competitor 2	2.58	15.5	1.02	8.39
	Based on the offer price of $50			
Schumacher	3.92	19.0	1.22	10.79

After analysing Schumacher's historical financial statements and consulting with the management on the Company's future strategic plans, Austen Johnson forecasted the Company's pro forma financial statements and some pertinent valuation metrics for the next 10 years. Table 5 presents net operating profits less adjusted taxes (NOPLAT), invested capital (IC), return on invested capital (ROIC), free cash flow (FCF) and interest tax shields (ITS) over the next 10 years. In addition, the expected growth rate of NOPLAT (g) in perpetuity after the explicit 10-year forecast period, the expected rate of return on newly invested capital (RONIC) and the Company's WACC and the unlevered cost of equity (Ku) are provided in Table 6. The choice of RONIC should be consistent with the Company's expected competitive conditions during the perpetual period, i.e., RONIC should fall between WACC and ROIC. RONIC equals WACC for most firms when competition will drive off abnormal returns, whereas RONIC is close to ROIC during the later years of the explicit forecast period for companies with sustainable competitive advantages. Because Schumacher has long been the industry leader, Austen Johnson decides to set the Company's RONIC at 13%, the mid-point between ROIC and WACC.

In relative valuation, the value of an asset is compared to the values assessed by the market for similar or comparable assets. Relative valuation generally requires less information than discounted cash flow valuation, especially when multiples are used as screens, according to Damodaran (2012). The asset's price can be standardized using a common variable, such as earnings, cash flow, book value, or sales. There are many comparable multiples available for relative valuation, such as P/E (price to earnings), P/S (price to sales), P/B (price to book value), EV/EBITDA (enterprise value to earnings before interest, taxes, depreciation, and amortization), etc. Austen Johnson also collected various relative valuation metrics (multiples) for Schumacher and its top two competitors as of December 31, 20134, which are presented in Table 7.

Table 8
VALUATION OF THE ENTERPRISE DISCOUNTED CASH FLOW (EDCF) MODEL

t	Forecast year	FCF* or CV*	Discount factor	Present value*
1	2014			
2	2015			
3	2016			
4	2017			
5	2018			
6	2019			
7	2020			
8	2021			
9	2022			
10	2023			
11	Continuing value* (CV)			
=	Value of operations (sum of present value of cash flows)*			
+	Value of nonoperating assets*			
=	Enterprise value*			
−	Value of debt*			
=	Value of common equity*			
÷	Number of shares outstanding*			
=	Intrinsic value per share			

Table 9
VALUATION OF THE DISCOUNTED ECONOMIC PROFIT (DEP) MODEL

t	Forecast Year	Invested capital*	ROIC	Economic profit* or CV*	Discount factor	Present value*
1	2014					
2	2015					
3	2016					
4	2017					
5	2018					
6	2019					
7	2020					
8	2021					
9	2022					
10	2023					
10	Continuing value* (CV)					

Table 9
VALUATION OF THE DISCOUNTED ECONOMIC PROFIT (DEP) MODEL

	Present value of economic profit*	
+	Invested capital in 2013*	
=	Value of operations*	
+	Value of nonoperating assets*	
=	Enterprise value*	
−	Value of debt*	
=	Value of common equity*	

* In millions

Table 10
VALUATION OF THE ADJUSTED PRESENT VALUE (APV) MODEL

t	Forecast Year	Free cash flow (FCF)*	Interest tax shields (ITS)*	Discount factor	Present value of FCF*	Present value of ITS*
1	2014					
2	2015					
3	2016					
4	2017					
5	2018					
6	2019					
7	2020					
8	2021					
9	2022					
10	2023					
10	Continuing value* (CV)					
=	Value of operations* (sum of PV of FCF and PV of ITS)					
+	Value of nonoperating assets*					
=	Enterprise value*					
−	Value of debt*					
=	Value of common equity*					
÷	Number of shares outstanding*					
=	Intrinsic value per share					

* In millions

CASE QUESTIONS

1. Name a few discounted cash flow (DCF) models and relative valuation models (multiples) and discuss pros and cons of each model.
2. What is the intrinsic value of Schumacher's common stock per share using the Enterprise Discounted Cash Flow (EDCF) model as shown in Table 8?
3. What is the intrinsic value of Schumacher's common stock per share using the Discounted Economic Profit (DEP) model as shown in Table 9?
4. What is the intrinsic value of Schumacher's common stock per share using the Adjusted Present Value (APV) model as shown in Table 10?
5. Based on relative valuation metrics as shown in Table 7, is the cash offer from the private equity firm acceptable?
6. What should Austen Johnson recommend to Schumacher's Board of directors?

ENDNOTES

1. The narrative explanation of the EDCF model is presented in Koller et al. (2015), pp. 105-107.
2. The narrative explanation of the DEP model is presented in Koller et al. (2015), pp. 119-120.
3. The narrative explanation of the APV model is presented in Koller et al. (2015), pp. 121-123.
4. Retrieved from https://sentieo.com/ on December 1, 2017.

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