

FIN 521: MIL Exercise

Due on Friday, March 30, 2018

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Part 1

I chose PEPSICO INC. which is famous multinational food, snack, and beverage corporation. Most of data used in evaluating share price is come from CapitalIQ, and if data which is necessary to evaluate stock price is unobserved, it is estimated by myself.

- a) I collected analyst's forecast of sales revenue of PepsiCo over next seven years. Table 1 shows the estimated revenue. Estimated revenue grows moderately.
- b) Analyst's forecast data of company's EBITDA from FY2018 to FY2022 is collected from CapitalIQ, and since the average EBITDA growth is about 6% per year, I assumed that EBITDA will grow at 6% over the last 2 years. Table 1 shows the estimated EBITDA. Using this data, EBITDA/Sales margin was calculated. Table 2 shows estimated EBITDA/Sales margin.
- c) In order to estimate free cash flow, estimation for EBIT is needed first. As mentioned above, EBITDA was estimated by using analyst's forecast and by estimation of growth. Depreciation and amortization is estimated by estimating depreciation margin which is (Depreciation / Sales Revenue). Depreciation margin is estimated by averaging past 3 years' margin, and is assumed constant over 7 years. The margin was calculated as 3.44%. Tax rate used for calculating tax affected EBIT is 21%. Changes in net working capital is estimated by estimating days in receivables, inventory, payables and others. They were estimated by averaging past 3 years' data and were assumed to be constant over 7 years. Table 3 shows estimated days of each account. Capital expenditure is estimated by estimating CapEx margin, which was calculated by averaging past 3 year's data. From the procedure, free cash flow was calculated as Table 1.
- d) Since the food, snack and beverage industry is matured enough, it does not seem that the company will grow fast. Therefore, it is reasonable to assume that long run growth rate of free cash flow will be stable. Therefore, I chose the appropriate long run growth rate as 2%.
- e) In order to calculate WACC of PepsiCo, cost of equity and cost of debt was calculated first. Using CapitalIQ's data, equity beta of the company is estimated as about 0.7. Since the given risk-free rate and market risk premium is 2% and 5%, respectively, using CAPM, cost of equity of the firm is calculated as $2\% + 0.7 \times 5\% = 5.53\%$. (Equity beta is slightly larger than 0.7 in actual.) Since the credit rating of the firm is A+, debt beta is estimated as 0.05. Then by using CAPM, cost of debt is calculated as 2.25%. Applying tax benefit to cost of debt, after tax cost of debt is calculated as 1.78%. From the balance sheet of the firm, proportion of equity financing is about 80.27%, and proportion of debt financing is about 19.73%. Using this data, WACC of the firm is calculated as 4.79%.

f)

g)

| | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2024 |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|
| Revenues | 65,373 | 67,472 | 69,619 | 71,229 | 73,403 | 77,621 | 80,373 |
| Gross Profit | 35,782 | 36,931 | 38,105 | 38,987 | 40,176 | 42,485 | 43,992 |
| EBITDA | 13,627 | 14,402 | 15,129 | 16,286 | 17,188 | 18,219 | 19,312 |
| Depreciation/Amortization | 2,248 | 2,321 | 2,394 | 2,450 | 2,525 | 2,670 | 2,764 |
| Operating Income | 11,378 | 12,081 | 12,735 | 13,836 | 14,663 | 15,550 | 16,548 |
| Taxes | 2,389 | 2,537 | 2,674 | 2,906 | 3,079 | 3,265 | 3,475 |
| Tax Affected EBIT | 8,989 | 9,544 | 10,060 | 10,931 | 11,584 | 12,284 | 13,073 |
| Depreciation/Amortization | 2,248 | 2,321 | 2,394 | 2,450 | 2,525 | 2,670 | 2,764 |
| Changes in Working Capital | 382 | (6) | (6) | (5) | (6) | (12) | (8) |
| Capital Expenditures | (3,026) | (3,124) | (3,223) | (3,298) | (3,398) | (3,593) | (3,721) |
| Unlevered Free Cash Flow | 8,593 | 8,735 | 9,226 | 10,078 | 10,704 | 11,348 | 12,109 |

Table 1: Estimated Income Statement and Expected Cash Flow

| | FY2018 | FY2019 | FY2020 | FY2021 | FY2022 | FY2023 | FY2024 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Sales Growth | 2.91% | 3.21% | 3.18% | 2.31% | 3.05% | 5.75% | 3.55% |
| Gross Margin | 54.73% | 54.73% | 54.73% | 54.73% | 54.73% | 54.73% | 54.73% |
| EBITDA Margin | 20.84% | 21.34% | 21.73% | 22.86% | 23.42% | 23.47% | 24.03% |
| Depreciation Margin | 3.44% | 3.44% | 3.44% | 3.44% | 3.44% | 3.44% | 3.44% |
| CapEx Margin | 4.63% | 4.63% | 4.63% | 4.63% | 4.63% | 4.63% | 4.63% |

Table 2: Estimated Margins

h)

Part 2

a)

b)

Part 3**Part 4**

| | FY2015 | FY2016 | FY2017 | Average |
|-------------------|--------|--------|--------|---------|
| Days in AR | 37 | 39 | 40 | 39 |
| Days in Inventory | 35 | 35 | 37 | 36 |
| Prepaid Days | 14 | 11 | 19 | 19 |
| Days in AP | 70 | 80 | 85 | 85 |
| Days in Accruals | 52 | 55 | 53 | 53 |

Table 3: Estimated days