Forecasting

Financial Planning Process

1. Forecast financial statements under alternative operating plans.
2. Determine amount of capital needed to support the plan.
3. Forecast the funds that will be generated internally and identify sources from which required external capital can be raised.

The Plan

- Two methods of forecasting external financing needs:
  - The ________________
  - Forecasted (pro forma) _____________ _____________

Key Factors

- Sales growth: The higher sales growth is, the _________ external financing needs will be, other things held constant. (ΔS)
- Capital intensity ratio: The higher the capital intensity ratio, the _______ external financing needs will be, other things held constant.
- Spontaneous-liabilities-to-sales ratio: The higher the firm's spontaneous liabilities, the __________ external financing needs will be, other things held constant.

Key Factors
(Continued)

- Profit margin: The higher the profit margin, the __________ external financing needs will be, other things held constant.
- Dividend payout ratio: The lower the payout ratio, the ____________ external financing needs will be, other things held constant. (Dividends/Net Income)

External Financing Needed (EFN)

External Financing Needed = Required increase in assets – Increase in spontaneous liabilities – Increase in retained earnings

$$EFN = \left(\frac{Assets}{Sales}\right)\Delta S - \left(\frac{Spontaneous\ Liabilities}{Sales}\right)\Delta S - \left[\left(\frac{Net\ Income}{Sales}\right) \times \left(\frac{Projected}{Sales}\right) \times \left(1 - \frac{Dividends}{Net\ Income}\right)\right]$$

EFN Example

- Yostmeister, Inc. was operating at full capacity last year. Sales are expected to increase by 15% over the next year, while the capital intensity ratio, spontaneous-liabilities-to-sales ratio, profit margin, and payout ratio will all remain the same. Calculate Yostmeister's external financing needed for next year.

Yostmeister, Inc.
Balance Sheet
December 31, 2018
(in $ millions)

Cash and securities	$ 20	Accounts pay. & accruals	$ 100
Accounts receivable	$ 290	Notes payable	$ 80
Inventories	$ 390	Total current liabilities	$ 180
Total current assets	$ 700	Long-term debt	$ 520
Gross fixed assets	$ 800	Total liabilities	$ 700
less depreciation	$ 300	Common stock	$ 300
Net fixed assets	$ 500	Retained earnings	$ 200
Total assets	$1,200	Total common equity	$ 500
		Total liabilities & equity	$ 1,200

Yostmeister, Inc.
Income Statement
For the Year Ended December 31, 2018
(in $ millions)

Sales	$ 2,000
Total operating costs	$ 1,900
EBIT	$ 100
Interest	$ 60
EBT	$ 40
Taxes (40%)	$ 16
Net income	$ 24
Dividends	$ 9
Addition to retained earnings	$ 15
Shares outstanding	10
EPS	$ 2.40
DPS	$ 0.90
Year-end stock price	$ 24.00

External Financing Needed (EFN)

External Financing Needed	=	Required increase in assets	–	Increase in spontaneous liabilities	–	Increase in retained earnings

$$EFN = \left(\frac{Assets}{Sales}\right)\Delta S - \left(\frac{Spontaneous\ Liabilities}{Sales}\right)\Delta S - \left[\left(\frac{Net\ Income}{Sales}\right) \times \left(\frac{Projected}{Sales}\right) \times \left(1 - \frac{Dividends}{Net\ Income}\right)\right]$$

Internal Growth Rate

- The internal growth rate is the maximum growth rate the firm could achieve with ______ additional external financing.

$$\text{Internal Growth Rate} = \frac{ROA \times \left(1 - \frac{Dividends}{Net\ Income}\right)}{1 - \left[ROA \times \left(1 - \frac{Dividends}{Net\ Income}\right)\right]}$$

Sustainable Growth Rate

- The sustainable growth rate is the maximum growth rate the firm could achieve while maintaining a constant ______________________.

$$\text{Sustainable Growth Rate} = \frac{ROE \times \left(1 - \frac{Dividends}{Net\ Income}\right)}{1 - \left[ROE \times \left(1 - \frac{Dividends}{Net\ Income}\right)\right]}$$

Calculate the internal growth rate and sustainable growth rate for Yostmeister, Inc.

The Plan

- Two methods of forecasting external financing needs:
  - The formula
  - Forecasted (pro forma) financial statements

Forecasted (Pro Forma) Financial Statements

- The firm is operating at full capacity. Operating ratios remain unchanged. In other words, the ratios of assets, costs, expenses, and depreciation to sales are expected to remain constant, as is the ratio of accounts payable and accrued expenses to assets.
- No additional notes payable, LT bonds, or common stock will be issued. The interest rate on all debt is 10%. Interest expense is expected to remain the same for the forthcoming year
- If additional financing is needed, then it will be raised through a line of credit. The line of credit will be tapped on the last day of the year, so there will be no additional interest expenses due to the line of credit.
- If surplus funds are available, the surplus will be paid out as a special dividend payment.
- Regular dividends (dollar amount) will grow by 15%. Sales will grow by 15%.

Yostmeister, Inc.
Forecasted Balance Sheet
December 31, 2019
(in $ millions)

Cash and securities		Accounts pay. & accruals	
Accounts receivable		Notes payable	
Inventories		Line of credit (EFN)	
Total current assets		Total current liabilities	
Gross fixed assets		Long-term debt	
less depreciation		Total liabilities	
Net fixed assets		Common stock	
Total assets		Retained earnings	
		Total common equity	
		Total liabilities & equity	

Yostmeister, Inc.
Forecasted Income Statement
For the Year Ended December 31, 2019
(in $ millions)

Sales	
Total operating costs	________
EBIT	
Interest	________
EBT	
Taxes (40%)	________
Net income	________
Dividends	
Addition to retained earnings	
Shares outstanding	10
EPS	
DPS	

Forecasting Feedback

- Additional interest from line of credit
- When financing cost are included:
  - Net income __________
  - Addition to retained earnings __________
  - Balance sheet no longer balances
  - __________ financing is needed
  - The process repeats

Chapter 3 Suggested Problems

- Concept Questions
  - 5 and 7

- Questions and Problems
  - 4 (use pro forma), 5 (think growth rates, not EFN), 6, 9 (use formula for part b and pro forma for part c), 13 (use formula for part a and pro forma for part b), and 21 (use pro forma)