

**Practice Problems for Classes 4 & 5: Financial Planning Models**

**Question 1.** Carefully explain what a firm’s external financing need (EFN) for next year is. As part of your answer, write an equation that would allow you to calculate EFN using accounting data for the current year. Interpret all of its terms.

**Question 2.** How does a firm’s external financing need vary with the proposed growth rate for each year? Why? What is the main constraint in choosing a firm’s growth rate?

**Question 3.** What are the assumptions we used to derive formulas for the internal growth rate and sustainable growth rates? Write a firm’s external financing need under those simplifying assumptions and explain its terms.

**Question 4.** What happens with the internal growth rate and the sustainable growth rate if:

- i) ROA and ROE decrease?
- ii) the retention ratio increases
- iii) ROA and ROE increase buy the retention ratio decreases?

**Question 5.** Consider the following accounting information for Seagate Corp., which corresponds to the fiscal year ending in December 2012.

**Seagate Corp - Balance Sheet as of December 2012**

<b>Assets:</b>	<b>2012</b>	<b>Liabilities &amp; Equity:</b>	<b>2012</b>
Cash	350.0	Accounts payable	650.0
Accounts receivable	700.0	Notes payable	300.0
Inventory	900.0	Current liabilities	950.0
Current assets	1,950.0	Long-term debt	1,900.0
Net fixed assets	4,500.0	Common stock	1,600.0
		Retained earnings	2,000.0
		Total equity	3,600.0
<b>Total assets</b>	<b>6,450.0</b>	<b>Total liabilities and equity</b>	<b>6,450.0</b>

**Seagate Corp - Income Statement for 2012**

	<b>2012</b>
Sales	9,000.0
COGS (70% of sales)	6,300.0
Operating expenses	600.0
EBIT	2,100.0
Interest expense	350.0
Taxable income	1,750.0
Tax (40% tax rate)	700.0
Net income	1,050.0
Dividend (1/3 of NI)	350.0
Addition to retained earnings	700.0

Seagate’s management is planning its growth for 2013. Managers want to build pro-forma financial statements for 2013 under a proposed sales growth rate of 30%. They believe the firm’s cost structure will remain the same as a percentage of sales, operating expenses will grow 15%, interest expenses will be 8% of beginning notes payable plus long-term debt, the tax rate will remain at 40%, and the dividend payout ratio will remain unchanged. Currently, Seagate is operating at full capacity.

- a) What is Seagate’s external financing need in 2013 if it is going to grow 30%?
- b) What are the options Seagate faces in covering its external financing needs?
- c) Choose a financing strategy that you deem appropriate, and complete the pro-forma balance sheet and income statement for 2013.
- d) Suppose that Seagate can raise up to \$300 in additional notes payable to the bank, but cannot issue long-term debt or equity. What are management’s options?
- e) Suppose now that Seagate is operating at 70% of its installed productive capacity.
  - i) What are Seagate’s potential sales if it operates at full capacity?
  - ii) What is Seagate’s external financing need in 2013 if it is going to grow 30%?
  - iii) Choose a financing strategy that you deem appropriate, and complete the pro-forma balance sheet and income statement for 2013.

**Question 6.** Consider the following accounting information for HomeNet (HN) corresponding to the end of its most recent fiscal year end (December 2012).

<b>Home Net's Balance Sheet as of Dec 2012</b>		
	<b>2011</b>	<b>2012</b>
<b>Assets</b>		
Current assets	448.0	504.4
Fixed assets	932.8	950.0
<b>Total assets</b>	<b>1380.8</b>	<b>1454.4</b>
<b>Liabilities and shareholders' equity</b>		
Current liabilities	100.0	111.7
Long-term debt	771.5	682.3
Common stock	459.0	497.0
Retained earnings	50.3	163.4
<b>Total liabilities and shareholders' equity</b>	<b>1380.8</b>	<b>1454.4</b>

**Home Net's Income Statement for 2012**

Revenues	2,200.0
Costs (70% of revenues)	1,540.0
Depreciation	300.0
EBIT	360.0
Interest (10% of beg long-term debt)	77.2
<b>Taxable income</b>	<b>282.9</b>
Tax @ 40%	113.1
<b>Net income</b>	<b>169.7</b>
Dividends (1/3 of NI)	56.6
Addition to retained earnings	113.1

Answer the following questions:

- Calculate the internal growth rate ( $g^i$ ) and the sustainable growth rate ( $g^*$ ) and then carefully explain what are the assumptions implicit in the calculations.
- What will happen with  $g^i$  and  $g^*$  over time if the firm starts to gradually increase its payout ratio over the next few years?
- What will happen with  $g^i$  and  $g^*$  over time if the firm's ROA and ROE start to decline gradually over the next few years?
- Under which assumptions will  $g^i$  and  $g^*$  be constant over time?
- Assume that the  $g^i$  and  $g^*$  you calculated have been roughly constant over the past few years and will remain constant over the next few years as well. Suppose HN cannot issue new equity but lenders are willing to extend the firm more credit, and keep in mind its current debt-to-equity

ratio. Discuss what will happen to the firm's debt-to-equity ratio over the next few years if the firm consistently grows at i) 5%, ii) 15%, or iii) 25% per year. Comment on any potential advantages or risks of these alternative growth strategies.

**f)** Under the assumption in e), will lenders always finance HN's growth at 25% per year?

**g)** Suppose that HN faces an expanded market for its products and its sales could grow at 30% per year for the next ten years. What needs to happen on the finance side so that the company can accomplish this 30% growth per year?