A Simple Financial Planning Example

COMPUTERFIELD CORPORATION
Financial Statements

Income Statement		Balance Sheet			
Sales	$1,000	Assets	$500	Debt	$250
Costs	800			Equity	250
Net income	$ 200	Total	$500	Total	$500

Pro Forma Income Statement

Sales	$1,200
Costs	960
Net income	$ 240

Pro Forma Balance Sheet

Assets	$600 (+100)	Debt	$300	(+50)
		Equity	300	(+50)
Total	$600 (+100)	Total	$600	(+100)

If D/E = 1
⇒ Div = 190
if Div = 0 ⇒
E ↑ +240 ⇒ then D↓ 140

Pro Forma Balance Sheet

Assets	$600 (+100)	Debt	$110	(−140)
		Equity	490	(+240)
Total	$600 (+100)	Total	$600	(+100)

Another Financial Planning Example

ROSENGARTEN CORPORATION
Income Statement

Sales		$1,000
Costs		800
Taxable income		$ 200
Taxes (34%)		68
Net income		$ 132
Dividends	$44	
Addition to retained earnings	88	

ROSENGARTEN CORPORATION
Pro Forma Income Statement

Sales (projected)	$1,250
Costs (80% of sales)	1,000
Taxable income	$ 250
Taxes (34%)	85
Net income	$ 165

Another Financial Planning Example - continued

ROSENGARTEN CORPORATION
Balance Sheet

Assets	$	Percentage of Sales
Current assets		
Cash	$ 160	16%
Accounts receivable	440	44
Inventory	600	60
Total	$1,200	120
Fixed assets		
Net plant and equipment	$1,800	180
Total assets	$3,000	300%

Liabilities and Owners' Equity	$	Percentage of Sales
Current liabilities		
Accounts payable	$ 300	30%
Notes payable	100	n/a
Total	$ 400	n/a
Long-term debt	$ 800	n/a
Owners' equity		
Common stock and paid-in surplus	$ 800	n/a
Retained earnings	1,000	n/a
Total	$1,800	n/a
Total liabilities and owners' equity	$3,000	n/a

Another Financial Planning Example – continued

1st step in balancing the Balance Sheet

Assuming that we keep the NWC the same, we have

ROSENGARTEN CORPORATION
Partial Pro Forma Balance Sheet

Assets	Next Year	Change from Current Year
Current assets		
Cash	$ 200	$ 40
Accounts receivable	550	110
Inventory	750	150
Total	$1,500	$300
Fixed assets		
Net plant and equipment	$2,250	$450
Total assets	$3,750	$750

Liabilities and Owners' Equity	Next Year	Change from Current Year
Current liabilities		
Accounts payable	$ 375	$ 75
Notes payable	100	0
Total	$ 475	$ 75
Long-term debt	$ 800	$ 0
Owners' equity		
Common stock and paid-in surplus	$ 800	$ 0
Retained earnings	1,110	110
Total	$1,910	$110
Total liabilities and owners' equity	$3,185	$185
External financing needed	$ 565	$565

325

750 − 75 = 110 565

(Δ in Assets − Δ in Spont Liab) = Δ in RE + EFN

Another Financial Planning Example – continued

Bal. Sheet balanced – assumption: NWC stays the same

ROSENGARTEN CORPORATION
Pro Forma Balance Sheet

Assets	Next Year	Change from Current Year	Liabilities and Owners' Equity	Next Year	Change from Current Year
Current assets			Current liabilities		
Cash	$ 200	$ 40	Accounts payable	$ 375	$ 75
Accounts receivable	550	110	Notes payable	325	225
Inventory	750	150	Total	$ 700	$300
Total	$1,500	$300	Long-term debt	$1,140	$340
Fixed assets			Owners' equity		
Net plant and equipment	$2,250	$450	Common stock and paid-in surplus	$ 800	$ 0
			Retained earnings	1,110	110
			Total	$1,910	$110
Total assets	$3,750	$750	Total liabilities and owners' equity	$3,750	$750

Now, instead, if we want NWC to increase at the same rate as sales then new NWC will be 1,000.

$$NWC_{new} = CA_{new} - CL_{new}$$

$$1{,}000 = 1{,}500 - CL_{new} \Rightarrow CL_{new} = \$500.$$

Then: $CL_{new} = \text{Acc. Payable}_{new} + \underbrace{\text{Notes Payable}_{new}}_{\text{short term debt}}$

$$500 = 375 + 100 + \underbrace{25}_{\text{addition to short term debt.}}$$

$$EFN = 565$$

If the company does not want to issue new stocks, then the addition to $\underbrace{LTD}_{\text{Long Term Debt}} = 565 - 25 = 540.$

Percent of Sales and EFN

This page not included in midterm.

- External Financing Needed (EFN) can also be calculated as:

$$\left(\frac{\text{Assets}}{\text{Sales}}\right)\times\Delta\text{Sales}-\frac{\text{Spon Liab}}{\text{Sales}}\times\Delta\text{Sales}-(PM\times\text{Projected Sales})\times(1-d)$$

$$=(3\times 250)-(0.3\times 250)-(0.13\times 1250\times 0.667)$$

$$=\$565$$

3.5 External Financing and Growth

- At low growth levels, internal financing (retained earnings) may exceed the required investment in assets.
- As the growth rate increases, the internal financing will not be enough, and the firm will have to go to the capital markets for financing.
- Examining the relationship between growth and external financing required is a useful tool in financial planning.

HOFFMAN COMPANY
Income Statement and Balance Sheet

Income Statement

Sales		$500
Costs		400
Taxable income		$100
Taxes (34%)		34
Net income		$ 66
Dividends	$22	
Addition to retained earnings	44	

Balance Sheet

Assets	$	Percentage of Sales	Liabilities and Owners' Equity	$	Percentage of Sales
Current assets	$200	40%	Total debt	$250	n/a
Net fixed assets	300	60	Owners' equity	250	n/a
Total assets	$500	100%	Total liabilities and owners' equity	$500	n/a

HOFFMAN COMPANY
Pro Forma Income Statement and Balance Sheet

Income Statement

Sales (projected)		$600.0
Costs (80% of sales)		480.0
Taxable income		$120.0
Taxes (34%)		40.8
Net income		$ 79.2
Dividends	$26.4	
Addition to retained earnings	52.8	

Balance Sheet

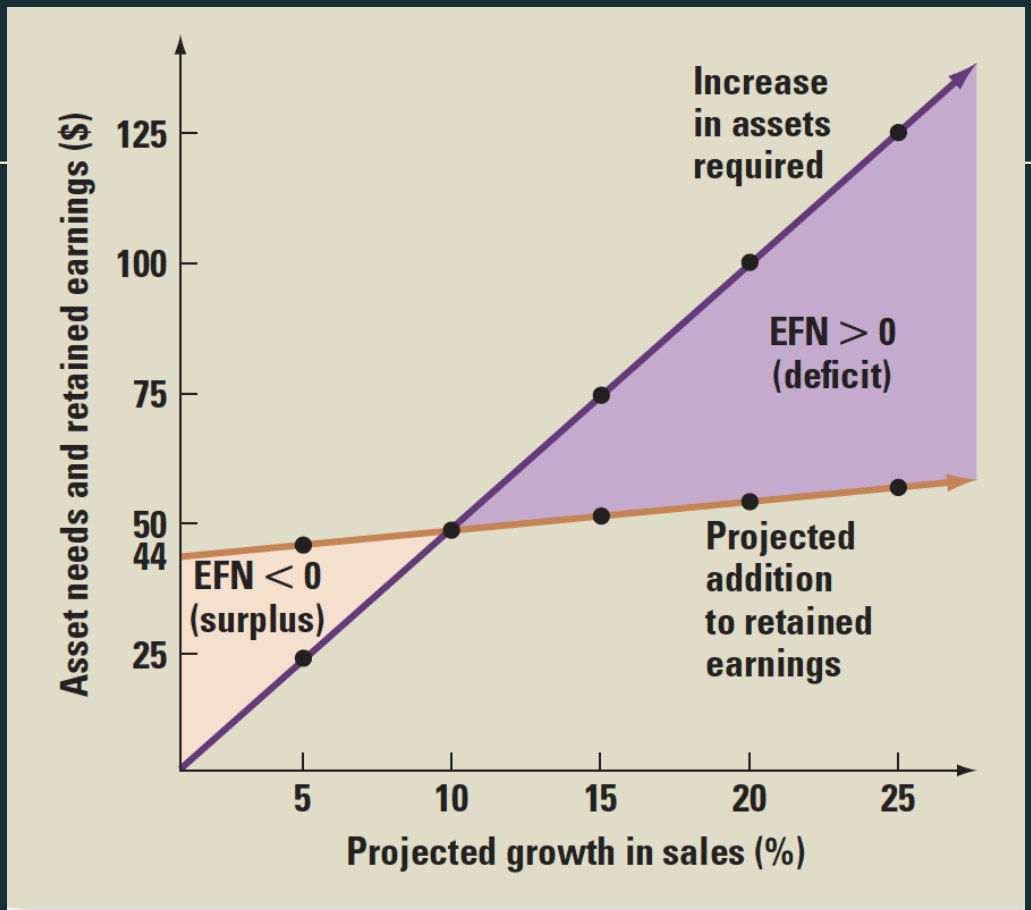
Assets

	$	Percentage of Sales
Current assets	$240.0	40%
Net fixed assets	360.0	60
Total assets	$600.0	100%

Liabilities and Owners' Equity

	$	Percentage of Sales
Total debt	$250.0	n/a
Owners' equity	302.8	n/a
Total liabilities and owners' equity	$552.8	n/a
External financing needed	$ 47.2	n/a

Projected Sales Growth	Increase in Assets Required	Addition to Retained Earnings	External Financing Needed, EFN	Projected Debt–Equity Ratio
0%	$ 0	$44.0	–$44.0	.70
5	25	46.2	–21.2	.77
10	50	48.4	1.6	.84
15	75	50.6	24.4	.91
20	100	52.8	47.2	.98
25	125	55.0	70.0	1.05


Asset needs and retained earnings ($)
125
100
75
50
44
25
Increase in assets required
EFN > 0 (deficit)
EFN < 0 (surplus)
Projected addition to retained earnings
5
10
15
20
25
Projected growth in sales (%)

Definition + concept of IGR is included in the midterm but NOT the equation!

The Internal Growth Rate

- The internal growth rate tells us how much the firm can grow assets using retained earnings as the only source of financing.
- Using the information from the Hoffman Co.
  - ROA = 66 / 500 = .132
  - b = 44/ 66 = .667

$$\text{Internal Growth Rate} = \frac{\text{ROA} \times b}{1 - \text{ROA} \times b}$$

$$= \frac{.132 \times .667}{1 - .132 \times .667} = .0965$$

$$= 9.65\%$$

Definition & concept of SGR is included but NOT the equation!

The Sustainable Growth Rate

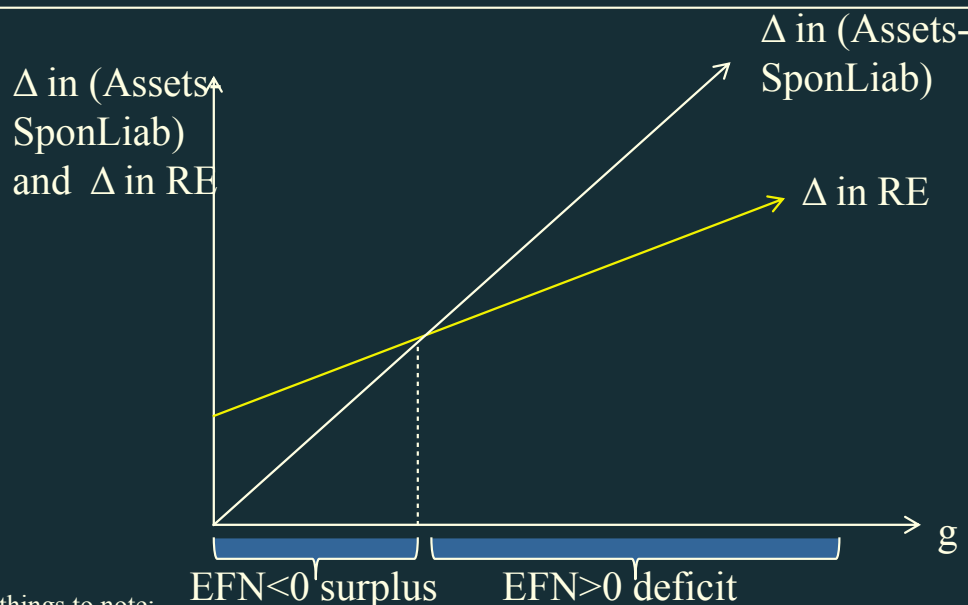
- The sustainable growth rate tells us how much the firm can grow by using internally generated funds and issuing debt to maintain a constant debt ratio.
- Using the Hoffman Co.
  - ROE = 66 / 250 = .264
  - b = .667

$$\text{Sustainable Growth Rate} = \frac{ROE \times b}{1 - ROE \times b}$$

$$= \frac{.264 \times .667}{1 - .264 \times .667} = .214$$

$$= 21.4\%$$

Relationship between growth rate and EFN



Two things to note:

1. Note that Δ in (Assets-SponLiab) starts at the origin. If the company does not grow (g=0%) there is no need to increase assets or change spontaneous liabilities. (Per year, sales will take place as before, existing assets will be used and depreciation amount, which is taken off as cost, can be used to replace the depreciating asset. Δ in RE starts at a positive value. Note that if the company does not grow, it will still have revenue, albeit as before. Hence, if company had positive profit and kept some of it as RE, without any growth, the same amount of revenue and Δ in RE will be obtained.
2. There is a differential in the slopes of two lines which allows a unique intersection and the existence of IGR. The Slope of the white line is equal to Δ in Assets-SponLiab per percentage growth rate. The slope of the yellow line is equal to Δ in RE per percentage growth rate. Since assets are expected to be used over time, it is reasonable to expect the sales to be smaller and profit and addition to RE even smaller than assets.

Determinants of Growth

- Profit margin – operating efficiency
- Total asset turnover – asset use efficiency
- Financial leverage – choice of optimal debt ratio
- Dividend policy – choice of how much to pay to shareholders versus reinvesting in the firm

3.6 Some Caveats

- Financial planning models do not indicate which financial polices are the best.
- Models are simplifications of reality, and the world can change in unexpected ways.
- Without some sort of plan, the firm may find itself adrift in a sea of change without a rudder for guidance.

Quick Quiz

- What is the purpose of financial planning?
- What are the major decision areas involved in developing a plan?
- What is the percentage of sales approach?
- What is the internal growth rate?
- What is the sustainable growth rate?
- What are the major determinants of growth?