FIN 2704/2704X

Week 10 Slides

Financial Planning

Learning objectives

Understand the financial planning process and how decisions are interrelated

Managers Use Pro Forma Financial Statements To

1. Assess whether the firm's **anticipated performance** is in line with the firm's own **general targets** and with **investor's expectations.**
2. **Estimate** the effects of **proposed operating changes.**
3. **Anticipate** the firm's **future financing needs**.
4. **Estimate** future cash flows from assets **(CFFAs)**, which determine the company's overall value.
5. **Set** appropriate **targets for compensation plans**.

What is Financial Planning?

Financial planning is a process of

- **Systematically** thinking about the future and possible problems
- **Evaluating** the impact of **alternative** investment and financing choices
- **Projecting** future consequences of present decisions & fund needs
- Implementing the plan
- Evaluating, revising and adjusting the plan – a feedback loop

Elements of Financial Planning

- **Investment in new assets** –
  Determined by **capital budgeting** decisions
- **Degree of financial leverage** –
  (how much are they using borrowed funds)
  Determined by **capital structure** decisions
- **Liquidity requirements** –
  Determined by **net working capital decisions**
- **Cash paid to shareholders** –
  Determined by **dividend policy decisions**

The Planning Process

- **Planning Horizon** – divide decisions into ***short-run*** decisions (usually next 12 months) and ***long-run*** decisions (usually 2 – 5 years)
- **Aggregation** – combine capital budgeting decisions into one big project
- **Assumptions and Scenarios**
  - Make **realistic** assumptions about important variables – otherwise the projections will be of no usefulness
  - Run several scenarios where you vary the assumptions by reasonable amounts

Additional Benefits of Financial Planning

- Examining interactions among decisions
- Exploring options and their consequences
- Avoid surprises
- Ensuring Feasibility and Internal Consistency of planned operating decisions and growth

Financial Statements

- **Balance Sheet**: Total Assets = Liabilities + Shareholders' Equity
- **Income Statement**: Net Income = Revenue – COGS – All Expenses – Taxes

How are they related?

→ Shareholder's Equity increases by Addition to Retained Earnings

From the *Statement of Retained Earnings*:

- Net Income = Addition to Retained Earnings + Dividends
- Addition to Retained Earnings = Net Income – Dividends
- Dividends = Net Income – Addition to Retained Earnings

Financial Planning Model Ingredients

1. **Sales Forecast** – many cash flows depend directly on the level of sales (often estimated using a growth rate in sales)
2. **Pro Forma Statements** – setting up the plan as projected financial statements allows for consistency and ease of interpretation
3. **Asset Requirements** – how much additional fixed assets will be required to meet sales projections
4. **Financial Requirements** – how much financing will we need to pay for the required assets
5. **Plug Variable** – (makes the balance sheet balance) A management decision about what type of financing will be used if external financing is needed, and a decision on where excess funds generated will be invested (if instead of needing external financing, the projections indicate excess funds are generated).
6. **Economic Assumptions** – explicit assumptions about the coming economic environment

Example: Historical Financial Statements

Gourmet Coffee Inc.

Balance Sheet

December 31, 2018

Assets	1000	Debt	400
		Equity	600
Total	1000	Total	1000

Gourmet Coffee Inc.

Income Statement

For Year Ended

December 31, 2018

Revenues	2000
Costs	1600
Net Income	400

Example: Pro Forma Income Statement

- **Growth Assumptions**
  - Revenues will grow at 15% (2000*1.15)
  - All Asset and Income items are tied directly to sales and the current relationships are optimal, and thus will also grow at 15%
- **What happens to Equity & Debt?**
- **We'll look at two potential scenarios:**
  - **Case 1**: The firm ***chooses*** to have Debt and Equity also grow at 15% (same rate as Assets). Thus *Dividends* are the plug.
  - **Case 2**: The firm ***chooses*** not to pay out any dividends nor issue/repurchase Stock. Thus *Debt* is the plug.

Gourmet Coffee Inc.

Pro Forma

Income Statement

For Year Ended 2019

Revenues	2,300
Costs	1,840
Net Income	460

Example: Pro Forma Balance Sheet

Case 1

- **Assets = Liabilities + Shareholders' Equity** always!
- Since Assets must grow at 15% to support the 15% increase in sales, then we know that Assets will equal $1,150 ($1,000*1.15)
- In Case 1, the L&SE must also equal $1,150 by management decision on D and E.
  - However beginning Debt + Equity was $1,000 & we know NI is $460.
  - If all of NI went to Retained Earnings, then D+E would be $1,460.
  - Something must be adjusted so that D and E = $1,150.
  - This is where the ***"plug" decision*** comes in. Mechanically, the plug allows A = L+SE, and in financial terms, it determines where the extra funds will go or the loss in funds will be raised.

Gourmet Coffee Inc.
Pro Forma Balance Sheet
Case 1

Assets	1,150	Debt	460
		Equity	690
Total	1,150	Total	1,150

Example: Pro Forma Balance Sheet

Case 1 (cont.)

- Under Case 1, the firms wants Debt and Equity to also grow by 15%.
  - Thus ending Debt will be $460 and ending Equity will be $690.
  - Thus ***Addition to RE*** can only be $90.
  - Since ***Net Income = Dividends + Addition to Retained Earnings***, then Dividends are our "plug". Here NI = 460, Addition to RE =$90, so Dividends are found as follows:

    Dividends = $460 – $90 = $370

Gourmet Coffee Inc.
Pro Forma Balance Sheet
Case 1

Assets	1,150	Debt	460
		Equity	690
Total	1,150	Total	1,150

Example: Pro Forma Balance Sheet

Case 2

- As before, **Assets = Liabilities + Shareholders' Equity**
- Since Assets must grow at 15% to support the 15% increase in sales, then we know that Assets will equal $1,150 ($1000*1.15).
- Again, Debt + Equity was $1,000 and we know Net Income is $460, thus if all of NI went to Retained Earnings then D+E would be $1,460. Something must be adjusted so that A = L+SE.
- Under Case 2, the firm has chosen a different plug. Here, the firm has decided that it **will NOT pay any dividends**. Thus, Equity ***must*** increase from $600 to ending Equity of $1,060.
  - Under Case 2, ***Debt* is the *plug variable***. The firm has decided no dividends will be paid, and all excess funds will be used to pay down debt and any shortfall would be met by issuing more debt.
  - Here we have excess funds, thus,

Ending Debt = $1,150 – ($600+$460) = $90.

  - Repay $400 – $90 = $310 in debt.

Gourmet Coffee Inc.

Pro Forma Balance Sheet

Case 2

Assets	1,150	Debt	90
		Equity	1,060
Total	1,150	Total	1,150

Summary

- Financial planning:
  - Elements
  - Process
  - Ingredients
- How to make the balance sheet balance (plug variable)
  - A management decision about what type of financing will be used if external financing is needed
  - A decision on where excess funds generated will be invested.

Percent of Sales Approach

Learning objectives

Be able to develop a financial plan using the **percentage of sales** approach & the **External Funds Needed (EFN)** equation method

Percent of Sales Approach

- Keep in mind that for any given business, some Balance Sheet and some Income Statement items may vary directly with sales, while others may not
- E.g. Income Statement
  - Costs may vary directly with sales
  - If all costs do, then the profit margin is constant
  - Dividends are a management decision and generally do not vary directly with sales, unless by management decision – recall Dividends affect the period's change in Retained Earnings that go on the Balance Sheet

Percent of Sales Approach (cont.)

- E.g. Balance Sheet
  - Sometimes all assets, including net fixed assets, vary directly with sales growth. Sometimes only some assets vary with sales. We will need to be informed
  - Accounts payable will also normally vary directly with sales
  - Notes payable, long-term debt and equity generally do not because they depend on management decisions about capital structure
  - The change in the retained earnings portion of equity will come from the dividend decision

Example: Income Statement

Tasha's Toy Emporium

Income Statement, 2018

		% of Sales
Sales	5,000	
Costs	3,000	60%
EBT	2,000	40%
Taxes (40%)	800	16%
Net Income	1,200	24%
Dividends	600	
Add. To RE	600	

Tasha's Toy Emporium

Pro Forma Income Statement, 2019

Sales	5,500
Costs	3,300
EBT	2,200
Taxes	880
Net Income	1,320
Dividends	660
Add. To RE	660

Dividend Payout Rate = 50%

Assume Sales grow at 10%

Example: Balance Sheet

Tasha's Toy Emporium – Balance Sheet

	Current	% of Sales	*Pro Forma*
ASSETS			
Current Assets			
Cash	$500	10%	$550
A/R	2,000	40	2,200
Inventory	3,000	60	3,300
Total	5,500	110	6,050
Fixed Assets			
Net PP&E	4,000	80	4,400
Total Assets	9,500	190	10,450

	Current	% of Sales	Pro Forma
Liabilities & Owners' Equity			
Current Liabilities			
A/P	$900	18%	$990
N/P	2,500	n/a	2,500
Total	3,400	n/a	3,490
LT Debt	2,000	n/a	2,000
Owners' Equity			
CS	2,000	n/a	2,000
RE	2,100	n/a	2,760
Total	4,100	n/a	4,760
Total L & OE	9,500		10,250

In this example ALL assets grow with sales, but this is not always necessarily the case

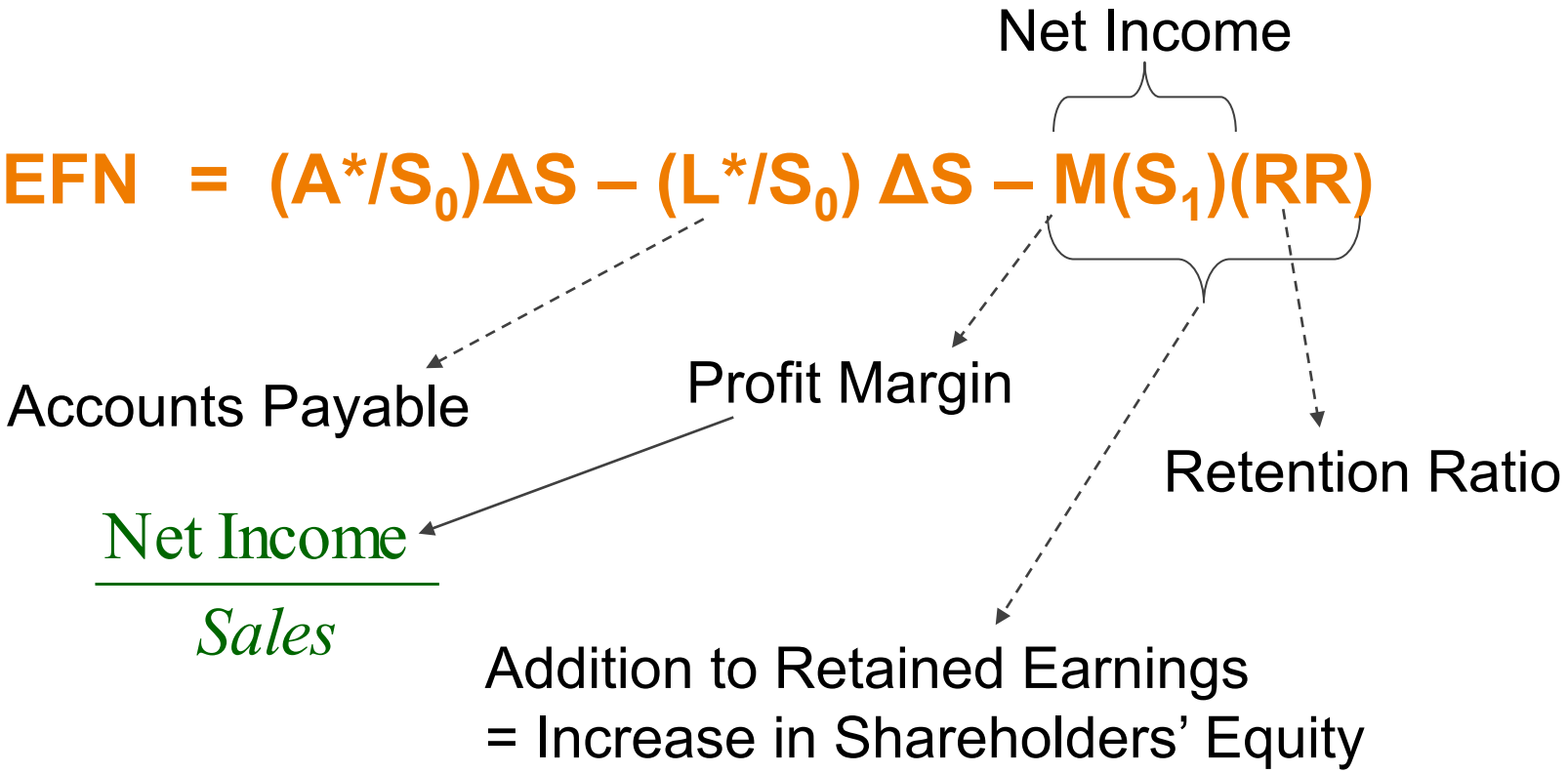
External Funds Needed (EFN)

(also called Additional Funds Needed, AFN)

- The firm needs to come up with an additional $200 in debt or equity to make the balance sheet balance
  - TA – (TL & OE) = 10,450 – 10,250 = 200
- Choose a possibility:
  - Borrow more short-term (Notes Payable)
  - Borrow more long-term (LT Debt)
  - Sell more common stock
  - Decrease dividend payout, which increases Addition to Retained Earnings

EFN Equation

Determining additional funds needed, using the EFN equation:



Terms in EFN Equation

A*: assets whose value and growth are tied directly to Sales

L*: liabilities that increase spontaneously with Sales.

M: Profit margin

S_0: Sales during the past year

S_1: Sales projected for the coming year

$\Delta S = S_1 - S_0$

Using the EFN Equation

EFN = Spontaneous Increase in Assets
– Spontaneous Increase in Liabilities
– Increase in Retained Earnings

$EFN = (A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(RR)$

$= (9500/5000)*500 - (900/5000)*500 - (1200/5000)*5500*0.5$

$= 200$

Important Assumptions to Using EFN Equation:

1. Firm is operating at full capacity
2. Constant Profit Margin
3. Dividend Payout Ratio/ Retention Ratio is constant

Example: Operating at Less than Full Capacity

Suppose that the company is currently operating at 80% capacity.

- Full Capacity sales = $5000 / 0.8 = $6,250
- Estimated sales = $5,500, so would still only be operating at 88%
- Therefore, no additional fixed assets would be required.
- Pro forma Total Assets = $6,050 + $4,000 = $10,050
- Total Liabilities and Shareholders' Equity = $10,250

Amount of Operating WC needed

No change in fixed assets

We find that we in fact do not need additional funds but rather have generated funds from operations. Where will those funds be used is to be decided.

Example: Operating at Less than Full Capacity (cont.)

To balance the accounting equation:

Total Assets < Total Liabilities + Shareholders' Equity

- Repay some short-term debt (decrease Notes Payable)
- Repay some long-term debt (decrease LT Debt)
- Buy back stock (decrease Shareholders' Equity)
- Pay more in dividends (reduce Addition to RE)
- Increase cash account

Work the Web Example

- Looking for estimates of company growth rates?
- What do the analysts have to say?
- Check out Yahoo Finance (http://finance.yahoo.com/) – enter a company ticker and follow the "Analyst Estimates" link

Summary

- Percent of sales approach:
  - Some Balance Sheet and some Income Statement items may vary directly with sales, while others may not
- How do we balance the Balance Sheet?
  - EFN
  - What do we do when A > L + E?
  - What do we do when A < L + E?

Internal and Sustainable Growth Rates

Learning objectives

- Understand what a firm's internal growth rate is
- Understand what a firm's sustainable growth rate is
- Understand how capital structure policy and dividend policy affect a firm's ability to grow

Growth and Performance

- When a company is growing faster than it can finance internally, *any* distributions to shareholders will cause it to seek greater additional financing.
- **It is important not to confuse the need for *external financing* with *poor performance*!**
- Most growing firms need additional financing to fuel that growth as their expenditures to grow will naturally precede the income generated from that growth.

The Internal Growth Rate & Sustainable Growth Rate

The **formulae to be discussed** in the next slides regarding the ***internal growth rate*** & the ***sustainable growth rate*** all rely on the assumption that all liabilities are non-spontaneous, i.e., all liabilities including Accounts Payable, do not increase with sales. Thus the EFN equation (*FOR THESE FORMULAE only*) becomes,

EFN = Spontaneous Increase in Assets
– Increase in Retained Earnings

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.

$$b = \text{retention ratio (RR)} = \frac{\text{Net Income - Dividends}}{\text{Net Income}}$$

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

$$= \frac{\frac{1200}{9500} \times 0.5}{1 - (\frac{1200}{9500} \times 0.5)} = 0.0674$$

$$= 6.74\%$$

Let's visualize using the adjusted EFN Equation

New Sales = 5,000*1.0674 = 5,337

$$EFN = (A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(RR)$$

$$= (9{,}500/5{,}000)*337 - 0 - (1{,}200/5{,}000)*5{,}337*0.5$$

$$= 0$$

Let's visualize using the adjusted EFN Equation

If we want higher growth than the internal growth rate, say 10%,

New Sales = 5,000*1.10 = 5,500

$$EFN = (A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(RR)$$

$$= (9{,}500/5{,}000)*500 - 0 - (1{,}200/5{,}000)*5{,}500*0.5$$

$$= 290$$

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.

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

$$= \frac{\frac{1200}{4100} \times 0.5}{1 - (\frac{1200}{4100} \times 0.5)} = 0.1714$$

$$= 17.14\%$$

Let's visualize using the adjusted EFN Equation

New Sales = 5,000*1.1714 = 5,857

EFN = $(A^*/S_0)\Delta S - (L^*/S_0)\,\Delta S - M(S_1)(RR)$

= (9,500/5,000)*857 – 0 – (1,200/5,000)*5,857*0.5

= 925.46 (all debt)

Current Debt ratio = 5,400/9,500 = 0.5684

Projected Debt ratio

= (5,400+925.46)/(9,500+925.46+702.84) = 0.5684

Let's visualize using the adjusted EFN Equation

If want higher growth rate than sustainable growth rate, say 20%,

New Sales = 5,000*1.20 = 6,000

AFN = $(A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(RR)$

= (9,500/5,000)*1,000 – 0 – (1,200/5,000)*6,000*0.5

= 1,180 (all debt)

Current Debt ratio = 5,400/9,500 = 0.5684

Projected Debt ratio

= (5,400+1,180)/(9,500+1,180+720) = 0.5772

Higher than current Debt ratio

Determinants of Growth: ROE & b

Recall the **Dupont Identity**:

ROE = Profit margin * Total asset turnover * Equity multiplier

ROA

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

Important Questions

It is important to remember that we are working with accounting numbers and we need to ask some important questions as we go through the planning process.

- Do the financial relationships applied, really hold?
- How does the plan affect the timing and risk of cash flows?
- Does the plan point out inconsistencies in our goals?
- If we follow this plan, will we maximize owners' wealth?
  - ***Value is still determined by cashflows generated, their timing and their risk***.

Summary

- Most growing firms, i.e., firms that are growing faster than it can finance internally, need additional financing to fuel that growth
- The need for external financing is not necessarily equal to poor performance
- Growth:
  - Internal growth rate
  - Sustainable growth rate

Illustrative Example

(Incorporating Financial Ratios)

EXAMINABLE

JAZ Inc.
Balance Sheet (2018),
in millions of dollars

Cash & sec.	$ 20	Accts. pay. & accruals	$ 100
Accounts rec.	240	Notes payable	100
Inventories	240	Total CL	$ 200
Total CA	$ 500	L-T debt	100
		Common stock	500
Net fixed assets	500	Retained earnings	200
Total assets	$1,000	Total claims	$1,000

JAZ Inc.
Income Statement (2018), in millions of dollars

Sales		$2,000.00
Less:	Variable costs (60%)	1,200.00
	More var. costs (35%)	700.00
EBIT		$ 100.00
Interest		16.00
EBT		$ 84.00
Taxes (40%)		33.60
Net income		$ 50.40
Dividends (30%)		$15.12
Add'n to RE		$35.28

Key Ratios (2018)

	JAZ Inc.	Industry	Condition
BEP	10.00%	20.00%	Poor
Profit margin	2.52%	4.00%	”
ROE	7.20%	15.60%	”
DSO	43.80 days	32.00 days	”
Inv. turnover	8.33x	11.00x	”
F. A. turnover	4.00x	5.00x	”
T. A. turnover	2.00x	2.50x	”
Debt/assets	30.00%	36.00%	Good
TIE	6.25x	9.40x	Poor
Current ratio	2.50x	3.00x	”
Payout ratio	30.00%	30.00%	O.K.

Key Assumptions

- Operating at full capacity in 2018.
- Each type of asset grows proportionally with sales.
- Payables and accruals grow proportionally with sales.
- 2018 profit margin (2.52%) and payout (30%) will be maintained.
- Sales are expected to increase by $500 million. (%$\Delta$S = 25% = $500 million/ $2000 million)

Determining External Funds Needed
Using the (EFN) Equation

$$\mathbf{EFN} = (A^*/S_0)\Delta S - (L^*/S_0)\,\Delta S - M(S_1)(RR)$$

$$= (\$1{,}000/\$2{,}000)(\$500)$$

$$- (\$100/\$2{,}000)(\$500)$$

$$- 0.0252(\$2{,}500)(0.7)$$

$$= \mathbf{\$180.9\ million}.$$

How Shall External Financing Needed (EFN) Be Raised?

- The payout ratio will remain at 30 percent (p = 30%; RR = 70%).
- No new common stock will be issued.
- Any external funds needed will be raised as debt, 50% notes payable and 50% L-T debt.

Using % of Sales Method:

Forecasted Income Statement (2019)

As a % of previous year's Sales

	2018	Forecast Basis	2019 Forecast
Sales	$2,000	1.25	$2,500
Less: VC	1,200	0.60	1,500
MVC	700	0.35	875
EBIT	$ 100		$ 125
Interest	16		16
EBT	$ 84		$ 109
Taxes (40%)	34		44
Net income	$ 50		$ 65
Div. (30%)	$15		$19
Add'n to RE	$35		$46

Using the % of Sales Method:

Forecasted Balance Sheet (2019)

Assets

	2018	Forecast Basis	2019 1st Pass
Cash	$ 20	0.01	$ 25
Accts. rec.	240	0.12	300
Inventories	240	0.12	300
Total CA	$ 500		$ 625
Net FA	500	0.25	625
Total assets	$1,000		$1,250

Using the % of Sales Method:
Forecasted Balance Sheet (2019)
Liabilities and Equity

	2018	Forecast Basis	2019 1st Pass
AP/accruals	$ 100	0.05	$ 125
Notes payable	100	→	100
Total CL	$ 200		$ 225
L-T debt	100	→	100
Common stk.	500	→	500
Ret.earnings	200	+46*	246
Total claims	$1,000		$1,071

* From Income Statement.

Financial Statement Method: What Is The External Funds Needed (EFN)?

- Required increase in assets = $ 250
- Spontaneous increase in liab. = $ 25
- Increase in retained earnings = $ 46
- Total EFN = $ 179

JAZ Inc. must have the assets to generate forecasted sales. The balance sheet must balance, so we must raise $179 million externally.

How Will The EFN Be Financed?

Assume that JAZ Inc. decides on:

1. 50% Additional N/P
   - 0.5 ($179) = $89.50
2. 50% Additional L-T debt
   - 0.5 ($179) = $89.50

- **But this financing will add to interest expense**, which will lower Net Income and Addition to retained earnings.
- In FIN2704 we will generally ignore financing feedbacks. Note that this issue can easily be addressed when using Excel-type spreadsheets to produce pro forma statements.

Using the % of Sales Approach: Forecasted Balance Sheet (2019) Assets – 2nd Pass

	2019 1st Pass	EFN	2019 2nd Pass
Cash	$ 25	-	$ 25
Accts. rec.	300	-	300
Inventories	300	-	300
Total CA	$ 625		$ 625
Net FA	625	-	625
Total assets	$1,250		$1,250

Using the % of Sales Approach: Forecasted Balance Sheet (2019) Liabilities and Equity – 2nd Pass

	2019 1st Pass	EFN	2019 2nd Pass*
AP/accruals	$ 125	-	$ 125
Notes payable	100	+89.5	189.5
Total CL	$ 225		$ 314.5
L-T debt	100	+89.5	189.5
Common stk.	500	-	500
Ret.earnings	246	-	246
Total claims	$1,071		$1,250

Ignoring the financing feedbacks

Why Do The EFN Equation And % of Sales Method Have Different Results?

- Equation method assumes a ***constant profit margin (clearly not in this case because of the interest expense)***, a ***constant dividend payout ratio***, and ***operating at full capacity.***

- Financial statement method is more flexible. More importantly, it allows different items to grow at different rates.

EXTRA INFO: Results using Excel and Taking into Account Financing Effects

H22

	A	B	C	D
1		**2018**	**Forecast Basis**	**2019E**
2	Sales	2000	1.25	2500
3	Less VC	1200	0.60	1500
4	Less FC	700	0.35	875
5	EBIT	100		125
6	Interest	16	0.08	31
7	EBT	84		94
8	Taxes (40%)	34		38
9	**Net Income**	50		56
10	Dividends (30%)	15		17
11	**Addition to RE**	35		40
12				
13		**2018**	**Forecast Basis**	**2019E**
14	Cash	20	0.01	25
15	Accounts Rec.	240	0.12	300
16	Inventories	240	0.12	300
17	Total CA	500		625
18	Net FA	500	0.25	625
19	**Total Assets**	1000		1250
20				
21	AP/Accruals	100	0.05	125
22	Notes Payable	100		193
23	Total CL	200		318
24	LT Debt	100		193
25	Common Stock	500		500
26	Retained Earnings	200		240
27	**Total Liab & SE**	1000		1250

Sheet1 Sheet2 Sheet3

Ready Calculate

Forecasted Ratios (2019)

	2018	2019(E)	Industry	
BEP	10.00%	10.00%	20.00%	Poor
Profit margin	2.52%	2.62%	4.00%	”
ROE	7.20%	8.77%	15.60%	”
DSO (days)	43.80	43.80	32.00	”
Inv. turnover	8.33x	8.33x	11.00x	”
F. A. turnover	4.00x	4.00x	5.00x	”
T. A. turnover	2.00x	2.00x	2.50x	”
D/A ratio	30.00%	40.34%	36.00%	”
TIE	6.25x	7.81x	9.40x	”
Current ratio	2.50x	1.99x	3.00x	”
Payout ratio	30.00%	30.00%	30.00%	O.K.

How Much Free Cash Flow (*Cash Flow From Assets)* Is Expected To Be Generated In 2019?

CFFA = FCF = OCF – Net Capital Spending
– Change in Net Operating Working Capital

Tax Shield Approach

OCF = (Sales – Operating Costs) *(1-T_c) + D*T_c
= $125*0.60 + 0 = $75

Net Capital Spending = $125

Change in NOWC = $100

CFFA = FCF = $75 – $125 – $100 = -$150.

- *Note that there is apparently no Depreciation Expense here, from the highly summarized financial statements we have*

Example Adjustment 1:
Suppose Fixed Assets Had Only Been Operating At 75% Of Capacity In 2018

- Additional sales could be supported with the existing level of assets.
- The maximum amount of sales that can be supported by the current level of assets is:

Capacity sales = Actual sales / % of capacity

= $2,000 / 0.75 = $2,667

- Since this is more than 2019 forecasted sales of $2,500, no additional fixed assets are needed.

Example Adjustment 1:
How Would The Excess Capacity Situation Affect The 2019 EFN?

- The projected increase in fixed assets was $125, the EFN would therefore decrease by $125.
- Since no new fixed assets will be needed, EFN will fall by $125, to:

EFN = $179 – $125 = $54.

Example Adjustment 2:

If Sales Increased To $3,000 Instead, What Would Be The Fixed Asset Requirement?

- Target ratio = FA / Capacity sales

  = $500 / $2,667 = 18.75%

- Have enough FA for sales up to $2,667, but need FA for another $333 of sales, so:

  $\Delta FA = 0.1875 ($333) = 62.40

Forecasted Ratios (2019) Financing Effects Ignored With Projected 2019 Sales Of $2,500

	IF % of 2018 CAPACITY		
	100%, then 2019	75%, then 2019	vs. Industry
BEP	10.00%	11.11%	20.00%
Profit margin	2.62%	2.62%	4.00%
ROE	8.77%	8.77%	15.60%
DSO (days)	43.80	43.80	32.00
Inv. turnover	8.33x	8.33x	11.00x
F. A. turnover	4.00x	5.00x	5.00x
T. A. turnover	2.00x	2.22x	2.50x
D/A ratio	40.34%	33.71%	36.00%
TIE	7.81x	7.81x	9.40x
Current ratio	1.99x	2.48x	3.00x

Example Adjustment 2:

How would excess capacity affect the forecasted ratios?

- Sales wouldn't change but Assets would be lower since Assets growth would be lower than Sales growth, so turnovers would be better.
- Less new debt, hence lower interest, so higher profits, EPS, ROE (when financing feedbacks are considered).
- Debt ratio, TIE would improve.

How Is JAZ Managing Its Receivables And Inventories?

- DSO is higher than the industry average, and inventory turnover is lower than the industry average.
- Improvements here would lower current assets, reduce capital requirements, and further improve profitability and other ratios.

Headlines - Company Forecasting:

"Google: Too much information?" by Paul R. La Monica, CNN Money, March 2, 2006

Shares of Google plunged 7 percent Tuesday after Google chief financial officer George Reyes, speaking at a Merrill Lynch Internet conference, said that growth was starting to slow in search. "Most of what is left is just *organic growth*," said Reyes. "Clearly our *growth rates* are slowing. We see that each and every quarter. We are going to have to find new ways to monetize the business." … Google reported fourth-quarter earnings that missed Wall Street forecasts last month, its first miss since going public.

Headlines – Company Forecasting:

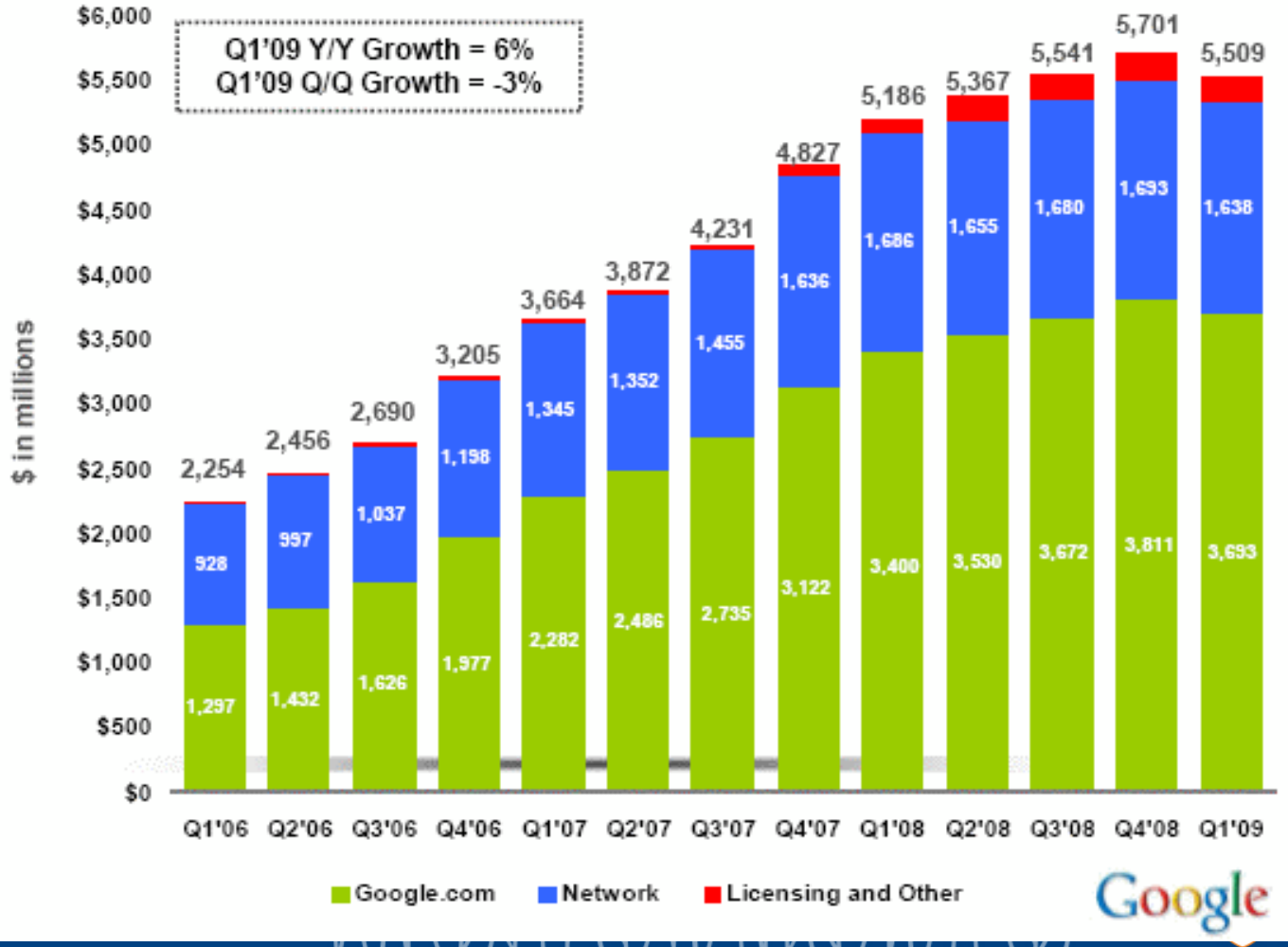
"Google Blows Away Estimates as Search, Video Businesses Grow" by Keith Regan, www.EcommerceTimes.com, October 20, 2006

Google posted third-quarter revenue of $2.69 billion, up 70 percent over the quarter last year, and reported profits of $733 million, almost double compared to the third quarter last year. The company's shares soared higher in after-hours trading in the wake of the release, with shares up 8 percent, or $33.79 to $459.85.

Headlines – Company Forecasting:

More Details

Quarterly Revenue



Headlines – Company Forecasting:

"Brin, Schmidt Eye Further Google Expansion" by Marc Ferranti, IDG News Service, 7th October 2009

Despite Google's phenomenal growth, the Internet search giant does not appear to be worried about taking on too many projects…Though Google is expanding into multiple areas such as operating systems, applications, online books and display advertising, more than 90 percent of company revenue comes from keyword-related search advertising, acknowledged Schmidt, who is also the chairman of the company.

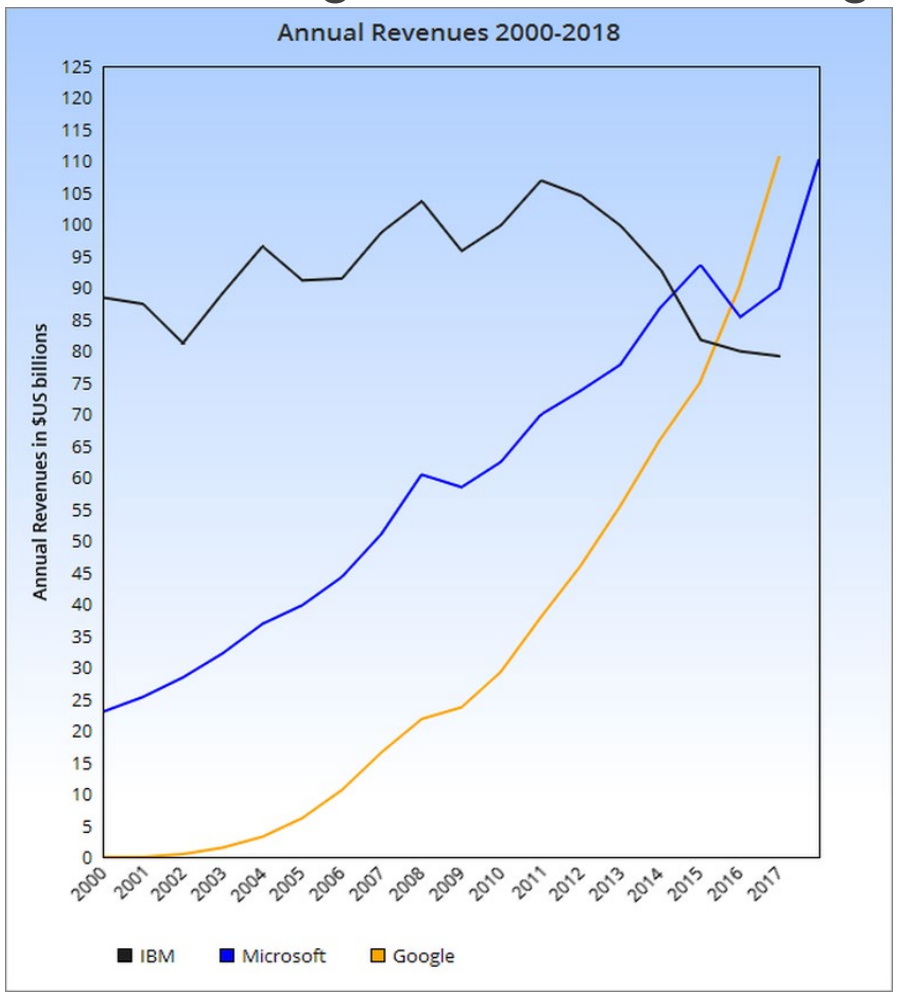
Headlines – Company Growth Rates

Microsoft CEO terms Google growth insane Silicon Valley, March 18, 2007 (PTI)

- While Google's phenomenal growth may by the envy of many, Microsoft Corp CEO Steve Ballmer criticized the internet company for trying to grow too fast.
- In a presentation at Stanford University's Graduate School of Business, Ballmer said Microsoft went from 24 to 75,000 people in nearly three decades, while Google had become a very large company in a fraction of that time.
- "They're trying to double in a year. I think that's insane, in my opinion," Ballmer said. "Microsoft, with a more managed growth, had been digesting a certain percentage of growth over many years."

Headlines – Company Growth Rates

Microsoft is now bigger than IBM has ever been - but Google's growth is astonishing, July 26, 2018 (ZDNet)



- "Microsoft reached another two milestones when it unveiled its annual financial results last week. First, as ZDNet noted, its annual revenues passed $100bn for the first time. Second, its $110.4bn turnover was not only bigger than IBM's, it was bigger than IBM's has ever been."
- "But I'm sure the Softies are not going to get complacent about that: Microsoft will also know that it has already been overtaken by a much younger firm: Google. (Technically, the company is now called Alphabet.) Worse, Google is still growing faster than Microsoft, though the success of Microsoft's Azure cloud may yet keep it in the hunt."