



Financial Planning

- Plans: strategic, operating, and financial
- Pro forma financial statements
 - Sales forecasts
 - Percent of sales method
- Additional Funds Needed (AFN) formula



Task of financial planning

- Cover a short time span
- Take a long term perspective
- Focus on required resources for a specific projects

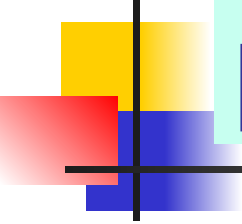


Financial plan

- Adaptable tool for management to use to achieve its strategic goals
- Translation of strategic plan into measurable quantities that express the expected resources and anticipated return over a certain period
- Presents the estimated future financial statements

Goals of financial planning

- Three important uses:
 - Forecast the amount and sources of financing that will be required
 - Evaluate the impact that changes in the operating plan have on the value of the firm
 - Set appropriate targets for compensation plans



What answers should Financial planning give to the manager?

- What is the size of financial funds that company has?
- What are their sources?
- Do we have enough funds to reach our goals?
- What part of funds we should transact to the budget, state funds, to banks and to other lenders?
- How should we use our profit?
- Are our real revenues and planned expenses balanced?



Financial planning

- Long term – more than 3 years
- Medium-term – for 1-3 years
- Short-term - budgeting



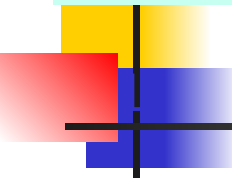
Financial Planning

Financial Planning

The projection of sales, income, and assets based on alternative production and marketing strategies, as well as the determination of the resources needed to achieve these projections.

Forecasting also is important for production planning and human resource planning.

Steps to get AFN – simple one-pass forecast balance sheet method



1. Calculate RE with the data given
(method varies)

2. Increase CA and spontaneous liabilities proportionately with sales
3. Increase FA if needed based on capacity information given
4. Carry over bonds/bank-loans and stock
5. Calculate $TA - (TL + E) = AFN$
 - AFN = additional funds needed from external sources



Steps in Financial Forecasting

- Forecast sales
- Project the assets needed to support sales
- Project internally generated funds
- Project outside funds needed
- Decide how to raise funds
- See effects of plan on ratios and stock price

2013 Balance Sheet (Millions of \$)

Cash & sec.	\$20	Accts. pay. & accruals	\$100
Accounts rec.	240	Notes payable	100
Inventories	240	Total CL	<u>\$200</u>
Total CA	<u>\$500</u>	L-T debt	100
		Common stk	500
Net fixed Assets	500	Retained Earnings	200
Total assets	<u>\$1000</u>	Total claims	<u>\$1000</u>

2013 Income Statement (Millions of \$)

Sales	\$2,000.00
Less: COGS (60%)	1,200.00
SGA costs	700.00
EBIT	<hr/> \$100.00
Interest	16.00
EBT	<hr/> \$84.00
Taxes (40%)	33.60
Net income	<hr/> \$50.40
Dividends (30%)	<hr/> \$15.12
Add'n to RE	35.28

AFN (Additional Funds Needed): Key Assumptions

- Operating at **full capacity** in 2013.
- Each type of asset grows **proportionally** with sales.
- Payables and accruals grow **proportionally** with sales.
- 2013 profit margin (2.52%) and payout (30%) **will be maintained**.
- Sales are expected to increase by \$500 million. (**$\% \Delta S = 25\%$**)



Assets

Assets = 0.5 sales

1,250

1,000

0

2,000

2,500

Sales

$\Delta \text{Assets} =$
 $(A^*/S_0)\Delta \text{Sales}$
 $= 0.5(\$500)$
 $= \$250.$

$A^*/S_0 = \$1,000/\$2,000 = 0.5 = \$1,250/\$2,500.$



Additional Funds Needed

AFN = Asset requirement - Spontaneous financing
- Retained earnings

$$= (A^*/S_0)\Delta S - (L^*/S_0) \Delta S - M(S_1)(1 - d)$$

Where:

- A^* = Assets tied directly to sales and will increase
- L^* = Spontaneous liabilities that will be affected by sales.
- S_0 = Sales during the last year
- S_1 = Total sales projected for next year (the new level of sales).
- ΔS = The increase in sales between S_0 and S_1
- M = Profit margin, or the profit per unit of sales
- d = payout ratio

Assets must increase by \$250 million.
What is the AFN, based on the AFN equation?

$$\text{AFN} = (A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(1 - d)$$

$$\begin{aligned} &= (\$1,000/\$2,000)(\$500) \\ &\quad - (\$100/\$2,000)(\$500) \\ &\quad - 0.0252(\$2,500)(1 - 0.3) \\ &= \text{\textcolor{red}{\$180.9 million.}} \end{aligned}$$

Projecting Pro Forma Statements with the Percent of Sales Method

- Project sales based on forecasted growth rate in sales
- Forecast some items as a percent of the forecasted sales
 - Costs
 - Cash
 - Accounts receivable

(More...)



Items as percent of sales (Continued...)

- Inventories

- Net fixed assets

- Accounts payable and accruals

- Choose other items

- Debt (which determines interest)

- Dividends (which determines retained earnings)

- Common stock

Percent of Sales: Inputs

	2013	2014
	<u>Actual</u>	<u>Proj.</u>
COGS/Sales	60%	60%
SGA/Sales	35%	35%
Cash/Sales	1%	1%
Acct. rec./Sales	12%	12%
Inv./Sales	12%	12%
Net FA/Sales	25%	25%
AP & accr./Sales	5%	5%



Other Inputs

Percent growth in sales	25%
Growth factor in sales (g)	1.25
Interest rate on debt	8%
Tax rate	40%
Dividend payout rate	30%

2014 1st Pass Income Statement

	<u>2013</u>	<u>Factor</u>	2014 <u>1st Pass</u>
Sales	\$2,000	$g=1.25$	\$2,500
Less: COGS		Pct=60%	1,500
SGA		Pct=35%	875
EBIT			\$125
Interest	16	→	16
EBT			\$109
Taxes (40%)			44
Net. Income			\$65
Div. (30%)			\$19
Add. to RE			\$46

2014 1st Pass Balance Sheet (Assets)

Forecasted assets are a percent of forecasted sales.

2014 Sales = \$2,500

	<u>Factor</u>	2014 <u>1st Pass</u>
Cash	Pct= 1%	\$25
Accts. rec.	Pct=12%	300
Inventories	Pct=12%	300
Total CA		<hr/> \$625
Net FA	Pct=25%	\$625
Total assets		<hr/> \$1250

2014 1st Pass Balance Sheet (Claims)

2014 Sales = \$2,500

	<u>2013</u>	<u>Factor</u> Pct=5%	2014 <u>1st Pass</u>
AP/accruals			\$125
Notes payable	100	→	100
Total CL			\$225
L-T debt	100	→	100
Common stk.	500	→	500
Ret. earnings	200	+46*	246
Total claims			\$1,071

***From 1st pass income statement.**

What are the additional funds needed (AFN)?

- Forecasted total assets = \$1,250
- Forecasted total claims = \$1,071
- Forecast AFN = \$ 179

NWC must have the assets to make forecasted sales. The balance sheets must balance. So, we must raise **\$179 externally.**

Assumptions about How AFN Will Be Raised

- No new common stock will be issued.
- Any external funds needed will be raised as debt, 50% notes payable, and 50% L-T debt.

How will the AFN be financed?

Additional notes payable =
 $0.5 (\$179) = \$89.50 \approx$
 $\$90.$

Additional L-T debt =
 $0.5 (\$179) = \$89.50 \approx$

But this financing will add $0.08(\$179) = \14.32 to interest expense, which will lower NI and retained earnings.

2014 2nd Pass Income Statement

	<u>1st Pass</u>	<u>Feedback</u>	<u>2nd Pass</u>
Sales	\$2,500	→	\$2,500
Less: COGS	\$1,500	→	\$1,500
SGA	875	→	875
EBIT	<u>\$125</u>	→	<u>\$125</u>
Interest	16	+14	30
EBT	<u>\$109</u>		<u>\$95</u>
Taxes (40%)	44		38
Net income	<u>\$65</u>		<u>\$57</u>
Div (30%)	<u>\$19</u>		<u>\$17</u>
Add. to RE	<u>\$46</u>		<u>\$40</u>

2014 2nd Pass Balance Sheet (Assets)

	<u>1st Pass</u>	<u>AFN</u>	<u>2nd Pass</u>
Cash	\$25	→	\$25
Accts. rec.	300	→	300
Inventories	300	→	300
Total CA	<u>\$625</u>	→	<u>\$625</u>
Net FA	625	→	625
Total assets	<u>\$1,250</u>	→	<u>\$1,250</u>

No change in asset requirements.

2014 2nd Pass Balance Sheet (Claims)

	<u>1st Pass</u>	<u>Feedback</u>	<u>2nd Pass</u>
AP/accruals	\$125	→	\$125
Notes payable	100	+90	190
Total CL	<u>\$225</u>		<u>\$315</u>
L-T debt	100	+89	189
Common stk.	500	→	500
Ret. earnings	<u>246</u>	-6	<u>240</u>
Total claims	<u>\$1,071</u>		<u>\$1,244</u>

Results After the Second Pass

- Forecasted assets = \$1,250 (no change)
- Forecasted claims = \$1,244 (higher)
- 2nd pass AFN = \$ 6 (short)
- Cumulative AFN = $\$179 + \$6 = \$185$.
- The \$6 shortfall came from the \$6 reduction in retained earnings.
Additional passes could be made until assets exactly equal claims. $\$6(0.08) = \0.48 interest on 3rd pass.

Equation AFN = \$181

vs.

Pro Forma AFN = \$185.

Why are they different?

- **Equation method assumes a constant profit margin.**
- **Pro forma method is more flexible. More important, it allows different items to grow at different rates.**

Suppose in 2014 fixed assets had been operated at only 75% of capacity.

$$\begin{aligned}\text{Capacity sales} &= \frac{\text{Actual sales}}{\% \text{ of capacity}} \\ &= \frac{\$2,000}{0.75} = \$2,667.\end{aligned}$$

With the existing fixed assets, sales could be \$2,667. Since sales are forecasted at only \$2,500, **no new fixed assets are needed.**

How would the excess capacity situation affect the 2014 AFN?

- The projected increase in fixed assets was \$125, the AFN would decrease by \$125.
- Since no new fixed assets will be needed, AFN will fall by \$125, to
$$\$179 - \$125 = \$54.$$

**Q. If sales went up to \$3,000,
not \$2,500, what would the
F.A. requirement be?**

**A. Target ratio = FA/Capacity sales
= \$500/\$2,667 = 18.75%.**

**Have enough F.A. for sales up to
\$2,667, but need F.A. for another
\$333 of sales:**

$$\Delta FA = 0.1875(\$333) = \$62.4.$$

How would excess capacity affect the forecasted ratios?

1. Sales wouldn't change but assets would be lower, so **turnovers** would be better.
2. Less new debt, hence lower interest, so **higher profits, EPS, ROE** (when financing feedbacks considered).
3. **Debt ratio, TIE would improve.**



Regression Analysis for Asset Forecasting

- Get historical data on a good company, then fit a regression line to see how much a given sales increase will require in way of asset increase.

How would increases in these items affect the AFN?

- Higher dividend payout ratio?
Increase AFN: Less retained earnings.
- Higher profit margin?
Decrease AFN: Higher profits, more retained earnings.

(More...)



Higher capital intensity ratio, A^*/S_0 ?

Increase AFN: Need more assets for given sales increase.

- Pay suppliers in 60 days rather than 30 days?

Decrease AFN: Trade creditors supply more capital, i.e., L^*/S_0 increases.



Budgeting

- Revenue budget
 - Cash budget
 - Budgeted balance sheet
-
- For 1 year
 - Quarterly



Types of budgets

- Fixed and Rolling Budgets
 - Rolling budget – a plan that is continually updated so that the time frame remain stable
- Incremental and Zero-Based Budgets