

Chapter 16

Financial Forecasting

Use of forecasted information

- Managers use pro forma, or projected, statements in several ways.
 - **First**, by looking at projected statements, managers can assess whether the firm's anticipated performance is in line with the firm's own internal targets and with investors' expectations.
 - **Second**, managers can use pro forma statements to estimate the impact of proposed operating changes.

Use of forecasted information

- **Third**, managers can use pro forma statements to anticipate the firm's future financing needs, and then arrange the necessary financing.
- **Finally**, managers can use projected financial statements to estimate cash flows, which determine the company's overall value.

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Use of forecasted information

- Managers forecast cash flows under different operating plans, forecast their capital requirements, and then choose the plan that maximizes shareholder value.
- Security analysts make the same types of projections as managers, and influence investors, who determine the future of managers.

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Major Goal

- The major goal of financial forecasting is to determine the additional funds needed by the firm for a future period.
- The basic procedure requires you to determine the level of operations for the period, forecast the assets needed to support these operations, forecast the funds available, and finally determine the difference between assets needed and funds available.

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Methods of forecasting

- There are numerous forecasting methods that can be used.
- Regression analysis, trend analysis, and percent of sales are but a few of the methods.
- However, all methods have some similarities. (We will focus on the percent of sales method.)

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Methods of forecasting

- All of the methods require that you first forecast needed assets and then forecast available liabilities and equity.
- All methods also recognize that various accounts are affected differently by changes in the level of the firm's operations (by operations we may mean level of sales, production, etc.).

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Methods of forecasting

- Two main types of accounts exist.
 - Spontaneous accounts - those accounts that generally vary with the level of the firm's sales (include accounts payable and accrued expenses)
 - Discretionary accounts - accounts that vary only when management makes a conscious decision to change them (include long-term debt, preferred stock, common stock)

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Percent of Sales Method

- In the percent of sales method, the level of firm operations is the sales level.
- We first determine the level of sales we wish to obtain, and then based on this information we forecast the level of assets, liabilities, and equity we will have. (In all problems, I will give you the level of sales.)

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Basic Procedure

- Additional funds needed equals projected assets minus projected liabilities and projected equity.

$$\left(\begin{array}{c} \text{additional} \\ \text{funds} \\ \text{needed} \end{array} \right) = \left(\begin{array}{c} \text{projected} \\ \text{assets} \end{array} \right) - \left[\left(\begin{array}{c} \text{projected} \\ \text{liabs} \end{array} \right) + \left(\begin{array}{c} \text{projected} \\ \text{equity} \end{array} \right) \right]$$

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Percent of Sales Forecasting Method - In the percent of sales method we expected spontaneous accounts to vary by the same percentage as sales. Using this method:

$$\left(\begin{array}{c} \text{projected} \\ \text{account} \\ \text{balance} \end{array} \right) = \left(\begin{array}{c} \text{old account} \\ \text{balance} \end{array} \right) \left(\frac{\text{projected sales}}{\text{old sales}} \right)$$

NOTE: This is true since projected sales divided by old sales equals one plus the percentage change in sales.

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Discretionary accounts (other than equity) only change if management decides to change them. Thus, you only make a change if you are told to do so.

$$\text{Projected Balance} = \text{Old account Balance} + \text{Stated change}$$

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Unless new equity is issued, **owner's equity** will change only by the amount of profit that will be retained for reinvestment in the firm.

$$\begin{aligned} \left(\begin{array}{c} \text{change in} \\ \text{retained earnings} \end{array} \right) &= \text{net income} - \text{dividends} \\ &= \left(\begin{array}{c} \text{net profit} \\ \text{margin} \end{array} \right) \left(\begin{array}{c} \text{projected} \\ \text{sales} \end{array} \right) - \text{dividends} \end{aligned}$$

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Are You Kidding, Inc. projects next year's sales to be \$20 million. Current sales are at \$15 million per year. Current assets equal \$5 million and fixed assets equal \$5 million. The firm's net profit margin is 5 percent. AYK forecasts that current assets will rise in direct proportion to sales but fixed assets will increase by only \$100,000. At present, AYK has \$1.5 million in accounts payable that will vary proportionally with sales, \$2 million in long-term debt, and common equity totaling \$6.5 million. AYK plans to pay \$500,000 in common stock dividend next year.

What are AYK's additional funds needed for next year?

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Using a chart can make the problem easier. First, identify the starting values of the accounts and how they are expected to change (values in \$ millions).

Account	OLD	Change	NEW
CA	5	with sales	$5(20/15)=6.67$
FA	5	+0.1	5.1
Acc Pay	1.5	with sales	$1.5(20/15)=2.0$
LTD	2	+0	2
Equity	6.5	+ change in RE	$6.5+(20)(0.05)-0.5=$ 7.0

Note: Acc Pay is spontaneous and always varies with sales.

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To get the final answer now add the asset accounts together (CA+FA) and then subtract the total of liabilities and equity (AccPay+LTD+Eq).

$$\begin{aligned}
 \text{AFN} &= (6.67 + 5.1) - (2 + 2 + 7) \\
 &= (11.77) - (11) \\
 &= \$ 0.77 \text{ million}
 \end{aligned}$$

This means that the company needs an additional \$ 0.77 million to fund its operations for the next year.

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For various reasons the company may not want to search for additional funding for the next year. The next question to arise may be what level of operations can we support without using discretionary funds. (In the percent of sales method, the level of operations means level of sales.)

This question can be answered in the same manner as before, except now we set the additional funds needed equal to zero and solve for new sales.

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Using a chart can make the problem easier. First, identify the starting values of the accounts and how they are expected to change (values in \$ millions).

Account	OLD	Change	NEW
CA	5	with sales	$5(x/15)$
FA	5	+0.1	5.1
Acc Pay	1.5	with sales	$1.5(x/15)$
LTD	2	+0	2
Equity	6.5	+ change in RE	$6.5+(x)(0.05)-0.5$

Note: Acc Pay is spontaneous and always varies with sales.

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To get the final answer, we must again add assets together and subtract liabilities and equity.

To find the new sales level where additional funds needed equals zero, we set the difference in assets and liabilities and equity equal to zero.

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$$0 = (5(x/15) + 5.1) - (1.5(x/15) + 2 + 6.5 + .05x - 0.5)$$

$$0 = (.3333x + 5.1) - (.10x + .05x + 8)$$

$$0 = (.3333x + 5.1) - (.15x + 8)$$

$$0 = .1833x - 2.9$$

$$-.1833x = -2.9$$

$$x = \$ 15.82 \text{ million}$$

This means that the firm can have sales of \$15.82 million next year without needing additional funds beyond what they already expect to have.

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