



Chapter 10

BUILDING A BUSINESS PLANNING WORKBOOK

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Pro forma financial statements—income statements, balance sheets, and cash flow statements—usually constitute an integral part of business planning and the overall budgeting process. Financial ratios are usually applied to these statements to assist both the builder and the user of the pro forma financial statements in assessing the strengths, weaknesses, and performance of the business and the reasonableness of the model.

The business planning starter workbook (BIZPLAN.XLS), described in this chapter, provides a framework to use in constructing pro forma financial statements and in applying ratio analysis to the pro forma statements. This starter workbook, with minor modifications, lets you apply ratio analysis to a set of existing financial statements. This chapter shows how to use the business planning starter workbook, modify it, and combine it with subsidiary spreadsheets.



EasyRefresher™: Financial Statements and Ratios

Financial statements describe either the past or the future financial condition and performance of a business. The term financial statement can refer to one of several types of schedules and summaries of economic information. Typically, however, the term describes a set of documents that include an income statement (also called a statement of operations), a balance sheet (also called a statement of financial condition), and a cash flow statement.

An income statement details the profits and losses of a business for a specific period. For example, you might want to know the profits or losses of your business over the past month. Therefore, you would prepare an income statement that lists your revenues and expenses and calculates the profits or losses for the month.

A balance sheet identifies and lists the assets and liabilities of a business as of a specific time. It paints a clear picture of what the business owns, what the business owes, and the difference between the two (often called the net worth or owner equity). Typically, you prepare a balance sheet as of the end of the period for which an income statement is prepared. For example, if you prepare an income statement for a month, you might also want to prepare a balance sheet as of the last day of the month.

A cash flow statement outlines the cash inflows and outflows of a business for a specific period. Generally, you prepare a cash flow statement for the same period for which you prepare an income statement.

Financial ratios express relationships among the amounts reported in the financial statements. The ratios can offer insights into the economic health of a business. The ratios can also indicate the reasonableness of the assumptions implicit in a forecast. For example, by comparing the ratios of your business with the ratios of similar businesses, you can compare the financial characteristics of your business with those of other businesses. By comparing the ratios in your pro forma model with industry averages and standards, you also test your modeling assumptions for reasonableness.

Two general categories of financial ratios exist: common size ratios and intrastatement or interstatement ratios. Common size ratios convert a financial statement—usually a balance sheet or an income statement—from dollars to percentages. Common size ratios allow for comparisons of the assets, liabilities, revenues, owner equity, and expenses of businesses of various sizes. The comparison can be either at a point in time or as a trend over time. Intrastatement or interstatement ratios quantify relationships among amounts from different financial statements or from different parts of the same financial statement. Intrastatement and interstatement ratios are an attempt to account for the fact that amounts usually cannot

be interpreted alone, but must be viewed in the context of other key financial factors and events. In general, both categories of ratios are most valuable when compared with industry averages and trends.

Using the Business Planning Starter Workbook

You can use the business planning starter workbook, shown in Figures 10-1 through 10-5, to construct pro forma financial statements that let you forecast profits and losses, financial condition, and cash flows for a business or organization. To use the workbook, you develop and then enter information on the assets; the creditor and owner equities at the start of the forecasting horizon; the expected changes in the assets and equities over the forecasting horizon; and the revenues and expenses for each period on the forecasting horizon.

	Period 0	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
Balance sheet inputs...											
4 Cash & Equivalents	15,000										
5 Yield on Cash & Equivalents	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
6 Accounts Receivable	10,000										
7 # Periods of Sales in A/R	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
8 Inventory	10,000										
9 Inventory Purchased/Produced	95,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000
10 Other Current Assets	5,000										
11 Chgs in Other Current Assets	100	-100	100	-100	100	-100	100	-100	100	-100	-100
12 Plant, Property, & Equipment	75,000										
13 Chgs in P.P.E.	0	0	0	0	15,000	0	0	0	0	0	-10,000
14 Accumulated Depreciation	15,000										
15 Chgs in Accum. Depreciation	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	-6,250
16 Other Noncurrent Assets	5,000										
17 Chgs in Other Noncurrent Assets	100	-100	100	-100	100	-100	100	-100	100	-100	-100
18 Accounts Payable	10,000										
19 # Periods Cost of Sales in A/P	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
20 Accrued Expenses	7,500										
21 # Periods Operating Expenses in A/E	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
22 Other Current Liabilities	7,500										
23 Chgs in Other Current Liabilities	100	-100	100	-100	100	-100	100	-100	100	-100	-100
24 Long-Term Liabilities	35,000										
25 Chgs in Long-Term Liabilities	0	0	0	0	0	0	0	0	0	0	0
26 Other Noncurrent Liabilities	4,000										
27 Chgs in Other Noncurrent Liabilities	100	-100	100	-100	100	-100	100	-100	100	-100	-100
28 Owner Equity	41,000										
29 Chgs in Owner Equity	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000	-25,000
Profit and loss statement inputs...											
31 Sales Revenue	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000
32 Cost of Sales	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
33 Cost Center 1 Costs	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
34 Cost Center 2 Costs	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
35 Cost Center 3 Costs	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
36 Interest Expense	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
37 Marginal Income Tax Rate	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%

Figure 10-1 The inputs area of the business planning starter workbook.

Given data that includes your starting assets, liabilities, owner equity balances, and expected changes in these amounts for the forecasting horizon, this workbook constructs a balance sheet. Given data that includes sales and costs of sales, operating expenses, interest income and expenses, and marginal income tax rates, this workbook constructs an income statement. From the balance sheet and income statement, this workbook constructs a cash flow statement.

To enter your own data in the business planning starter workbook, use the following steps. Enter positive balances or increases as positive amounts, and enter negative balances or decreases as negative amounts.



1. Open the business planning starter workbook, BIZPLAN.XLS, from the companion CD.

The starter workbook initially contains the default inputs shown in Figure 10-1.

2. Enter the cash and equivalents balance for the start of the forecasting horizon.

The value you enter for Cash & Equivalents is the starting cash and cash equivalents (marketable securities), the dollar total of all the cash held at the beginning of the forecasting period.

3. Enter the forecasted period yield that you expect the cash and equivalents to deliver.

The model estimates the period interest income by multiplying the cash and equivalents balance by the yield on cash and equivalents.

4. Enter the accounts receivable balance for the start of the forecasting horizon.

The value you enter for Accounts Receivable (A/R) is the starting accounts receivable balance, the balance at the beginning of the forecasting horizon, excluding any allowance for uncollectible amounts.

5. Enter the number of periods of sales in accounts receivable.

The value you enter for # of Periods of Sales in A/R, or number of periods of sales in accounts receivable, is the number of periods or the fraction of a period for which sales are held in accounts receivable. If accounts receivable typically amount to about 30 days of sales and you use months as your forecasting periods, you hold one period of sales in accounts receivable. Alternatively, if accounts receivable typically amount to about 30 days of sales and you use years as your forecasting periods, you hold one-twelfth of a period of sales in accounts receivable.

6. Enter the dollar amount of the inventory held at the start of the forecasting horizon.

The Inventory value is the starting inventory balance, the total dollar amount of the inventory purchased for resale or manufactured for resale and held at the beginning of the forecasting horizon.

7. Enter the forecasted dollar amount of inventory purchased or produced for each period of the forecasting horizon.

The Inventory Purchased/Produced value is the dollar total of items purchased or produced over the period.

8. Enter the amount of the other current assets held at the start of the forecasting horizon.

The Other Current Assets starting balance is the dollar total of any other current assets with which you begin the forecasting horizon. These other current assets might include prepaid expenses, short-term investments, and deposits made with vendors.



- 9. Enter the amount of the change in the other current assets for each period in the forecasting horizon.**

The value for Chgs in Other Current Assets, or changes in other current assets for the period, is the dollar total of increases or decreases in the accounts included in the starting other Current Assets balance.

- 10. Enter the amount of the plant, property, and equipment at the start of the forecasting horizon.**

The starting Plant, Property, & Equipment balance is the dollar total of the fixed assets. This amount includes such items as realty, manufacturing equipment, and furniture.

- 11. Enter the amount of the change in the plant, property, and equipment (P,P,&E) for each period of the forecasting horizon.**

The Chgs in P, P, & E value is the dollar total of decreases or increases in the plant, property, and equipment accounts for the period. Increases in these accounts probably stem from purchases of additional fixed assets. Decreases in these accounts probably stem from disposal of assets.

- 12. Enter the amount of the accumulated depreciation on the plant, property, and equipment at the start of the forecasting horizon.**

The starting Accumulated Depreciation balance represents the depreciation expenses charged to date on the assets identified in the starting Plant, Property, & Equipment balance.

- 13. Enter the amount of the change in the accumulated depreciation for each period of the forecasting horizon.**

The Chgs in Accum. Depreciation value is the dollar total of increases and decreases in the accumulated depreciation account for the period. Increases in the accumulated depreciation balance probably stem from the current period depreciation expense. Decreases in the accumulated depreciation balance probably stem from removing the accumulated depreciation attributed to a fixed asset that you disposed of.

- 14. Enter the amount of the other noncurrent assets at the start of the period.**

The starting other Noncurrent Assets balance is the dollar total of all other noncurrent assets held at the start of the forecasting period. Other noncurrent assets might include copyrights, patents, and goodwill.

- 15. Enter the amount of the change in the other noncurrent assets for each period of the forecasting horizon.**

The Chgs in Other Noncurrent Assets value is the dollar total increase or decrease for the period in the accounts included in the starting Other Noncurrent Assets balance.



16. Enter the amount of the accounts payable balance at the start of the forecasting horizon.

The starting Accounts Payable (A/P) balance is the dollar total of amounts owed vendors for inventory at the start of the forecasting horizon. This starter workbook calculates future Accounts Payable balances, based on the cost of sales volumes. To add precision to the forecasts of accounts payable, the model assumes that accounts payable represent debt incurred for the cost of sales.

17. Enter the number of periods of the cost of sales in accounts payable.

The # Periods Cost of Sales in A/P is the number of periods or the fraction of a period for which the cost of sales is held in accounts payable. If accounts payable typically amount to about 30 days of cost of sales and you use months as your forecasting periods, you hold one period of cost of sales in accounts payable. Alternatively, if accounts payable typically amount to about 30 days of cost of sales and you use years as your forecasting periods, you hold one-twelfth of a period of cost of sales in accounts payable.

18. Enter the amount of the accrued expenses balance at the start of the forecasting horizon.

The starting Accrued Expenses (A/E) balance is the dollar total of amounts owed vendors for operating expenses at the start of the forecast horizon. This starter workbook calculates future Accrued Expenses balances, based on the operating expenses levels. To add precision to the forecasts of accrued expenses, the model assumes that accrued expenses represent debt incurred for operating expenses.

19. Enter the number of periods of operating expenses in accrued expenses.

The # Periods Operating Expenses in A/E value is the number of periods or the fraction of a period for which operating expenses are held in accrued expenses. If accrued expenses typically amount to 30 days of operating expenses and you use months as your forecasting periods, you hold one period of operating expenses in accrued expenses. Alternatively, if accrued expenses typically amount to about 30 days of operating expenses and you use years as your forecasting periods, you hold one-twelfth of a period of operating expense in accrued expenses.

20. Enter the amount of the other current liabilities at the start of the forecasting period.

The Other Current Liabilities starting balance is the dollar total of all other current liabilities held at the start of the forecasting period. Other current liabilities might include income tax payable, product warranty liability, and the current portion of a long-term liability.

21. Enter the amount of the change in the other current liabilities for each period of the forecasting horizon.

The Chgs in Other Current Liabilities value is the dollar total of increases or decreases for the period in the accounts included in the starting Other Current Liabilities balance.



- 22. Enter the amount of the long-term liabilities balance at the start of the forecasting horizon.**

The starting Long-Term Liabilities balance is the dollar total of debt that will be paid back sometime after the next year.

- 23. Enter the amount of the change in the long-term liabilities for each period of the forecasting horizon.**

The Chgs in Long-Term Liabilities value is the increase or decrease for the period in the outstanding long-term debt. These changes might include decreases stemming from the amortization of principal through debt service payments and increases stemming from additional funds provided by creditors. You need to include the principal component of debt service payments as negative amounts because they decrease the amount of long-term liability.

- 24. Enter the amount of the other noncurrent liabilities at the start of the forecasting horizon.**

The Other Noncurrent Liabilities starting balance is the dollar total of all other noncurrent liabilities held at the start of the forecasting period. These might include deferred income tax, employee pension plan liabilities, and capitalized lease obligations.

- 25. Enter the amount of the change in the other noncurrent liabilities for each period of the forecasting horizon.**

The Chgs in Other Noncurrent Liabilities value is the dollar total of increases or decreases for the period in the accounts included in the starting Other Noncurrent Liabilities balance. These changes might include decreases stemming from the amortization of principal through debt service payments and increases stemming from additional funds provided by creditors.

- 26. Enter the amount of the owner equity balance at the start of the forecasting horizon.**

The Owner Equity starting balance is the dollar total of the capital originally contributed by owners and the earnings retained by the business at the start of the forecasting horizon.

- 27. Enter the amount of the change in the owner equity balance for each period of the forecasting horizon stemming from additional capital contributions, dividends, and other special distributions to owners.**

The Chgs in Owner Equity value is the dollar total of increases for the period in owner equity, other than those stemming from the profits of a business and all decreases in owner equity. For example, increases in the Owner Equity balance might result from additional offerings of common or preferred stock and treasury stock transactions; decreases in the Owner Equity balance might result from dividends and other distributions to stockholders.



NOTE *Changes to owner equity balance resulting from the profit or loss for the period are calculated in the income statement; they are not entered.*

28. Enter the sales revenue forecasted for each period of the forecasting horizon.

The Sales Revenue values represent the forecasted sales revenues generated by the business over each period of the forecasting horizon.

29. Enter the cost of sales forecasted for each period of the forecasting horizon.

The Cost of Sales values represent the forecasted costs of the inventory sold for the forecasting horizon.

30. Enter those costs that fall into the first, second, and third operating expense classification or category for each period of the forecasting horizon.

The operating expenses for Cost Centers 1, 2, and 3 represent the operating expenses for the forecasting horizon. These figures might be three expense classifications related to operating the business, or they might be the total expenses for three groups of expenses.

31. Enter the interest expense of carrying any debt used to fund operations or asset purchases.

The Interest Expense values represent the period interest expenses of carrying any debt related to the business.

32. Enter the marginal income tax rate that, when multiplied against the profit or loss for the period, calculates the income tax expense (or savings).

The Marginal Income Tax Rate value is the percentage that, when multiplied by the operating profit (or loss), calculates the income tax expense (or savings). If you are interested only in calculating pretax profits and losses, enter this amount as 0.

After you enter the required inputs, the starter workbook makes the calculations necessary to construct pro forma financial statements and calculate a set of rather standard financial ratios.

Understanding the Starter Workbook's Calculations

The business planning starter workbook has seven parts: the inputs forecast, Balance Sheet, Common Size Balance Sheet, Income Statement, Common Size Income Statement, Cash Flow Statement, and Financial Ratios Table. I want to briefly describe the calculations that occur within each of these parts in case you have questions or in case you want to modify the starter workbook so it works for your situation.

Forecasting Inputs

The inputs area of the business planning starter workbook has one set of formulas. The second row identifies the period for which the results are calculated. The period identifier numbers the periods for which values are entered. The start of the first period is stored in cell B2 as the integer 0. Periods that follow are stored as the previous period plus 1.

The period identifiers in the Balance Sheet, Common Size Balance Sheet, Income Statement, Cash Flow Statement, and Financial Ratios Table schedules use similar formulas.

NOTE *The cells that hold the period identifiers use a custom number format that precedes each period with identification with the word Period. To remove this, reformat the cells using another number format.*

Balance Sheet

The Balance Sheet schedule has 19 rows with calculated data and one row with the text label *Period* (see Figure 10-2). (As in the inputs area of the business planning starter workbook, the period identifier numbers the periods for which values are forecasted.) The rest of the Balance Sheet's values are described in the paragraphs that follow.

	Period 0	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
Assets											
Current Assets											
Cash & Equivalents	\$15,000	\$15,695	\$16,291	\$17,071	\$17,769	\$18,589	\$19,294	\$20,154	\$21,057	\$21,795	\$278,160
Accounts Receivable	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Inventory	10,000	5,000	10,000	5,000	10,000	5,000	10,000	5,000	10,000	5,000	10,000
Other Current Assets	5,000	5,100	5,000	5,100	5,000	5,100	5,000	5,100	5,000	5,100	5,000
Total Current Assets	40,000	35,795	43,291	51,171	59,769	51,689	52,294	71,954	51,457	31,895	162,160
Plant, Property, & Equipment	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Less: Accumulated Depreciation	(15,000)	(18,750)	(22,500)	(26,250)	(30,000)	(33,750)	(37,500)	(41,250)	(45,000)	(48,750)	(42,500)
Net Plant, Property, & Equipment	60,000	56,250	52,500	48,750	45,000	41,250	37,500	33,750	30,000	26,250	32,500
Other Noncurrent Assets	5,000	5,100	5,000	5,100	5,000	5,100	5,000	5,100	5,000	5,100	5,000
Total Assets	\$105,000	\$97,135	\$100,791	\$105,021	\$109,769	\$115,039	\$119,894	\$125,404	\$131,457	\$138,245	\$145,660
Liabilities											
Current Liabilities											
Accounts Payable	\$10,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Accrued Expenses	7,500	625	625	625	625	625	625	625	625	625	625
Other Current Liabilities	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Total Current Liabilities	25,000	13,225	13,125	13,225	13,125	13,225	13,125	13,225	13,125	13,225	13,125
Noncurrent Liabilities											
Long-Term Liabilities	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Other Noncurrent Liabilities	4,000	4,100	4,000	4,100	4,000	4,100	4,000	4,100	4,000	4,100	4,000
Total Noncurrent Liabilities	39,000	39,100	39,000	39,100	39,000	39,100	39,000	39,100	39,000	39,100	39,000
Owner Equity	41,000	44,810	48,666	52,696	57,583	62,714	67,769	73,079	79,332	85,920	93,535
Total Liabilities and Owner Equity	\$105,000	\$97,135	\$100,791	\$105,021	\$109,769	\$115,039	\$119,894	\$125,404	\$131,457	\$138,245	\$145,660

Figure 10-2 The Balance Sheet portion of the business planning starter workbook.



Cash & Equivalents

The Cash & Equivalents figures show the projected cash on hand at the end of each of the forecasting periods. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is pulled from the Cash Flow Statement schedule, where it is calculated.

Accounts Receivable

The Accounts Receivable (A/R) figures show the net receivables held as of the end of each forecasting period. The starting balance is the value you enter in the inputs planning area of the business starter worksheet. The balance for the first and subsequent periods is based on the Sales Revenue and the # Periods of Sales in A/R values you enter in the inputs area of the business planning starter workbook. For example, the formula for the first period is:

`=C7*C31`

The formula for the second period is:

`=D7*D31`

and so on.

Inventory

The Inventory values show the dollar total of the inventory held at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous period balance plus any inventory purchases or production costs minus any cost of sales. For example, the formula for the first period is:

`=B45+C9-C32`

The formula for the second period is:

`=C45+D9-D32`

and so on.

Other Current Assets

The Other Current Assets figures show the dollar total of the other current assets held at the end of each forecasting period. The starting balance for Other Current Assets is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous balance plus the change in the balance. For example, the formula for the first period is:

`=B46+C11`

The formula for the second period is:

=C46+D11

and so on.

Total Current Assets

The Total Current Assets figures show the dollar total of the current assets at the end of each of the forecasting horizons. The balance at any time is the sum of Cash & Equivalents, Accounts Receivable, Inventory, and Other Current Assets. For example, the formula for the starting Total Current Assets balance is:

=SUM(B43:B46)

The formula for the first period is:

=SUM(C43:C46)

and so on.

Plant, Property, & Equipment

The Plant, Property, & Equipment figures show the original dollar cost of the plant, property, and equipment at the end of each forecasting horizon. The starting Plant, Property, & Equipment balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous balance plus any additions to the plant, property, and equipment accounts. For example, the formula for the first period is:

=B48+C13

The formula for the second period is:

=C48+D13

and so on.

Less: Accumulated Depreciation

The Accumulated Depreciation figures show the cumulative depreciation expenses charged through the current period for the plant, property, and equipment. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous balance minus the current period's changes in accumulated depreciation. For example, the formula for the first period is:

=B49-C15

The formula for the second period is:

=C49-D15

and so on. Because the accumulated depreciation is shown as a negative amount, you need to subtract the positive number pulled from the forecasting inputs.

Net Plant, Property, & Equipment

The Net Plant, Property, & Equipment figures show the difference between Plant, Property, & Equipment and Accumulated Depreciation at the end of each of the forecasting horizons. For example, the formula for the starting balance is:

=B48+B49

The formula for the first period is:

=C48+C49

and so on. Because the Accumulated Depreciation balance is shown as a negative amount, you simply add these two amounts in the formula for the Net Plant, Property, & Equipment amount.

Other Noncurrent Assets

The Other Noncurrent Assets figures show the dollar total of any other noncurrent assets held at the end of each of the forecasting periods. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous period balance plus the change in the account in the current period. For example, the formula for the first period is:

=B51+C17

The formula for the second period is:

=C51+D17

and so on.

Total Assets

The Total Assets figures show the dollar total of all the assets held at the end of the forecasting periods. The balance at any time is the sum of Current Assets; Net Plant, Property, & Equipment; and Other Noncurrent Assets. For example, the formula for the starting balance is:

=B47+B50+B51

The formula for the first period is:

`=C47+C50+C51`

and so on.

Accounts Payable

The Accounts Payable figures show the debt that is related to the cost of sales outstanding at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is Cost of Sales for the period times # of Periods of Cost of Sales in A/P. For example, the formula for the first period is:

`=C19*C32`

The formula for the second period is:

`=D19*D32`

and so on.

Accrued Expenses

The Accrued Expenses figures show the debt that is related to the operating expenses outstanding at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the operating expenses times # of Periods Operating Expenses in A/E. For example, the formula for the first period is:

`=C21*SUM(C33:C35)`

The formula for the second period is:

`=D21*SUM(D33:D35)`

and so on.

Other Current Liabilities

The Other Current Liabilities figures show the dollar total of other debts outstanding at the end of the forecasting periods that will be paid within the current year or business cycle. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous balance plus the change in the current period. For example, the formula for the first period is:

`=B59+C23`

The formula for the second period is:

=C59+D23

and so on.

Total Current Liabilities

The Total Current Liabilities figures show the dollar total of all the current liabilities at the end of each of the forecasting periods. The balance at any time is the sum of Accounts Payable, Accrued Expenses, and Other Current Liabilities. For example, the formula for the starting balance is:

=SUM(B57:B59)

The formula for the first period is:

=SUM(C57:C59)

and so on.

Long-Term Liabilities

The Long-Term Liabilities figures show the dollar total of the long-term outstanding debt at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous balance plus any changes in the Long-Term Liabilities balance in the current period. For example, the formula for the first period is:

=B62+C25

The formula for the second period is:

=C62+D25

and so on.

Other Noncurrent Liabilities

The Other Noncurrent Liabilities figures show the dollar total of any other noncurrent outstanding debt at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous period balance plus the change in the current period. For example, the formula for the first period is:

=B63+C27

The formula for the second period is:

=C63+D27

and so on.

Total Noncurrent Liabilities

The Total Noncurrent Liabilities figures show the dollar totals of the long-term debt and the other noncurrent outstanding debt at the end of each of the forecasting periods. The balance at any time is the sum of Long-Term Liabilities and Other Noncurrent Liabilities. For example, the formula for the starting balance is:

=B62+B63

The formula for the first period is:

=C62+C63

and so on.

Owner Equity

The Owner Equity figures show the dollar totals of the owner equity accounts at the end of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. The balance for the first and subsequent periods is the previous period balance plus Net Income After Taxes for the period plus other adjustments, such as additional capital contributions and dividends. For example, the formula for the first period is:

=B65+C29+C116

The formula for the second period is:

=C65+D29+D116

and so on.

Total Liabilities and Owner Equity

The Total Liabilities and Owner Equity figures show the dollar totals of Current Liabilities, Noncurrent Liabilities, and Owner Equity at the end of each forecasting period. For example, the formula for the starting balance is:

=B60+B64+B65

The formula for the first period is:

$$=C60+C64+C65$$

and so on.

TIP *The Total Assets value should equal the Total Liabilities and Owner Equity value. If they differ, your model contains an error.*

Common Size Balance Sheet

The Common Size Balance Sheet schedule lists, in the balance sheet format, what percentage of the total assets each individual asset represents and what percentage of the total liabilities and owner equity each individual liability and the owner equity represents (see Figure 10-3). When you compare these percentages with those of business peers, you can see the relative financial strength or weakness of your business. Trends in the percentages over time can indicate improvement or deterioration in the overall financial condition of your business.

	Period 0	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
Common Size Balance Sheet											
Assets											
Current Assets											
Cash & Equivalents	14.50%	16.16%	18.16%	20.59%	21.64%	23.20%	21.19%	41.00%	42.35%	51.50%	53.68%
Accounts Receivable	3.52%	10.29%	9.32%	9.52%	9.12%	8.68%	8.34%	7.37%	7.61%	7.23%	6.87%
Inventories	9.52%	5.16%	9.92%	4.76%	9.12%	4.35%	8.34%	3.99%	7.61%	3.62%	6.87%
Other Current Assets	4.76%	5.26%	4.96%	4.88%	4.56%	4.43%	4.17%	4.07%	3.80%	3.85%	3.43%
Total Current Assets	36.30%	36.84%	42.36%	49.72%	54.42%	46.67%	52.04%	57.06%	61.96%	66.47%	70.82%
Plant, Property, & Equipment	71.43%	77.21%	74.41%	71.41%	69.36%	78.23%	75.07%	71.77%	68.46%	68.10%	54.92%
Less: Accumulated Depreciation	-14.28%	-13.30%	-22.32%	-24.99%	-27.35%	-29.34%	-31.28%	-32.89%	-34.23%	-35.26%	-29.18%
Net Plant, Property, & Equipment	57.14%	57.31%	52.09%	46.42%	41.97%	48.93%	43.79%	38.87%	34.23%	29.84%	25.74%
Other Noncurrent Assets	4.76%	5.26%	4.96%	4.88%	4.56%	4.43%	4.17%	4.07%	3.80%	3.85%	3.43%
Total Assets	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Liabilities											
Current Liabilities											
Accounts Payable	9.52%	5.16%	4.96%	4.76%	4.56%	4.35%	4.17%	3.99%	3.80%	3.62%	3.43%
Accrued Expenses	7.14%	0.84%	0.62%	0.80%	0.57%	0.64%	0.52%	0.50%	0.48%	0.45%	0.43%
Other Current Liabilities	7.14%	7.82%	7.44%	7.24%	6.94%	6.51%	6.29%	6.06%	5.71%	5.50%	5.15%
Total Current Liabilities	23.81%	13.62%	13.02%	12.80%	11.96%	11.50%	10.96%	10.55%	9.96%	9.57%	9.01%
Noncurrent Liabilities											
Long-Term Liabilities	33.33%	36.60%	34.73%	33.33%	31.96%	30.42%	29.19%	27.91%	26.62%	25.20%	24.00%
Other Noncurrent Liabilities	3.81%	4.22%	3.97%	3.90%	3.85%	3.56%	3.34%	3.27%	3.04%	2.97%	2.75%
Total Noncurrent Liabilities	37.14%	40.82%	38.69%	37.23%	35.81%	33.98%	32.53%	31.18%	29.67%	28.28%	26.77%
Owner Equity	39.05%	46.12%	46.28%	50.19%	52.49%	54.52%	56.52%	58.28%	60.35%	62.15%	64.21%
Total Liabilities and Owner Equity	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Figure 10-3 The Common Size Balance Sheet portion of the business planning starter workbook.

The Common Size Balance Sheet schedule has 19 rows with calculated data that express line-item amounts as percentages of the total. For the asset side of the Balance Sheet, assets are expressed as a percentage of the total assets. For the creditor and owner equity side of the Balance Sheet, equities are expressed as a percentage of the total liabilities and owner equity. The formulas for all rows except Total Assets and Total Liabilities and Owner Equity simply convert the Balance Sheet values to percentages. For example, the Cash & Equivalents formula for the first period is:

$$=B43/B$52$$

The formula for the second period is:

$$=C43/C\$52$$

and so on. All asset percentages are derived from dividing by total assets, which explains why the absolute reference to row \$52 is used in all asset formulas. Similarly, the absolute reference to row \$66 appears in all formulas in the liabilities and equity formulas.

The formula for the Total Assets percentage at any time is the sum of the Current Assets; the Net Plant, Property, & Equipment; and the Other Noncurrent Assets percentages. The result always equals 100 percent.

Similarly, the formula for the Total Liabilities and Owner Equity percentage at any time is the sum of the Current Liabilities, the Noncurrent Liabilities, and Owner Equity percentages. The result is always 100 percent.

Income Statement

The Income Statement schedule has 13 rows of calculated data (see Figure 10-4). As in other schedules, the period identifier simply numbers the periods for which values are calculated. The first period is stored in cell C99 as the integer 1, and periods that follow are stored as the previous period plus 1. The other values in the Income Statement are calculated as described in the following paragraphs.

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
Income Statement										
100 Sales Revenue	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000
101 Less: Cost of Sales	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)
102 Gross Margin	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
103										
104 Operating Expenses										
105 Cost Center 1	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
106 Cost Center 2	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
107 Cost Center 3	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
108 Total Operating Expenses	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
109 Operating Income	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
110										
111 Interest Income	1,900	1,569	1,829	3,107	3,471	3,293	3,739	5,149	5,646	7,179
112 Interest Expense	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
113 Net Income (Loss) Before Taxes	43,000	43,069	43,229	44,607	44,971	44,993	45,239	46,649	47,146	49,679
114										
115 Income Tax Expenses (Savings)	14,190	14,213	14,239	14,720	14,840	14,803	14,929	15,383	15,559	16,044
116 Net Income (Loss) After Taxes	\$28,810	\$28,856	\$28,990	\$29,887	\$30,130	\$30,090	\$30,310	\$31,266	\$31,587	\$33,635
117										
Common Size Income Statement										
120 Sales Revenue	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
121 Less: Cost of Sales	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
122 Gross Margin	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
123										
124 Operating Expenses										
125 Cost Center 1	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%
126 Cost Center 2	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%
127 Cost Center 3	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%	4.17%
128 Total Operating Expenses	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%	12.50%
129 Operating Income	37.50%	37.50%	37.50%	37.50%	37.50%	37.50%	37.50%	37.50%	37.50%	37.50%
130										
131 Interest Income	1.58%	1.31%	1.52%	2.59%	2.89%	2.83%	3.12%	4.29%	4.70%	5.98%
132 Interest Expense	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%
133 Net Income (Loss) Before Taxes	35.83%	35.88%	36.11%	37.17%	37.48%	37.38%	37.70%	38.87%	39.29%	40.97%
134										
135 Income Tax Expenses (Savings)	11.83%	11.84%	11.82%	12.27%	12.37%	12.34%	12.44%	12.82%	12.97%	13.39%
136 Net Income (Loss) After Taxes	24.01%	24.05%	24.19%	24.91%	25.11%	25.05%	25.26%	26.04%	26.32%	27.15%

Figure 10-4 The Income Statement and Common Size Income Statement areas of the business planning starter workbook.



Sales Revenue

The Sales Revenue figures are the estimates you enter in the inputs area of the business planning starter workbook. The amount for the period is the value you enter in the inputs area of the business planning starter workbook.

Less: Cost of Sales

The Cost Of Sales figures are the Cost of Sales estimates you enter in the inputs area of the business planning starter workbook.

Gross Margin

The Gross Margin figures show the amounts left over from the sales proceeds after subtracting Cost of Sales. Subtracting your other expenses from the Gross Margin amount gives you your profit figure. The Gross Margin formula is Sales Revenue for the period minus Cost of Sales. For example, the formula for the first period is:

`=C100+C101`

The formula for the second period is:

`=D100+D101`

and so on. Notice that because the Cost of Sales figures are pulled into the Income Statement schedule as negative amounts, the Gross Margin formula simply adds the Sales Revenue figure to the negative Cost of Sales figure.

Operating Expenses – Cost Centers 1, 2, and 3

The Operating Expenses figures for Cost Centers 1, 2, and 3 show the amount for each operating expense classification or category that you enter in the inputs area of the business planning starter workbook.

Total Operating Expenses

The Total Operating Expenses figures show the sums of the operating expenses you enter in the inputs area of the business planning starter workbook for these three operating expense categories or classifications. The total for each period is the sum of the operating expenses for Cost Centers 1, 2, and 3. For example, the formula for the first period is:

`=SUM(C105:C107)`

The formula for the second period is:

`=SUM(D105:D107)`

and so on.

Operating Income

The Operating Income figures show the sales dollar amounts left after paying the Cost of Sales and the Operating Expenses. The Operating Income figures represent the amounts that go toward paying your financing expenses and income tax, and the amount that constitutes your profits. The amount for each period is the Gross Margin figure for the period minus the Total Operating Expenses figure. For example, the formula for the first period is:

=C102-C108

The formula for the second period is:

=D102-D108

and so on.

Interest Income

The Interest Income figures show the earnings from investing the cash of the business. The amount for each period is the beginning Cash & Equivalents balance from the inputs area of the business planning starter workbook times the period yield on Cash & Equivalents. For example, the formula for the first period is:

=B43*C5

The formula for the second period is:

=C43*D5

and so on.

Interest Expense

The Interest Expense figures show the costs of using borrowed funds for operations and asset purchases. The amount for each period is the value you enter in the inputs area of the business planning starter workbook.

Net Income (Loss) Before Taxes

The Net Income (Loss) Before Taxes figures show the amount of operating income left after receiving any interest income and paying any interest expense. The amount for each period is the Operating Income figure for the period plus the Interest Income figure for the period minus the Interest Expense figure for the period. For example, the formula for the first period is:

=C109+C111-C112

The formula for the second period is:

=D109+D111-D112

and so on.

Income Tax Expenses (Savings)

The Income Tax Expenses (Savings) figures show the income tax expenses (or savings) that use the calculated Net Income (Loss) Before Taxes figures and the Marginal Income Tax Rate figures you forecasted in the inputs area of the business planning starter workbook. Notice that the model calculates a current period savings in income taxes when there is a net loss before taxes. This might be the case when a current period loss is carried back to a prior period or when the current period loss is consolidated with the current period income of related businesses. Basically, then, the model assumes that a net loss before income taxes results in a current period tax refund—that is, an overall tax savings—because you can deduct a loss in one business from the profits of another business. However, if a current period loss does not result in a current period income tax savings, you need to modify the formula, as described in the section “Customizing the Starter Workbook.”

The amount for each period is the Net Income (Loss) Before Taxes times the Marginal Income Tax Rate figure. For example, the formula for the first period is:

=C37*C113

The formula for the second period is:

=D37*D113

and so on.

Net Income (Loss) After Taxes

The Net Income (Loss) After Taxes figures calculate the after-tax profits of operating the business. The amount for each period is the Net Income (Loss) Before Taxes figure minus the Income Tax Expenses (Savings) figure. For example, the formula for the first period is:

=C113-C115

The formula for the second period is:

=D113-D115

and so on.



Common Size Income Statement

The Common Size Income Statement schedule lists, in income statement format, what percentage of the total sales revenue each income statement line item represents (see Figure 10-4). When you compare these percentages against those of business peers, you can see the relative financial performance of your business. Trends in the percentages over the forecasting horizon can indicate improvement or deterioration in the financial performance of your business.

The Common Size Income Statement schedule has 13 rows of calculated data that express the component line-item amount for each period as a percentage of the sales revenue figure for the period. The formulas for all rows except Sales Revenue simply convert the Income Statement values to percentages.

The Sales Revenue figures add the Cost of Sales, Total Operating Expenses, Interest Income, Interest Expense, Income Tax Expenses (Savings), and Net Income (Loss) After Taxes percentages. The results always equal 100 percent.

NOTE *The Sales Revenue percentage calculations adds the expense and profit percentages. Those expenses shown as negative amounts, therefore, are subtracted.*

Cash Flow Statement

The Cash Flow Statement schedule has 16 rows of calculated data (see Figure 10-5). As in other schedules, a period identifier numbers the periods for which values are calculated. The first period is stored in cell C141 as integer 1. Periods that follow are stored as the previous period plus 1. Other Cash Flow Statement values are calculated as described in the paragraphs that follow.

The screenshot shows a Microsoft Excel spreadsheet with two tables. The first table is the Cash Flow Statement, and the second is the Financial Ratios Table. Both tables have columns for Period 1 through Period 10.

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
141 Cash Flow Statement										
142 Beginning Cash Balance	\$15,000	\$15,685	\$16,291	\$31,071	\$34,708	\$33,569	\$37,394	\$51,454	\$56,457	\$71,795
143 Sources of Cash										
144 Net Income After Taxes	\$28,810	\$29,856	\$28,030	\$29,897	\$30,130	\$30,055	\$30,310	\$31,252	\$31,588	\$32,615
145 Addback of Depreciation	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	3,750	(6,250)
147 Accounts Payable Financing	(5,000)	0	0	0	0	0	0	0	0	0
146 Accrued Expenses Financing	(8,975)	0	0	0	0	0	0	0	0	0
143 Other Current Liabilities Financing	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)
150 Long-Term Liabilities Financing	0	0	0	0	0	0	0	0	0	0
151 Other Noncurrent Liabilities Financing	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)
152 Uses of Cash										
154 Accounts Receivable Investments	0	0	0	0	0	0	0	0	0	0
155 Inventory Investments	(5,000)	5,000	(5,000)	5,000	(5,000)	5,000	(5,000)	5,000	(5,000)	5,000
156 Other Current Assets Investments	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)
157 Plant, Property, & Equip Investments	0	0	0	0	15,000	0	0	0	0	(10,000)
158 Other Noncurrent Assets Investments	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)
153 Other Owner Equity Changes	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
160 Net Cash Generated (Used)	695	2,686	12,789	2,637	(1,120)	3,895	14,069	6,002	15,338	6,285
161 Ending Cash Balance	\$15,685	\$16,291	\$31,071	\$34,708	\$33,569	\$37,394	\$51,454	\$56,457	\$71,795	\$78,100
165 Financial Ratios Table										
166 Working Capital Ratios:										
167 Current Ratio	2.71	3.30	3.87	4.55	4.06	4.75	5.41	6.21	6.95	7.86
168 Quick Ratio	1.94	2.16	2.11	2.41	3.30	3.61	4.65	5.06	6.18	6.72
169 Working Capital to Total Assets	0.23	0.30	0.36	0.42	0.35	0.41	0.47	0.52	0.57	0.62
170 Receivables Turnover	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
171 Inventory Turnover	12.00	6.00	12.00	6.00	12.00	6.00	12.00	6.00	12.00	6.00
172 Operating Ratios:										
173 Times Interest Earned	13.29	13.31	13.30	13.74	13.95	13.92	13.93	14.33	14.47	14.91
174 Sales to Operational Assets	2.13	2.29	2.46	2.67	2.15	2.29	2.46	2.67	2.91	3.20
175 Return on Total Assets	33.26%	32.16%	30.98%	30.43%	29.23%	27.98%	26.96%	26.44%	25.38%	24.78%
176 Return on Equity	64.29%	59.29%	55.09%	51.90%	48.04%	44.35%	41.48%	39.39%	36.76%	34.87%
177 Investment Turnover	1.24	1.15	1.14	1.09	1.04	1.00	0.96	0.91	0.87	0.82
178 Financial Leverage	31.03%	27.15%	24.11%	21.47%	18.81%	16.30%	14.51%	12.96%	11.38%	10.08%

Figure 10-5 The Cash Flow Statement and Financial Ratios Table areas of the business planning starter workbook.

Beginning Cash Balance

The Beginning Cash Balance figures show the forecasted cash and equivalents balance at the start of each forecasting period. The starting balance is the value you enter in the inputs area of the business planning starter workbook. For subsequent periods, the Beginning Cash Balance is the previous period's Ending Cash Balance.

Net Income After Taxes

The Net Income After Taxes figures show the amounts calculated in the Income Statement schedule as the business profits for each forecasting period.

Addback of Depreciation

The Addback of Depreciation figures show the change in the accumulated depreciation balance for each forecasting period. Normally, this change stems from the period depreciation expense; it must be added back into the Net Income After Taxes figure because the depreciation expense uses no cash. The depreciation added back for each period is the value you enter in the inputs area of the business planning starter workbook as the change in accumulated depreciation.

Accounts Payable Financing

The Accounts Payable Financing figures show the change in the Accounts Payable balance for the period. Increases in this balance result when the cost of sales expense paid during

the period is lower than the expense incurred. Decreases in this balance result when the cost of sales expense paid is higher than the expense incurred. By recognizing the changes in this account balance, the model adjusts for differences between the Income Statement's accrual-based accounting of cost of sales expenses and the actual cash disbursements for costs of sales expenses.

The Accounts Payable Financing figure for each period is the difference between the Accounts Payable balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C57-B57$$

The formula for the second period is:

$$=D57-C57$$

and so on.

Accrued Expenses Financing

The Accrued Expenses Financing figures show the change in the accrued expenses balance for the period. Increases in this balance result when the operating expense paid during the period is lower than the expense incurred. Decreases in this balance result when the operating expense paid during the period is higher than the expense incurred. By recognizing the changes in this account balance, the model adjusts for differences between the Income Statement's accrual-based accounting expenses and the actual cash disbursements for operating expenses.

The Accrued Expenses Financing figure for each period is the difference between the Accrued Expenses balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C58-B58$$

The formula for the second period is:

$$=D58-C58$$

and so on.

Other Current Liabilities Financing

The Other Current Liabilities Financing figures show the change in the Other Current Liabilities balance for the period. This amount increases when, either directly or indirectly, cash is generated by borrowing. This amount decreases when, either directly or indirectly, cash is used to pay off short-term borrowing.

The Other Current Liabilities Financing figure for each period is the difference between the Other Current Liabilities balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C59-B59$$

The formula for the second period is:

$$=D59-C59$$

and so on.

Long-Term Liabilities Financing

The Long-Term Liabilities Financing figures show the changes in the long-term liabilities amount for the period. This balance increases when, either directly or indirectly, cash is generated by long-term borrowing. This amount decreases when, either directly or indirectly, cash is used to pay off long-term borrowing.

The Long-Term Liabilities Financing figure for each period is the difference between the Long-Term Liabilities balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C62-B62$$

The formula for the second period is:

$$=D62-C62$$

and so on.

Other Noncurrent Liabilities Financing

The Other Noncurrent Liabilities Financing figures show the changes in the Other Noncurrent Liabilities balance for the period. This amount increases when, either directly or indirectly, cash is generated by other long-term borrowing. This amount decreases when, either directly or indirectly, cash is used to pay off other long-term borrowing.

The Other Noncurrent Liabilities Financing figure for each period is the difference between the Other Noncurrent Liabilities balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C63-B63$$

The formula for the second period is:

$$=D63-C63$$

and so on.



Accounts Receivable Investments

The Accounts Receivable Investments figures show the change in the Accounts Receivable balance for each forecasting period. This amount increases when the sales revenue collected during the period is less than the revenue recorded. This amount decreases when the sales revenue collected during the period is more than recorded. By recognizing the changes in the account balance, the model adjusts for differences between the income statement's accrual-based accounting of sales revenues and the actual cash collections for sales.

The Accounts Receivable Investments figure for each period is the difference between the Accounts Receivable balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C44-B44$$

The formula for the second period is:

$$=D44-C44$$

and so on.

Inventory Investments

The Inventory Investments figures show the change in the inventory balance for each forecasting period. This amount increases when the inventory sold is less than the inventory acquired. This amount decreases when the inventory sold is more than the inventory acquired. By recognizing the changes in this account balance, the model recognizes the cash effects of changing inventory balances.

The Inventory Investments figure for each period is the difference between the Inventory balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

$$=C45-B45$$

The formula for the second period is:

$$=D45-C45$$

and so on.

Other Current Assets Investments

The Other Current Assets Investments figures show the changes in the Other Current Assets balance for the period. This amount increases when, either directly or indirectly, cash is used to acquire current assets. This amount decreases when indirectly or directly cash is generated by converting current assets to cash.

The Other Current Assets Investments figure for each period is the difference between the Other Current Assets balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

=C46-B46

The formula for the second period is:

=D46-C46

and so on.

Plant, Property, & Equip Investments

The Plant, Property, & Equip Investments figures show the change in the Plant, Property, & Equipment balance for the period. This amount increases when, either directly or indirectly, cash is used to acquire plants, property and equipment. This amount decreases when, either directly or indirectly, cash is generated by converting plants, property, and equipment to cash.

The Plant, Property, & Equip Investments figure for each period is the difference between the Plant, Property, & Equipment balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

=C48-B48

The formula for the second period is:

=D48-C48

and so on.

Other Noncurrent Assets Investments

The Other Noncurrent Assets Investments figures show the changes in the Other Noncurrent Assets balance for the period. This amount increases when, either directly or indirectly, cash is used to acquire other noncurrent assets. This amount decreases when, either directly or indirectly, cash is generated by converting other noncurrent assets to cash.

The Other Noncurrent Assets Investments figure for each period is the difference between the Other Noncurrent Assets balance at the end of the previous period and the balance at the end of the current period. For example, the formula for the first period is:

=C51-B51

The formula for the second period is:

```
=D51-C51
```

and so on.

Other Owner Equity Changes

The Other Owner Equity Changes figures show the cash flows stemming from any additional capital contributions made by the owners to the business or from dividends and other distributions made by the business to the owners. The Other Owner Equity Changes figure is the value you enter in the inputs area of the business planning starter workbook. The Other Owner Equity Changes figures are pulled into the Uses of Cash section as negative values because a positive change in the owner equity, such as an additional capital contribution, such as from a stock offering, doesn't use cash but provides cash; and a negative change in the owner equity, such as a dividend, does use cash.

Net Cash Generated (Used)

The Net Cash Generated (Used) figures show the total cash flow for each period of the forecasting horizon, based on the listed sources and uses of cash. The amount for each period is the sources of cash for the period less the uses of cash for the period. For example, the formula for the first period is:

```
=SUM(C145:C151)-SUM(C154:C159)
```

The formula for the second period is:

```
=SUM(D145:D151)-SUM(D154:D159)
```

and so on.

Ending Cash Balance

The Ending Cash Balance figures show the forecasted cash and equivalents balance at the end of each period. The balance is the Beginning Cash Balance figure for the period plus the Net Cash Generated (Used) figure for the period. For example, the formula for the first period is:

```
=C142+C160
```

The formula for the second period is:

```
=D142+D160
```

and so on.

Financial Ratios Table

The Financial Ratios Table has 11 rows of calculated data (see Figure 10-5). As in other schedules, the period identifier numbers the periods for which values are calculated. The first period is stored in cell C165 as the integer 1, and periods that follow are stored as the previous period plus 1. The other values in the Financial Ratios Table are calculated as described in the following paragraphs.

Current Ratio

The Current Ratio figures show the ratio of current assets to current liabilities. The current ratio provides one measure of a business's ability to meet its short-term obligations. The Current Ratio figure for each period is the Total Current Assets figure from the Balance Sheet schedule divided by the Total Current Liabilities figure. For example, the formula for the first period is:

=C47/C60

The formula for the second period is:

=D47/D60

and so on.

Quick Ratio

The Quick Ratio figures show the ratio of the sum of the cash and equivalents plus the accounts receivable to the current liabilities. The quick ratio provides a more stringent measure of a business's ability to meet its short-term financial obligations than other ratios. The Quick Ratio figure for each period is the sum of the Cash & Equivalents figure and the Accounts Receivable figure divided by the Total Current Liabilities figure. For example, the formula for the first period is:

=(C43+C44)/C60

The formula for the second period is:

=(D43+D44)/D60

and so on.

Working Capital to Total Assets

The Working Capital to Total Assets figures show the ratio of working capital (the current assets minus the current liabilities) to the total assets. The Working Capital to Total Assets ratio is another measure of a firm's ability to meet its financial obligations and gives an indication as to the distribution of a business's assets into liquid and nonliquid resources.

The Working Capital to Total Assets ratio for each period is calculated by dividing the difference between the Current Assets and Current Liabilities figures by the Total Assets figure. For example, the formula for the first period is:

$$=(C47-C60)/C52$$

The formula for the second period is:

$$=(D47-D60)/D52$$

and so on.

Receivables Turnover

The Receivables Turnover figures show the ratio of sales to the accounts receivable balance. The Receivables Turnover ratio indicates the efficiency of sales collections. One problem with the measure as it's usually applied is that both credit and cash sales might be included in the ratio denominator. Two potential shortcomings exist with this approach. First, the presence of the cash sales might make the receivables collections appear more efficient than is the case. Also, mere changes in the mix of credit and cash sales might affect the ratio, even though the efficiency of the receivables collections process has not changed.

The Receivables Turnover figure for each period is calculated by dividing the Sales Revenue figure for the period by the Accounts Receivable balance outstanding at the end of the period. For example, the formula for the first period is:

$$=C100/C44$$

The formula for the second period is:

$$=D100/D44$$

and so on.

Inventory Turnover

The Inventory Turnover row shows the ratio of the cost of sales to the inventory balance. The Inventory Turnover ratio calculates how long inventory is held. It can indicate depleted or excessive inventory balances. The Inventory Turnover ratio for each period is calculated by dividing the Cost of Sales figure for the period by the inventory held at the end of the period. For example, the formula for the first period is:

$$=-C101/C45$$

The formula for the second period is:

$$=-D101/D45$$

and so on.

Times Interest Earned

The Times Interest Earned row shows the ratio of the sum of the net income after taxes plus the interest income to the interest expense. The ratio indicates the relative ease with which the business is paying its financing costs. The Times Interest Earned ratio for each period is calculated by dividing the sum of the Operating Income and Interest Income figures from the Income Statement schedule by the Interest Expense figure. For example, the formula for the first period is:

$$=(C109+C111) / C112$$

The formula for the second period is:

$$=(D109+D111) / D112$$

and so on.

Sales to Operational Assets

The Sales to Operational Assets row shows the ratio of sales of sales revenue to net plant, property, and equipment. The ratio indicates the efficiency with which a business uses its operational assets to generate sales revenue. The Sales to Operational Assets ratio for each period is the Sales Revenue figure you enter in the inputs area of the business planning starter workbook divided by the Net Plant, Property, & Equipment figure from the Balance Sheet schedule. For example, the formula for the first period is:

$$=C100 / C50$$

The formula for the second period is:

$$=D100 / D50$$

and so on.

Return on Total Assets

The Return on Total Assets row shows the ratio of the sum of the net income after taxes plus the interest expense to the total assets for each period. The ratio indicates the overall operating profitability of the business, expressed as a rate of return on the business assets. The formula for the first period is:

$$=(C16+C112) / C52$$

The formula for the second period is:

$$=(D116+D112) / D52$$

and so on.

Return on Equity

The Return on Equity row shows the ratio of the net income after taxes to the owner equity for each period. The ratio indicates the profitability of the business as an investment of the owners. The Return on Equity ratio for each period is the Net Income (Loss) After Taxes figure from the Income Statement schedule divided by the Owner Equity figure from the Balance Sheet schedule. For example, the formula for the first period is:

=C116/C65

The formula for the second period is:

=D116/D65

and so on.

Investment Turnover

The Investment Turnover row shows the ratio of the sales revenue to the total assets. The ratio, like the Sales to Operational Assets ratio, indicates the efficiency with which a business uses its assets (in this case, its total assets) to generate sales. The Investment Turnover ratio for each period is the Sales Revenue figure you enter in the inputs area of the business planning starter workbook divided by the Total Assets figure from the Balance Sheet schedule. For example, the formula for the first period is:

=C100/C52

The formula for the second period is:

=D100/D52

and so on.

Financial Leverage

The Financial Leverage row shows the difference between the return on the owner equity and the return on the total assets. The ratio indicates the increase or decrease in an equity return as a result of borrowing. A positive value indicates an improvement in the return on owner equity by using financial leverage; a negative value indicates deterioration in the return on owner equity. The Financial Leverage figure for each period is the Return on Total Assets figure minus the Return on Equity figure. For example, the formula for the first period is:

=C176-C175

The formula for the second period is:

=D176-D175

and so on.



Customizing the Starter Workbook

You can use the business planning starter workbook for many business projections. However, you might want to change the starter workbook so that it more closely matches your requirements. For example, you can add text that describes the business and the forecasting horizon. You can increase or decrease the number of periods. For example, you can increase the number of periods to 12 if your periods are months and you want to forecast an entire year. Before you change anything on the starter workbook other than the forecasting inputs, unprotect the document.

NOTE *Unless you turn off cell protection, input cells in the inputs area of the business planning starter workbook are the only cells into which you can enter data.*

Changing the Number of Periods

You can rather easily increase or decrease the number of forecasting periods. To increase the number of periods, remove the borders from the last column; then copy the current last column to the right as needed. To decrease the number of periods, simply delete any unneeded column from the right side of the schedule. When you finish these steps, you can replace the borders on the right and reinstate cell protection as needed.

Ratio Analysis on Existing Financial Statements

If you want to perform financial ratio analysis on a set of existing financial statements, copy the contents of column C, from the row in the inputs area of the business planning starter workbook that contains the sales revenue forecast (row 31) through the last row of the ratios table, into column B. Then remove the columns for periods 1 through 10 (columns C through L), following the steps described in the preceding section, “Changing the Number of Periods.” Optionally, you can delete the Cash Flow Statement and add appropriate column headings as needed.

To use the modified starter workbook, enter the necessary Balance Sheet and Income Statement data in each of the unshaded cells in column B of the inputs area of the business planning starter workbook. (Typically, the “as of” date of the Balance Sheet and the ending date of the Income Statement period are the same.)

Calculating Taxes for a Current Net Loss Before Taxes

To calculate the income tax expense as 0 when there is a current period net loss before income taxes, you need to edit the formula in the cell that calculates the income tax expense (or savings) for the first period (cell C115) so that it takes the maximum of the calculated expense amount or 0 by using the MAX function:

```
=MAX(C37*C113,0)
```

Once you've done this, you can copy the formula into the rest of the cells in the forecasting horizon that calculate the income tax expense (or savings).

Combining This Workbook with Other Workbooks

Other starter workbooks on the *MBA's Guide to Microsoft Excel 2000's* companion CD are specifically designed to provide data to the financial statements with ratios workbook. For example, you might construct an asset depreciation schedule that uses the straight-line depreciation convention for a \$25,000 asset representing your entire plant, property, and equipment investment and then use this data in the business planning starter workbook.

If you want to use workbooks together in this manner, you should combine the workbooks into a single workbook. The easiest way to copy one of the workbooks is to copy the workbook's worksheet to a blank worksheet in the other workbook. (Each of the starter workbooks uses only a single worksheet to make this process both easy and possible.)

If you wanted to combine an asset depreciation workbook with the business planning starter workbook, for example, you might open both workbooks, copy the asset depreciation worksheet to the clipboard, add a new sheet to the business planning starter workbook (such as by choosing the Insert menu's Worksheet command), and then paste the asset depreciation worksheet into the newly added, blank worksheet in the business planning starter workbook.

