

TU„T1,,

Automated Decision Making in Business and Economics

What to do and what not to do

Pro forma statements

General accepted definition

The term **pro forma** comes from Latin, meaning “for the sake of form”.

- ▶ Hypothetical or projected reports (e.g., income statements, balance sheets, cash flow statements) that are prepared using assumptions about future events or transactions.
- ▶ They are used to show how a company's financial position or results might appear if certain anticipated **decisions** (mergers, acquisitions, capital raises, or policy adjustments) were to occur.
- ▶ They are **not historical statements**, but rather simulations that help investors, analysts, and other stakeholders make more informed decisions by considering various what-if scenarios.

Pro forma statements

The first step in valuation typically consists in projecting **income statements** and **balance sheets** in the near future.

We need assumptions on how the income statement and the balance sheets will evolve.

The assumptions are typically **calibrated** looking at past reported information.

Pro forma statements are thus forecasts of the future financial performance of the company, **based on some assumptions**.

Income Statement

A proto-typical income statement (amounts in k\$).

Income statement is a **flow** variable.

| | |
|-----------------------|-------|
| REVENUES (FROM SALES) | 1,000 |
| COST OF GOODS SOLD | (500) |
| DEPRECIATION | (100) |
| OPERATING INCOME | 400 |
| INTEREST EXPENSE | (32) |
| INTEREST EARNED | 6 |
| EARNINGS BEFORE TAXES | 374 |
| TAXES | (150) |
| NET EARNINGS | 225 |
| DIVIDENDS | (90) |
| RETAINED EARNINGS | 135 |

Reported Balance Sheet

Balance sheet is a **stock** variable.

Assets

| | |
|--------------------------------|-------|
| CASH AND MARKETABLE SECURITIES | 80 |
| CURRENT ASSETS | 150 |
| FIXED ASSETS (PPE) | |
| AT COST | 1,070 |
| ACCUMULATED DEPRECIATION | (300) |
| NET FIXED ASSETS | 770 |
| TOTAL ASSETS | 1,000 |

Liabilities and Equity

| | |
|-------------------------------|-------|
| CURRENT LIABILITIES | 80 |
| LONG TERM DEBT | 320 |
| STOCK | 450 |
| ACCUMULATED RETAINED EARNINGS | 150 |
| STOCKHOLDERS' EQUITY | 600 |
| TOTAL LIABILITIES AND EQUITY | 1,000 |

The percentage of sales model

In this model, we start from an assumption on the growth rate in revenues from sales. **Sales are considered the key driver.**

We then assume that other income statement and balance sheet items are a fixed percentage of the sales.

Figures are extrapolated from past information. Sensible discretion is needed.

Example:

| | |
|--------------------------------|-----------|
| Forecasted annual sales growth | 10% |
| COGS/Sales | 50% |
| Depreciation/Gross PPE | 10% |
| Net fixed assets/Sales | 77% |
| Interest rate on debt | 10% |
| Interest rate earned | 8% |
| Tax rate | 40% |
| Debt | no change |
| Dividends | no change |

Forecasting growth rates

The most important variable is the **sales' growth rate**.

- ▶ It makes sense to estimate it using the past growth rates.
- ▶ It also makes sense to consider the industry outlook.
- ▶ Mature companies likely display a constant growth rate.

The circularity problem

When projecting the income statement and the balance sheet in the future, we have the problem that they depend on each other.

The income statement determines the balance sheet.

The balance sheet affects the income statement via depreciation and interest expenses.

We can solve this problem using numerical techniques (iteration).

Plugs

The problem is solved using a **plug**.

The plug is an item in the balance sheet that is used to make total assets equal to total liabilities and equity at all time.

We can use an asset plug (cash) or a liability plug (notes payable) or both.

Negative cash as a result of a plug means we need more debt to finance the assets.

Negative liability as a result of a plug means we have additional cash.

EXERCISE 1: DEBT PLUG

Solve for the debt plug using the following assumptions:

Current Assets/Sales 20%

Fixed Assets/Sales 50%

Current Liabilities/Sales 15%

EQUITY \$40,000

DEBT Plug

SALES \$100,000

 Debt Plug

We are given the following empty balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|---|---|--------------------------|---|---|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | | |
| 5 | | Current Assets/Sales | | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | | | Total Assets | | |
| 7 | | Current Liabilities/Sales | | | | | |
| 8 | | EQUITY | | | Current Liabilities | | |
| 9 | | DEBT | | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | | | Total Liabilities+Equity | | |

Asset = anything that you own.

- **Liquid assets:** Cash and cash equivalent
- **Tangible assets:** real estate like buildings and land; and business equipment such as machinery and vehicles;
- **Intangible assets:** Patents, investments like stocks and bonds;
- **Noncurrent assets:** accounts receivable, futures.

Liability = anything that you owe.

- **Current liabilities:** Anything due within a year including accounts payable, interest payable, short-term business loans and taxes payable;
- **Long-term liabilities:** Anything due in more than a year, including bonds payable, notes payable, deferred tax and mortgages. These might also appear on your business debt schedule;
- **Contingent liabilities:** An obligation that might happen, depending on the occurrence or outcome of another event, such as a lawsuit;

Equity = Assets-Liabilities

Amount of money that would be returned to a company's shareholders if all of the assets were liquidated and all of the company's debts paid off.

| | A | B | C | D | E | F | G |
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| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | | | | Current Assets | | |
| 5 | | Current Assets/Sales | | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | | | Total Assets | | |
| 7 | | Current Liabilities/Sales | | | | | |
| 8 | | EQUITY | | | Current Liabilities | | |
| 9 | | DEBT | | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | | | Total Liabilities+Equity | | |

Any **asset** which can reasonably be expected to be sold, consumed, or exhausted through the normal operations within the current **fiscal year**. Typical **current assets** include **cash**, **cash equivalents**, short-term investments.

Such assets are expected to be realised in cash or consumed during the normal operating cycle of the business.

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| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | | | | <u>Current Assets</u> | | |
| 5 | | Current Assets/Sales | | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | | | Total Assets | | |
| 7 | | Current Liabilities/Sales | | | | | |
| 8 | | EQUITY | | | Current Liabilities | | |
| 9 | | DEBT | | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | | | Total Liabilities+Equity | | |

Also known as long-lived assets or property, plant and equipment (**PP&E**), they are assets/properties that may not easily be converted into cash. In most cases, only tangible assets are referred to as fixed.

Current assets = liquid (easily sold/bought)

Fixed assets = illiquid (difficult to be sold/bought)

| | A | B | C | D | E | F | G |
|----|--|---|---|---|--------------------------|---|---|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | <div>Current Assets/Sales</div> <div>Fixed Assets/Sales</div> <div>Current Liabilities/Sales</div> <div>EQUITY</div> <div>DEBT</div> <div>SALES</div> | | | Current Assets | | |
| 5 | | | | | <u>Fixed Assets</u> | | |
| 6 | | | | | Total Assets | | |
| 7 | | | | | Current Liabilities | | |
| 8 | | | | | Debt | | |
| 9 | | | | | Equity | | |
| 10 | | | | | Total Liabilities+Equity | | |
| 11 | | | | | | | |

All liabilities of the business that are to be settled in cash within the fiscal year or the operating cycle of a given firm

| | A | B | C | D | E | F | G |
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| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | | |
| 5 | | Current Assets/Sales | | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | | | Total Assets | | |
| 7 | | Current Liabilities/Sales | | | | | |
| 8 | | EQUITY | | | <u>Current Liabilities</u> | | |
| 9 | | DEBT | | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | | | Total Liabilities+Equity | | |

Amount owed for funds borrowed.

| | A | B | C | D | E | F | G |
|----|--|--|---|---|--------------------------|---|---|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | Current Assets/Sales Fixed Assets/Sales Current Liabilities/Sales EQUITY DEBT SALES | | | Current Assets | | |
| 5 | | | | | Fixed Assets | | |
| 6 | | | | | Total Assets | | |
| 7 | | | | | | | |
| 8 | | | | | Current Liabilities | | |
| 9 | | | | | <u>Debt</u> | | |
| 10 | | | | | Equity | | |
| 11 | | | | | Total Liabilities+Equity | | |

Value of the assets after all liabilities have been subtracted

| | A | B | C | D | E | F | G |
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| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | | | | Current Assets | | |
| 5 | | Current Assets/Sales | | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | | | Total Assets | | |
| 7 | | Current Liabilities/Sales | | | | | |
| 8 | | EQUITY | | | Current Liabilities | | |
| 9 | | DEBT | | | Debt | | |
| 10 | | | | | <u>Equity</u> | | |
| 11 | | SALES | | | Total Liabilities+Equity | | |

We first input the assumptions that define the problem.

EXERCISE 1: DEBT PLUG

Solve for the debt plug using the following assumptions:

| | |
|---------------------------|-----------|
| Current Assets/Sales | 20% |
| Fixed Assets/Sales | 50% |
| Current Liabilities/Sales | 15% |
| EQUITY | \$40,000 |
| DEBT | Plug |
| SALES | \$100,000 |

Introduction to Pro Forma Statements

Assumptions

Current Assets/Sales
Fixed Assets/Sales
Current Liabilities/Sales
EQUITY
DEBT
SALES

The balance sheet

| | |
|--------------------------|--|
| Current Assets | |
| Fixed Assets | |
| Total Assets | |
| Current Liabilities | |
| Debt | |
| Equity | |
| Total Liabilities+Equity | |

We first input the assumptions that define the problem.

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Introduction to Pro Forma Statements

Assumptions

| | |
|---------------------------|-----------|
| Current Assets/Sales | 20% |
| Fixed Assets/Sales | 50% |
| Current Liabilities/Sales | 15% |
| EQUITY | \$40,000 |
| DEBT | Plug |
| SALES | \$100,000 |

The balance sheet

| | |
|--------------------------|--|
| Current Assets | |
| Fixed Assets | |
| Total Assets | |
| Current Liabilities | |
| Debt | |
| Equity | |
| Total Liabilities+Equity | |

We compute the corresponding quantities on the balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|---|---|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | | | | Current Assets | | |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | | |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | | |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

We compute the corresponding quantities on the balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | | Assumptions | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | | |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | | |
| 7 | | Current Liabilities/Sales | 15% | | Current Liabilities | | |
| 8 | | EQUITY | \$40,000 | | Debt | | |
| 9 | | DEBT | Plug | | Equity | | |
| 10 | | | | | | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

We compute the corresponding quantities on the balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | | |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | | |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

Total assets are simply the sum of all types of assets you have.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
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| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | | |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

Again, we use the assumptions to fill up all the items in the balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

Debt is our “Plug”, so we'll leave it for last ...

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

Again, we use the assumptions to fill up all the items in the balance sheet.

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 8 | | EQUITY | \$40,000 | | Debt | | |
| 9 | | DEBT | Plug | | Equity | \$40,000.0 | =C8 |
| 10 | | | | | | | |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

We have all the ingredients to fix the plug:

$$\text{Total assets} = \underbrace{\text{Current Liabilities} + \text{Debt}}_{\text{Total Liabilities}} + \text{Equity}$$

Total Liabilities

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|---------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | | |
| 10 | | | | | Equity | \$40,000.0 | =C8 |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

We have all the ingredients to fix the plug:

$$\text{Total assets} = \text{Current Liabilities} + \underbrace{\text{Debt} + \text{Equity}}_{\text{Total Liabilities}}$$

Total Liabilities

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|------------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | \$15,000.0 | =F6-F8-F10 |
| 10 | | | | | Equity | \$40,000.0 | =C8 |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | | |

Sum up total liabilities with equity

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|------------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | =C5*C11 |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | \$15,000.0 | =F6-F8-F10 |
| 10 | | | | | Equity | \$40,000.0 | =C8 |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | \$70,000.0 | =F8+F9+F10 |

$$\text{Total Assets} = \text{Total Liabilities} + \text{Equity}$$

| | A | B | C | D | E | F | G |
|----|--|---------------------------|-----------|---|--------------------------|------------|------------|
| 1 | <u>Introduction to Pro Forma Statements</u> | | | | | | |
| 2 | | | | | | | |
| 3 | Assumptions | | | | The balance sheet | | |
| 4 | | | | | Current Assets | \$20,000.0 | |
| 5 | | Current Assets/Sales | 20% | | Fixed Assets | \$50,000.0 | =C6*C11 |
| 6 | | Fixed Assets/Sales | 50% | | Total Assets | \$70,000.0 | =F4+F5 |
| 7 | | Current Liabilities/Sales | 15% | | | | |
| 8 | | EQUITY | \$40,000 | | Current Liabilities | \$15,000.0 | =C7*C11 |
| 9 | | DEBT | Plug | | Debt | \$15,000.0 | =F6-F8-F10 |
| 10 | | | | | Equity | \$40,000.0 | =C8 |
| 11 | | SALES | \$100,000 | | Total Liabilities+Equity | \$70,000.0 | =F8+F9+F10 |

EXERCISE 2: CASH PLUG AND PROJECTION

Simon Benninga, Financial Modeling, 4th edition.

Solve, for the year 0, for the “Cash and marketable securities” (C&MS) plug using the following assumptions.

| | | | |
|-------------------------------|-------|-----------------------|---------|
| Sales growth | 10% | Interest rate on C&MS | 8% |
| Current Assets/Sales | 15% | Tax rate | 40% |
| Current Liabilities/Sales | 8% | Dividend payout ratio | 40% |
| Net fixed Assets/Sales | 77% | Sales | \$1,000 |
| Costs of goods sold/Sales | 50% | Depreciation | -\$300 |
| Depreciation rate | 10% | Long-term debt | \$320 |
| Interest rate on debt | 10% | Stock | \$450 |
| Accumulated retained earnings | \$150 | | |

Project the model up to five years (1,2,...,5) assuming constant debt and stock.



Cash plug and projection

Income Statement =====

The Income Statement summarizes company's revenues and expenses **over a specific period**, typically a quarter or a year. Its main goal is to show the company's ability to generate profit during that period.

- **Key Components:**
 1. **Revenues:** All the income generated by the company.
 2. **Cost of Goods Sold (COGS):** The direct costs of producing the goods or services sold.
 3. **Operating Expenses:** General and administrative expenses, sales and marketing expenses.
 4. **Net Income:** The company's earnings after subtracting all expenses from revenues.
- **Key Features:**

Periodicity: the income statement shows the flow of revenues and expenses over time and is updated regularly (e.g., monthly, quarterly, annually).

Operational Performance: it also provides information on the company's operational performance, including its efficiency in generating revenues and controlling expenses.

Balance Sheet =====

The Balance Sheet provides an overview of a company's financial position **at a specific point in time**. It shows what the company owns (assets), what it owes (liabilities), and the shareholders' equity (assets-liabilities).

- **Key Components:**
 1. **Assets:** Resources owned by the company, such as cash, inventory, equipment, production plants, machinery....
 2. **Liabilities:** Obligations of the company, such as debts, mortgages, accounts payable, notes payable (loans).
 3. **Equity:** The residual value of assets after subtracting liabilities; represents the "value" of the company to its shareholders.
- **Key Features:**

Specific Moment: Provides a "snapshot" of the company's financial position at a specific moment, like the end of a quarter or fiscal year.

Financial Health: Indicates the company's financial health, its liquidity, capital structure, and its ability to meet short-term and long-term obligations.

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While the Income Statement focuses on the company's ability to generate profit over a given period, the Balance Sheet shows the overall financial position of the company at a specific point in time. Both are essential tools for financial analysts, investors, and company management to make informed decisions.

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-----------|---|--------------------------------|------------|--------|---|
| 1 | <u>Building a Financial Model</u> | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | | |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | These are the assumptions. | | | Net fixed assets | | | |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | | | |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|---|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | | |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | These are the assumptions. | | | Net fixed assets | | | |
| 19 | | | | Total assets | | | |
| 20 | | | | Current liabilities | | | |
| 21 | | | | Long term debt | \$320.00 | | |
| 22 | As well as the figures in bold ... | | | Stock | \$450.00 | | |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|---------------|---|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | | |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | <div> Fill in the fields of the income statement and the balance sheet by scrolling through the list of assumptions and using the appropriate formula (which is always provided). </div> | | | Net fixed assets | | | |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | | | |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | | | |
| 19 | Sales growth tells us the estimated total sales for the next year, starting with the value provided. | | | Total assets | | | |
| 20 | | | | Current liabilities | | | |
| 21 | | | | Long term debt | \$320.00 | | |
| 22 | | | | Stock | \$450.00 | | |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | | | |
| 19 | Compute current assets as: | | | Total assets | | | |
| 20 | Current assets/Sales * Sales | | | Current liabilities | | | |
| 21 | | | | Long term debt | \$320.00 | | |
| 22 | | | | Stock | \$450.00 | | |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | | | |
| 19 | Compute current liabilities as: | | | Total assets | | | |
| 20 | Current liabilities/Sales * Sales | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 21 | | | | Long term debt | \$320.00 | | |
| 22 | | | | Stock | \$450.00 | | |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | Compute net fixed assets as: | | | Total assets | | | |
| 20 | Net fixed assets/Sales * Sales | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|---|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | | |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | | | <div> <p>The cost of goods sold (COGS) is the sum of all direct costs associated with making a product. It appears on an income statement and typically includes money mainly spent on raw materials and labor. It does not include costs associated with marketing, sales or distribution.</p> <p>COGS includes costs such as raw materials and labor that vary depending on the amount of product you produce. It doesn't include indirect costs that the business incurs regardless of how much is produced—for example, office expenses, administrative salaries or marketing costs.</p> </div> |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | | | |
| 18 | | | | Net fixed assets | | | |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | | | |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-----------|---|--------------------------------|---------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | Compute COGS as: | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | - (Costs of goods sold/Sales * Sales) | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | <div>This is the “Deprecation” for the current year (flow variable).</div> | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | <div>On the income statement it must be a negative quantity!</div> | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-----------|---|--------------------------------|------------|---|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | This is the “Depreciation” for the current year (flow variable). | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | On the income statement it must be a negative quantity! | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | <div> The “Depreciation” that appears on the Balance Sheet is always meant to be the accumulated depreciation over the years (stock variable). </div> <div> As for the income statement, it must be negative! </div> <div> At year 0, it coincides with the actual value of accumulated depreciation (typically an assumption of the model). </div> <div> At year 1,2,... it is computed as the accumulated depreciation from the previous year plus the actual depreciation that appears in the income statement. </div> | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | | | |
| 18 | | | | Net fixed assets | | | |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | | | |
| 22 | | | | Long term debt | | | |
| 23 | | | | Stock | | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|--|---|-------------------------------|------------|--|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | This is the “Depreciation” for the current year (flow variable). | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | On the income statement it must be a negative quantity! | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | The “Depreciation” on the income statement is computed as a fraction of the “Fixed assets At cost” using the | | | | | |
| 10 | Interest paid on debt | Depreciation rate. | | | | | |
| 11 | Tax rate | “Fixed assets At costs” will be computed later. Consider the following equations: | | | | | |
| 12 | Dividend payout ratio | Net fixed assets = Fixed assets at Cost-absolute value of Cumulative Depreciation. | | | | | (1) |
| 13 | Debt and Stock ratio | Fixed assets at Cost = Net fixed assets + absolute value of Cumulative Depreciation. | | | | | (2) |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---|--|---|-------------------------------|------------|--|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | This is the “Depreciation” for the current year (flow variable). | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | On the income statement it must be a negative quantity! | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | The “Depreciation” on the income statement is computed as a fraction of the “Fixed assets At cost” using the | | | | | |
| 10 | Interest paid on debt | Depreciation rate. | | | | | |
| 11 | Tax rate | “Fixed assets At costs” will be computed later. Consider the following equations: | | | | | |
| 12 | Dividend payout ratio | Net fixed assets = Fixed assets at Cost-absolute value of Cumulative Depreciation. | | | | | (1) |
| 13 | Debt and Stock | Fixed assets at Cost = Net fixed assets + absolute value of Cumulative Depreciation. | | | | | (2) |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | <ul style="list-style-type: none"> The item “Fixed assets At cost” represents the original cost of fixed assets when they were purchased or constructed. It includes the purchase price and any other costs necessary to bring the asset to a usable state (like installation costs, transportation, etc.). The item “Cumulative depreciation” is a contra-asset account that represents the total depreciation expense that has been recorded against an asset over its life. Each year, depreciation expense is added to this account, increasing its negative balance. The item “Net fixed assets” is calculated as “Fixed assets At cost” minus the absolute value of “Cumulative Depreciation”. It represents the book value of the fixed assets. | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|---|---|-------------------------------|------------|---|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | This is the “ Depreciation ” for the current year (flow variable). | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | On the income statement it must be a negative quantity! | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | The “ Depreciation ” on the income statement is computed as a fraction of the “ Fixed assets At cost ” using the Depreciation rate. “ Fixed assets At costs ” will be computed later. Consider the following equations: <div> Net fixed assets = Fixed assets at Cost-absolute value of Cumulative Depreciation. (1) </div> <div> Fixed assets at Cost = Net fixed assets + absolute value of Cumulative Depreciation. (2) </div> | | | | | |
| 10 | Interest paid on debt | | | | | | |
| 11 | Tax rate | | | | | | |
| 12 | Dividend payout ratio | | | | | | |
| 13 | Debt and Stock ratio | | | | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-----------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | Compute Depreciation as: | | | | | | |
| 20 | | | | | | | |
| 21 | - (Depreciation rate * Average fixed assets at cost over the year) | | | | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

The Average fixed assets at cost over the year is computed as:

At year 0, it coincides with the actual value of “Fixed assets At cost”.

At year 1,2,... it is computed as the average between the “Fixed assets At cost” of the actual year and the “Fixed assets At cost” of the previous year.

| | A | B | C | D | E | F | G |
|----|--|-----------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | Compute Depreciation as: | | | | | | |
| 20 | | | | | | | |
| 21 | - (Depreciation rate * Average fixed assets at cost over the year) | | | | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-----------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | Accumulated depreciation | | | |
| 17 | Compute Interest payment on debt as: | | | Depreciation on fixed assets | -\$300.00 | | |
| 18 | - (Interest rate on debt * Average debt over the year) | | | Current liabilities | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Long term debt | | | |
| 20 | | | | Stock | \$450.00 | | |
| 21 | | | | Accumulated retained earnings | \$150.00 | | |
| 22 | | | | Total liabilities and equity | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | | | |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | Compute Interest earned on C&MS as: | | | Liabilities | | | |
| 21 | Interest paid on C&MS * <i>Average C&MS over the year</i> | | | Long term debt | | | |
| 22 | | | | Stock | | | |
| 23 | | | | Accumulated retained earnings | | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-----------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | Compute Profit before tax as: | | | | | | |
| 20 | | | | | | | |
| 21 | Sales-COGS-Interest payments on debt+Interest earned on C&MS | | | | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-----------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | | | |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | Compute Profit after taxes as: | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 21 | Profit before taxes+Taxes | | | Long term debt | \$320.00 | | |
| 22 | | | | Stock | \$450.00 | | |
| 23 | WARNING: Taxes must be negative! | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---|-------------|---|--------------------------------|-------------------|---------------|--------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | The result is temporary! |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | Compute Dividends as: | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 21 | -(Dividend payout ratio * Profit after taxes) | | | Long term debt | \$320.00 | | |
| 22 | | | | Stock | \$450.00 | | |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

The result is temporary!

Compute Retained earnings as:

Profit after tax+Dividends

WARNING: Dividends must be negative!

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|------|---|--------------------------------|------------|------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | <div> <div>As anticipated compute Fixed assets at cost as:</div> <div>Net fixed asset-Depreciation</div> <div>WARNING: Depreciation must be negative!</div> <div>Equivalently:</div> <div>Net fixed asset + Abs(Depreciation)</div> </div> | | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | | | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | | | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | | | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | | | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | | | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | | | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | | | | Balance Sheet | | | |
| 13 | | | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|-------------------------------------|-------------------|---------------|-------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | \$920.00 | | =E18+E14+E13 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | <div> Compute Total assets as: C&MS + Current assets + Net fixed assets </div> | | | Term debt | \$320.00 | | <div>The result is temporary!</div> |
| 23 | | | | | \$450.00 | | |
| 24 | | | | Unplated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|-------------------------------------|-------------------|---------------|----------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | Compute Total liabilities and equity as: | | | | | | |
| 18 | | | | | | | =\$B\$6*E2 |
| 19 | | | | | | | =E18+E14+E13 |
| 20 | Current liabilities + Long term debt + Stock + Accumulated retained earnings | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | =SUM(E21:E24) |
| 26 | | | | | | | |
| 27 | | | | Verification | | | |

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|---------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$0.00 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | \$0.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$187.20 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$280.80 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$112.32 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | We are ready to close by fixing the plug! | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | Add the verification formula before closing the computation. | | | | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | \$920.00 | | =E18+E14+E13 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | =SUM(E21:E24) |
| 26 | | | | | | | |
| 27 | | | | Verification | | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | | | | E | F | G |
|----|---|--|--|--------------------------------|--------|---|
| | | | | Year 0 | Year 1 | |
| 1 | Fix the plug in such a way that | | | | | |
| 2 | Total assets = Total liabilities and equity. | | | | | |
| 3 | In order to do that we compute C&MS according to: | | | | | |
| 4 | C&MS = Total liabilities and equity-Current Assets-Net fixed assets (1) | | | | | |
| 5 | WARNING: You must activate Iterative Computation! | | | | | |
| 6 | By using equation (1) we guarantee that assets will be equal to | | | | | |
| 7 | liabilities+equity. | | | | | |
| 8 | Dividend payout ratio | | | Balance Sheet | | |
| 9 | 40% | | | | | |
| 10 | Debt and Stock | | | Cash and marketable securities | | |
| 11 | No change | | | | | |
| 12 | Cash and Marketable Securities (C&MS) | | | Plug | | |
| 13 | | | | | | |
| 14 | | | | | | |
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| | E | F | G |
|------------|------------|----------------|---|
| Year 0 | Year 1 | | |
| \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) | |
| -\$500.00 | | =-E2*\$B\$7 | |
| -\$32.00 | | =-\$B\$9*E22 | |
| \$0.00 | | =\$B\$10*E13 | |
| \$0.00 | | =-\$B\$8*E16 | |
| \$367.40 | | =SUM(E2:E6) | |
| -\$187.20 | | =-\$B\$11*E7 | |
| \$280.80 | | =SUM(E7:E8) | |
| -\$112.32 | | =-\$B\$12*E9 | |
| \$168.48 | | =SUM(E9:E10) | |
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|----|--|-----------|---|--------------------------------|------------|------------|--------------------------------------|
| 1 | <div>Financial interpretation of the Plug.</div> <div>Simon Benninga, Fiancial Modeling, 4th edition, p. 130</div> <div>By defining the plug to be cash and marketable securities we are also making a statement about how the firm finances itself.</div> <div>In our model the firm sells no additional stock, does not pay back any of its debt and does not raise any more debt.</div> <div>This definition means that all incremental financing (if needed) for the firm will come from the cash and marketable securities account; it also means that if the firm has additional cash, it will go into this account.</div> | | | | Year 0 | Year 1 | |
| 2 | | | | | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | | | | | -\$500.00 | | =-E2*\$B\$7 |
| 4 | | | | | -\$32.00 | | =-\$B\$9*E22 |
| 5 | | | | | \$0.00 | | =\$B\$10*E13 |
| 6 | | | | | \$0.00 | | =-\$B\$8*E16 |
| 7 | | | | | \$367.40 | | =SUM(E2:E6) |
| 8 | | | | | -\$187.20 | | =-\$B\$11*E7 |
| 9 | | | | | \$280.80 | | =SUM(E7:E8) |
| 10 | | | | | -\$112.32 | | =-\$B\$12*E9 |
| 11 | | | | | \$168.48 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | | | =E25-E14-E18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | \$920.00 | | =E18+E14+E13 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | =SUM(E21:E24) |
| 26 | | | | | | | |
| 27 | | | | Verification | | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|---------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | =E25-E14-E18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| | | | | Total assets | \$1,000.00 | | =E18+E14+E13 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | =SUM(E21:E24) |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

We have found an equilibrium (consistent choice of the plug) that respect the balance equation.

| | A | B | C | D | E | F | G |
|----|---|-------------|---|--------------------------------|-------------------|---------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | =-E2*\$B\$7 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | =-\$B\$9*E22 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | | =\$B\$10*E13 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | | =-\$B\$8*E16 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | =SUM(E2:E6) |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | | =-\$B\$11*E7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | =SUM(E7:E8) |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | =-\$B\$12*E9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | =SUM(E9:E10) |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | =E25-E14-E18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | =\$B\$4*E2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | =E18-E17 |
| 17 | Now we project the income statement and the balance sheet into the future ... | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | =\$B\$6*E2 |
| 19 | | | | Total assets | \$1,000.00 | | =E18+E14+E13 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | =\$B\$5*E2 |
| 22 | | | | Long term debt | \$320.00 | | |
| 23 | | | | Stock | \$450.00 | | |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | =SUM(E21:E24) |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|------------------|---|--------------------------------|-------------------|-------------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | | |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | |
| 5 | Current liabilities/Sales | Already computed | | Interest earned on C&MS | \$6.40 | | |
| 6 | Net fixed assets/Sales | | | Depreciation | -\$107.00 | | |
| 7 | Costs of goods sold/Sales | | | Profit before tax | \$367.40 | | |
| 8 | Depreciation rate | | | Taxes | -\$146.96 | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | Assumed constant | | | Current liabilities | \$80.00 | | |
| 21 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 22 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 23 | | | | Accumulated retained earnings | \$150.00 | | |
| 24 | | | | Total liabilities and equity | \$1,000.00 | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | | |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | | |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | | |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | Use the hand fill feature! | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

The **Average debt over the year** is computed as:

At year 0, it coincides with the actual value of the debt (sometimes an assumption of the model).
At year 1,2,... it is computed as the average between the debt of the actual year and the debt of the previous year.

| | | |
|----|---------------------------------------|-----------|
| 8 | Depreciation rate | 10% |
| 9 | Interest rate on debt | 10% |
| 10 | Interest paid on C&MS | 8% |
| 11 | Tax rate | 40% |
| 12 | Dividend payout ratio | 40% |
| 13 | Debt and Stock | No change |
| 14 | Cash and Marketable Securities (C&MS) | Plug |

The average between this year and the previous year.

| D | E | F | G |
|--------------------------------|------------|------------|--------------------------------------|
| Income Statement | Year 0 | Year 1 | |
| Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| Interest earned on C&MS | \$6.40 | | |
| Depreciation | -\$107.00 | | |
| Profit before tax | \$367.40 | | |
| Taxes | -\$146.96 | | |
| Profit after tax | \$220.44 | | |
| Dividends | -\$88.18 | | |
| Retained earnings | \$132.26 | | |
| Balance Sheet | | | |
| Cash and marketable securities | \$80.00 | | |
| Current assets | \$150.00 | | |
| Fixed assets | | | |
| At cost | \$1,070.00 | | |
| Depreciation | -\$300.00 | | |
| Net fixed assets | \$770.00 | | |
| Total assets | \$1,000.00 | | |
| Current liabilities | \$80.00 | | |
| Long term debt | \$320.00 | \$320.00 | =E22 |
| Stock | \$450.00 | \$450.00 | =E23 |
| Accumulated retained earnings | \$150.00 | | |
| Total liabilities and equity | \$1,000.00 | | |
| Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

The **Average C&MS over the year** is computed as:

At year 0, it coincides with the actual value of C&MS (in this model: the PLUG).

At year 1,2,... it is computed as the average between the C&MS of the actual year and the C&MS of the previous year.

| | |
|---------------------------------------|-----------|
| Interest rate on debt | 10% |
| Interest paid on C&MS | 8% |
| Tax rate | 40% |
| Dividend payout ratio | 40% |
| Debt and Stock | No change |
| Cash and Marketable Securities (C&MS) | Plug |

Income Statement

| | Year 0 | Year 1 |
|----------------------------|------------|------------|
| Sales | \$1,000.00 | \$1,100.00 |
| Costs of goods sold (COGS) | -\$500.00 | -\$550.00 |
| Interest payments on debt | -\$32.00 | -\$32.00 |
| Interest earned on C&MS | \$6.40 | \$3.20 |
| Depreciation | -\$107.00 | |
| Profit before tax | \$367.40 | |
| Taxes | -\$146.96 | |
| Profit after tax | \$220.44 | |
| Dividends | -\$88.18 | |
| Retained earnings | \$132.26 | |

=E2*(1+\$B\$3)

=-\$B\$7*F2

=-\$B\$9*(E22+F22)/2

=\$B\$10*(E13+F13)/2

Balance Sheet

| | | |
|--------------------------------|------------|----------|
| Cash and marketable securities | \$80.00 | |
| Current assets | \$150.00 | |
| Fixed assets | | |
| At cost | \$1,070.00 | |
| Depreciation | -\$300.00 | |
| Net fixed assets | \$770.00 | |
| Total assets | \$1,000.00 | |
| Current liabilities | \$80.00 | |
| Long term debt | \$320.00 | \$320.00 |
| Stock | \$450.00 | \$450.00 |
| Accumulated retained earnings | \$150.00 | |
| Total liabilities and equity | \$1,000.00 | |

=E22

=E23

Verification

OK

=IF(ABS(E25-E19)<0.01,"OK","NOT OK")

The average between this year and the previous year.

| | A | B | C | D | E | F | G |
|----|--|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | | |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | The average between this year and the previous year. | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | | |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | Use the hand fill feature! | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$187.08 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | | |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$187.08 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$280.62 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | | |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$187.08 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$280.62 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$112.25 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | | |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | Use the hand fill feature! | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$187.08 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$280.62 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$112.25 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$168.37 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | | |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$3.20 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$467.70 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$187.08 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$280.62 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$112.25 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$168.37 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | \$0.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | | |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$3.40 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$461.10 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$184.44 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$276.66 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$110.66 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$166.00 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | \$0.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | | |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$3.40 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$461.10 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$184.44 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$276.66 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$110.66 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$166.00 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | \$0.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$0.00 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$3.40 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$53.50 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$461.10 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$184.44 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$276.66 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$110.66 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$166.00 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | \$0.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$0.00 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | | |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$3.40 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$72.11 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$442.49 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$177.00 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$265.50 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$106.20 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$159.30 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$165.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$372.11 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$372.11 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | | |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | | |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

Use the hand fill feature!

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | \$0.00 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | | |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

Use the hand fill feature!

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | \$0.00 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | \$88.00 | =\$B\$5*F2 |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

Use the hand fill feature!

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-----------|---|--------------------------------|------------|-------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | \$0.00 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | \$88.00 | =\$B\$5*F2 |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | | |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | \$0.00 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | \$88.00 | =\$B\$5*F2 |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | \$281.05 | =E24+F11 |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|---------------------------------------|-------------|---|--------------------------------|-------------------|-----------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | <i>Year 0</i> | <i>Year 1</i> | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | -\$37.28 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$364.04 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$145.61 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$218.42 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$87.37 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$131.05 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | -\$1,012.00 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | Use the hand fill feature! | | | Total assets | \$1,000.00 | \$0.00 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | \$88.00 | =\$B\$5*F2 |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | \$281.05 | =E24+F11 |
| 25 | | | | Total liabilities and equity | \$1,000.00 | | |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

| | A | B | C | D | E | F | G |
|----|--|-----------|---|--------------------------------|------------|------------|--------------------------------------|
| 1 | Building a Financial Model | | | Income Statement | Year 0 | Year 1 | |
| 2 | Assumptions | | | Sales | \$1,000.00 | \$1,100.00 | =E2*(1+\$B\$3) |
| 3 | Sales growth | 10% | | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | =-\$B\$7*F2 |
| 4 | Current assets (excluding cash)/Sales | 15% | | Interest payments on debt | -\$32.00 | -\$32.00 | =-\$B\$9*(E22+F22)/2 |
| 5 | Current liabilities/Sales | 8% | | Interest earned on C&MS | \$6.40 | \$8.95 | =\$B\$10*(E13+F13)/2 |
| 6 | Net fixed assets/Sales | 77% | | Depreciation | -\$107.00 | -\$116.68 | =-\$B\$8*(E16+F16)/2 |
| 7 | Costs of goods sold/Sales | 50% | | Profit before tax | \$367.40 | \$410.26 | =F2+F3+F4+F5+F6 |
| 8 | Depreciation rate | 10% | | Taxes | -\$146.96 | -\$164.11 | =-\$B\$11*F7 |
| 9 | Interest rate on debt | 10% | | Profit after tax | \$220.44 | \$246.16 | =F7+F8 |
| 10 | Interest paid on C&MS | 8% | | Dividends | -\$88.18 | -\$98.46 | =-\$B\$12*F9 |
| 11 | Tax rate | 40% | | Retained earnings | \$132.26 | \$147.69 | =F9+F10 |
| 12 | Dividend payout ratio | 40% | | Balance Sheet | | | |
| 13 | Debt and Stock | No change | | Cash and marketable securities | \$80.00 | \$143.69 | =F25-F14-F18 |
| 14 | Cash and Marketable Securities (C&MS) | Plug | | Current assets | \$150.00 | \$165.00 | =\$B\$4*F2 |
| 15 | | | | Fixed assets | | | |
| 16 | | | | At cost | \$1,070.00 | \$1,263.68 | =F18-F17 |
| 17 | | | | Depreciation | -\$300.00 | -\$416.68 | =E17+F6 |
| 18 | Iterative computation will complete the job! | | | Net fixed assets | \$770.00 | \$847.00 | =\$B\$6*F2 |
| 19 | | | | Total assets | \$1,000.00 | \$1,155.69 | =F13+F14+F18 |
| 20 | | | | | | | |
| 21 | | | | Current liabilities | \$80.00 | \$88.00 | =\$B\$5*F2 |
| 22 | | | | Long term debt | \$320.00 | \$320.00 | =E22 |
| 23 | | | | Stock | \$450.00 | \$450.00 | =E23 |
| 24 | | | | Accumulated retained earnings | \$150.00 | \$297.69 | =E24+F11 |
| 25 | | | | Total liabilities and equity | \$1,000.00 | \$1,155.69 | =F21+F22+F23+F24 |
| 26 | | | | | | | |
| 27 | | | | Verification | OK | OK | =IF(ABS(E25-E19)<0.01,"OK","NOT OK") |

Have fun: select all the items for the Year 1 and use the hand fill feature to obtain projection up to Year 5.

| | D | E | F | G | H | I | J |
|----|--------------------------------|------------|------------|------------|------------|------------|-------------|
| | Income Statement | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| | Revenues | \$1,000.00 | \$1,100.00 | \$1,210.00 | \$1,331.00 | \$1,464.10 | \$1,610.51 |
| | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | -\$605.00 | -\$665.50 | -\$732.05 | -\$805.26 |
| | Interest payments on debt | -\$32.00 | -\$32.00 | -\$32.00 | -\$32.00 | -\$32.00 | -\$32.00 |
| 5 | Interest earned on C&MS | \$6.40 | \$8.95 | \$14.28 | \$20.08 | \$26.38 | \$33.18 |
| 6 | Depreciation | -\$107.00 | -\$116.68 | -\$137.48 | -\$161.31 | -\$188.59 | -\$219.77 |
| 7 | Profit before tax | \$367.40 | \$410.26 | \$449.80 | \$492.27 | \$537.84 | \$586.67 |
| 8 | Taxes | -\$146.96 | -\$164.11 | -\$179.92 | -\$196.91 | -\$215.14 | -\$234.67 |
| 9 | Profit after tax | \$220.44 | \$246.16 | \$269.88 | \$295.36 | \$322.70 | \$352.00 |
| 10 | Dividends | -\$88.18 | -\$98.46 | -\$107.95 | -\$118.14 | -\$129.08 | -\$140.80 |
| 11 | Retained earnings | \$132.26 | \$147.69 | \$161.93 | \$177.22 | \$193.62 | \$211.20 |
| 12 | Balance Sheet | | | | | | |
| 13 | Cash and marketable securities | \$80.00 | \$143.69 | \$213.22 | \$288.80 | \$370.62 | \$458.83 |
| 14 | Current assets | \$150.00 | \$165.00 | \$181.50 | \$199.65 | \$219.62 | \$241.58 |
| 15 | Fixed assets | | | | | | |
| 16 | At cost | \$1,070.00 | \$1,263.68 | \$1,485.86 | \$1,740.34 | \$2,031.42 | \$2,363.92 |
| 17 | Depreciation | -\$300.00 | -\$416.68 | -\$554.16 | -\$715.47 | -\$904.06 | -\$1,123.83 |
| 18 | Net fixed assets | \$770.00 | \$847.00 | \$931.70 | \$1,024.87 | \$1,127.36 | \$1,240.09 |
| 19 | Total assets | \$1,000.00 | \$1,155.69 | \$1,326.42 | \$1,513.32 | \$1,717.59 | \$1,940.50 |
| 20 | | | | | | | |
| 21 | Current liabilities | \$80.00 | \$88.00 | \$96.80 | \$106.48 | \$117.13 | \$128.84 |
| 22 | Long term debt | \$320.00 | \$320.00 | \$320.00 | \$320.00 | \$320.00 | \$320.00 |
| 23 | Stock | \$450.00 | \$450.00 | \$450.00 | \$450.00 | \$450.00 | \$450.00 |
| 24 | Accumulated retained earnings | \$150.00 | \$297.69 | \$459.62 | \$636.84 | \$830.46 | \$1,041.66 |
| 25 | Total liabilities and equity | \$1,000.00 | \$1,155.69 | \$1,326.42 | \$1,513.32 | \$1,717.59 | \$1,940.50 |
| 26 | | | | | | | |
| 27 | Verification | OK | OK | OK | OK | OK | OK |

| | D | E | F | G | H | I | J |
|---|----------------------------|-------------------|------------|------------|------------|------------|------------|
| 1 | Income Statement | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| 2 | Sales | \$1,000.00 | \$1,100.00 | \$1,210.00 | \$1,331.00 | \$1,464.10 | \$1,610.51 |
| 3 | Costs of goods sold (COGS) | -\$500.00 | -\$550.00 | -\$605.00 | -\$665.50 | -\$732.05 | -\$805.26 |
| 4 | | | | | | | |

This model features:

- 1) growing sales;
- 2) net fixed assets as a fixed fraction of sales.

This modeling choice immediately implies that net fixed assets are growing. As a consequence, fixed assets at costs must grow:

Net fixed assets = Fixed assets at cost-abs(Cumulative Depreciation)

Fixed assets at cost = Net fixed assets + abs(Cumulative Depreciation)

The company is making capital investments at a rate that exceeds the depreciation of its existing assets. In other words, the company is not just maintaining its asset base; it's expanding it.

| 15 | Fixed assets | | | | | | |
|----|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 16 | At cost | \$1,070.00 | \$1,263.68 | \$1,485.86 | \$1,740.34 | \$2,031.42 | \$2,363.92 |
| 17 | Depreciation | -\$300.00 | -\$416.68 | -\$554.16 | -\$715.47 | -\$904.06 | -\$1,123.83 |
| 18 | Net fixed assets | \$770.00 | \$847.00 | \$931.70 | \$1,024.87 | \$1,127.36 | \$1,240.09 |
| 19 | Total assets | \$1,000.00 | \$1,155.69 | \$1,326.42 | \$1,513.32 | \$1,717.59 | \$1,940.50 |
| 20 | | | | | | | |
| 21 | Current liabilities | \$80.00 | \$88.00 | \$96.80 | \$106.48 | \$117.13 | \$128.84 |
| 22 | Long term debt | \$320.00 | \$320.00 | \$320.00 | \$320.00 | \$320.00 | \$320.00 |
| 23 | Stock | \$450.00 | \$450.00 | \$450.00 | \$450.00 | \$450.00 | \$450.00 |
| 24 | Accumulated retained earnings | \$150.00 | \$297.69 | \$459.62 | \$636.84 | \$830.46 | \$1,041.66 |
| 25 | Total liabilities and equity | \$1,000.00 | \$1,155.69 | \$1,326.42 | \$1,513.32 | \$1,717.59 | \$1,940.50 |
| 26 | | | | | | | |
| 27 | Verification | OK | OK | OK | OK | OK | OK |

EXERCISE 3: SHORT TERM DEBT PLUG

 Pro Forma Statements/Short Term Debt Plug