Monitoring the Financial Health of the Business

A CorNu Enterprise Educational Product
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Credit Page

The founders of BizBite Consulting Group and developers of CorNu Enterprises dynamic approach to education are

Graeme Robertson and Dr. Shirley Chapman

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How is this module organized?

We divided the Monitoring the Financial Health of the Business into four major headings:

1. Monthly financial performance review & analysis
2. Income statement analysis
3. Balance sheet analysis
4. Testing the financial strength of your business

Within the module, the material is divided into these headings:

Introduction
How to use this section
(Module content)

Uses
Summary
Celebrate

Celebrate!

It is important that you recognize your achievements and celebrate each small step. Phone some friends and celebrate it. We will offer you opportunities to celebrate at the end of each part of the module. Have fun with them. We had fun creating them for you.
Suggestions on how to use this module

This module is organized so that you decide:

- In what order you want to access the various titles
- What you want to ignore
- How many times you want to revisit the material

Just return to the Table of Contents and click on what you want to read or review again.

The six-pointed star

We have depicted business and a business plan as a six-pointed star. Each part of the star represents a major aspect of your business and an important element of a business plan. Together, they form a complete view of your business and your business plan.

We have carried this star throughout all the BizBite Consulting Group products and all the modules.

As each new section is begun or completed, the appropriate part of the star is colored and the rest of the star is colorless. This may help you to see how a specific topic relates to the whole business and to remind you that it is part of the whole.

Acknowledgement

All of the Universal Laws quoted at the end of each module come from


They are from the supplement to the eight-audiocassette program
Monitoring the Financial Health of the Business

Introduction

In Monitoring the Financial Health of the Business, we will discuss what a business manager needs to do on a monthly basis to monitor the financial health of the business. You will learn about interpreting financial statements and using financial ratios to monitor your business performance.

The four segments are:

1. Monthly financial performance review and analysis
2. Income statement analysis
3. Balance sheet analysis
4. Testing the financial strength of your business
It is very important for the business manager to learn how to work with and interpret financial information and reporting. Developing these skills enables the manager to:

- Interact more effectively with accountants
- Interact more effectively with lenders
- Identify problem areas early and take remedial action
- Maximize the ROI to investors
- Make better business decisions

**a. Monthly financial performance review and analysis**

Month I Financial Performance Review and Analysis emphasizes the need to do a monthly review of the financial performance of your business.

**It covers:**

- The preparation necessary before doing the financial review
- How to use the information resulting from the financial review
- Covering how to organize the information in the financial review
- In addition, it includes examples and tips on relating the information to your business.

**b. Income statement analysis**

**In Income Statement Analysis, you will learn:**

- What information the income statement presents
- How the parts of the income statement are related
- Ways in which the income statement information may be presented to best serve the needs of your business
- What sort of information will you be looking for on the income statement?
- How to interpret the importance of the information
- How the information on the income statement is used
We will use an example of a typical income statement. Throughout this section, we have based the examples on the figures of Well Known Merchandise Inc. so there is some continuity and relationship to the various reports we will discuss.

The **Balance Sheet Analysis** segment discusses the components of a balance sheet, where the information comes from, and how the information is related.

**In this material, you will learn:**

- What the figures on a balance sheet tell you
- An introduction to simple tests of the balance sheet information to determine the strength or weakness of the business
- How to interpret the results of the tests
- How to use the results of your balance sheet analysis

In addition, examples of conclusions are drawn from the balance sheet analysis.

As with the segment on Income Statement Analysis, we will use the figures of Well Known Merchandise Inc. and the figures are also in a following section, Testing the Financial Strength of Your Business.

We will discuss the use of ratio analysis in this segment as an introduction to this subject before covering the subject in more detail in the following section, Testing the Financial Strength of Your Business.
d. Testing the financial strength of your business

In *Testing the Financial Strength of Your Business*, you will learn many financial ratios to use in monitoring your business performance. The four ratios are:

1. Operational ratios
2. Liquidity ratios
3. Leverage ratios
4. Profitability ratios

We will discuss various ratios that fall into these categories, where they are used, and why they are used. In some cases, we will give examples of:

- How these ratios are used in a business situation
- The conclusions that might be drawn
- The action that might be indicated

We will continue to use the figures of Well Known Merchandise Inc. as we did in *Income Statement Analysis and Balance Sheet Analysis*.

---

*The Laws of Business—of quality*

Customers demand the very highest quality for the very lowest price.

Quality is whatever the customer thinks it is.

And the customer decides how much it's worth.
Monthly Financial Performance Review and Analysis

Introduction

A monthly performance review and analysis is an essential part of good business management. It is very important to get in the habit of doing a detailed review and analysis of your business each month.

You should set aside the same time each month and don't let anything interfere with the process!

The purpose of the review and analysis is to compare the results to your expectations written in your business plan.

Examine any deviations or exceptions to your plan closely to determine the reasons for any exceptions so you can take any remedial action if it is necessary.

For illustration purposes, we will use a professional services company—an architectural services company that has several different segments to the business. Each business segment involves different resources of the company, therefore, yields different gross profit margins, and thus has a different break-even point (BEP).

How to use this information

As you go through this section, think about your own business. Compare what you do now to assess the performance of your business to the ideas and methods presented in this section.
Prior preparation for a monthly performance review and analysis

Before the financial review and analysis can begin, you will have:

- Reviewed past years operating statements
- Reviewed the business plan projections
- Prepared pro-forma operating statements and cash flow projections
- You will have analyzed your fixed costs and calculated the historical percentage of gross revenue that they represent
- You will have reviewed past projects to arrive at an estimate of typical variable costs for different types of work
- Prepared a job cost summary sheet that will take all of these factors into account including the varying contribution of people and resources within the company
- You will know any generated net profit on each project and each business segment.

Now, you have the basic information necessary to do a monthly financial performance review.

Using a monthly financial performance review and analysis

Armed with these new systems in place and the new insights they provide, you will factor a portion of estimated fixed and variable costs into all of your pricing. You will price for profit and use pricing as part of your marketing strategy.

You will create more financial strength in the business by developing contingency funds for the replacement of capital assets or funding future growth.

Record and manage all capital assets managed by use of a capital asset register and any planned new acquisitions are justified by use of a capital expenditure justification form.

You could have a capital asset summary report each month but a quarterly review is probably sufficient in most cases.
Financial Analysis

For quick review you can prepare a one- or two-page spreadsheet form that will record and present comparative analysis summaries in a historical context. Your secretary or office manager may prepare this. Deviation analysis of cash flow and income statements vs. forecasts can also be prepared in advance for your review.

Here is how your financial review spreadsheet might look. The following chart is an example of only a partial year.

The two abbreviated headings on the chart are:
- YTD - Year-to-date
- PY - Prior year

Financial Review Spreadsheet

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>April</th>
<th>YTD</th>
<th>PY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acid test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Break-even analysis ratios for:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business segment A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business segment B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business segment C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business segment D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Complete each month the calculations for the headings in the left column of each row of the spreadsheet and result recorded under the appropriate month. This allows you to see the changes that may be occurring in each business segment, each service the business provides, and the business as a whole.

We will discuss the current ratio, acid test, and other useful financial ratios in the next section.

In addition to calculating these business ratios each month and recording them on the spreadsheet, you should review and analyze your monthly cash flow statement and income statement to identify:

- Cash flow deviations
- Income statement deviations

When you analyze both of these reports, you are looking for deviations from your forecasted results. When you discover a deviation, always try to determine its reason.

Whatever the reason for the deviation, once it is identified you are better able to look for ways and means of changing the results.

For example:
If the profit result for a service, a business segment, or the business as a whole, is higher or lower than forecasted for the month, the reasons might be:
- Product was purchased from a supplier at a lower or higher cost
- Different office or plant procedures resulted in an improvement or decline in production efficiency
- Rent, taxes, utilities, insurance fees or other fixed costs suddenly increase or decrease
**Significant historical variances**

When you go through this exercise each month it is a good idea to also assess the potential financial or liability exposure of the business and take appropriate action.

You should keep in mind (as a very general rule of thumb) that most businesses, including professional services businesses, should generate gross revenues equal to 2–3 times their net expenses.

If they are consistently below this rate, it is not a healthy situation and that indicates remedial action is required. Of course, this is a very broad statement and some industry and seasonal variances will apply.

However, to bring it close to home, if your gross annual revenue is $400,000, then your net annual expenses should not be more than approximately $200,000.

If they are, you have only three alternatives and they are:

- Cut expenses
- Increase the volume of business without raising costs significantly
- Increase the margin of profit on existing sales volumes

A combination of all of these approaches is probably the best solution.

In your break-even analysis for each month, if the ratio entered each month for the relationship between revenue and \( fixed \text{ costs} + variable \text{ costs} \) is consistently slipping below a ratio of 2:1, and then a more detailed analysis is in order.

**For example:**

If you have been replacing or acquiring assets recently, make sure that, you are adequately covered by insurance.

Or, if you just took on an unusually large contract perhaps you should check with your insurance agent that you would be adequately covered.
Summary

*Monthly Financial Performance Review and Analysis* explained how you would monitor the performance of the business on a monthly basis. It briefly discussed the assembled data to complete correctly a performance analysis and apply the common tests to the data. Every business will be different but the approach outlined here is common to most businesses.

*Laws of Money—of three*

Financial security is like a three-legged stool:

it rests on savings, insurance, and investment.

You must tend to all three to become financially independent and secure.
Celebrate!

Take your family fishing for the day
Income Statement Analysis

Introduction

The income statement of a business is another key tool that managers use to measure and analyze the health of their businesses. The income statement is commonly known as the operating statement or the profit and loss statement. In this discussion, we will use the term, income statement.

The income statement is a statement of the changes that have occurred from one period to another.

*It shows, in financial terms, a summary of:*

- The transactions that have occurred in the business during that period
- The income generated by those transactions
- The changes in valuation of the inventory carried by the business
- The expenditures made by the business
- The profit or loss to the business at the end of the period

There will be no discussion of any complex statistical analysis here or forecasting methods in relation to the income statement. Consult your certified accountant on those matters.

Rather, we will discuss some of the things that you, as a manager, should be looking for when your accountant presents you with your monthly statements.
How to use this section

As you study the income statement analysis, consider how the ideas presented compare to how you now view the monthly statements your accountant gives you.

Ask yourself these six questions:

1. How are my statements prepared? How are they presented?
2. What items on the income statement do you currently look at, and what do they mean to you?
3. What kinds of information do you usually get from your Income Statement?
4. What conclusions do you draw from the information on the income statement?
5. How do you use the information and conclusions to improve your business or what sorts of decisions do you make based on your conclusions?
6. How can the ideas presented in this section help you to do a better job of analyzing your Income Statement and making good business decisions?
Income statement presentation

An income statement may be prepared for any period in the fiscal year. A fiscal year is an accounting period of 12 months.

The income statement is commonly prepared:

- Monthly
- Quarterly (3-month period)
- Annually

However, it really could be prepared for any period of the year. It is important that you ask your accountant to prepare statements for your business in a form and with the level of detail that will be most useful to you in your business.

Accounting software programs used in computerized accounting systems today will easily generate accounting reports in almost any form and level of detail that you wish.

A report covering the specific period is useful, but comparing the reports to previous reports or previous periods is much more useful. Accountants will often show comparisons to figures for the same period of the previous fiscal year. This is useful. However, it is much more useful if a manager can see on one page:

- The figures for each of the previous months of the fiscal year
- The total of the figures for the year-to-date (YTD)
- A total for the prior-year-to-date (PYTD)

We call this type of presentation a spreadsheet.

A spreadsheet will have a column for each month of the fiscal year. If you wish, you can also have an additional column for each month for comparison to the forecasted (pro-forma) figures for the fiscal year. A direct comparison like this is useful when preparing monthly forecasts for the next fiscal year.

At the far right of the spreadsheet are the columns for the totals for the YTD and the PYTD.
## Income Statement

**Well Known Merchandising Inc.**

Comparison of Dec. 31/99 to Dec. 31/98

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% /Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Sales</strong></td>
<td>700,000</td>
<td>100.00%</td>
<td>800,000</td>
<td>100.00%</td>
</tr>
<tr>
<td><strong>Less: Discounts</strong></td>
<td>30,000</td>
<td>4.29%</td>
<td>40,000</td>
<td>5.00%</td>
</tr>
<tr>
<td><strong>Allowances</strong></td>
<td>9,000</td>
<td>1.29%</td>
<td>10,000</td>
<td>1.25%</td>
</tr>
<tr>
<td><strong>Net Sales</strong></td>
<td>661,000</td>
<td>94.43%</td>
<td>750,000</td>
<td>93.75%</td>
</tr>
</tbody>
</table>

**Cost of Goods Sold**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% /Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning Inventory</strong></td>
<td>160,000</td>
<td>22.86%</td>
<td>170,000</td>
<td>21.25%</td>
</tr>
<tr>
<td><strong>Purchases</strong></td>
<td>450,000</td>
<td>64.29%</td>
<td>500,000</td>
<td>62.50%</td>
</tr>
<tr>
<td><strong>Less: Discounts</strong></td>
<td>13,500</td>
<td>1.93%</td>
<td>15,000</td>
<td>1.88%</td>
</tr>
<tr>
<td><strong>Allowances</strong></td>
<td>4,500</td>
<td>0.64%</td>
<td>5,000</td>
<td>0.63%</td>
</tr>
<tr>
<td><strong>Net Purchases</strong></td>
<td>432,000</td>
<td>61.71%</td>
<td>480,000</td>
<td>60.00%</td>
</tr>
<tr>
<td><strong>Less: Ending Inventory</strong></td>
<td>170,000</td>
<td>24.29%</td>
<td>150,000</td>
<td>18.75%</td>
</tr>
<tr>
<td><strong>Cost of Goods Sold</strong></td>
<td>422,000</td>
<td>60.29%</td>
<td>500,000</td>
<td>62.50%</td>
</tr>
</tbody>
</table>

**Gross Profit** | 239,000 | 34.14% | 250,000 | 31.25%

**Operating Expenses**

**Selling:**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% /Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales staff salaries</strong></td>
<td>23,750</td>
<td>3.39%</td>
<td>25,000</td>
<td>3.13%</td>
</tr>
<tr>
<td><strong>Sales staff benefits</strong></td>
<td>4,750</td>
<td>0.68%</td>
<td>5,000</td>
<td>0.63%</td>
</tr>
<tr>
<td><strong>Travel and entertainment</strong></td>
<td>1,500</td>
<td>0.21%</td>
<td>1,500</td>
<td>0.19%</td>
</tr>
<tr>
<td><strong>Advertising and promotion</strong></td>
<td>8,000</td>
<td>1.14%</td>
<td>9,500</td>
<td>1.19%</td>
</tr>
<tr>
<td><strong>Vehicle expense</strong></td>
<td>2,300</td>
<td>0.33%</td>
<td>2,500</td>
<td>0.31%</td>
</tr>
</tbody>
</table>

**Administration:**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% /Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff salaries</strong></td>
<td>38,000</td>
<td>5.43%</td>
<td>40,000</td>
<td>5.00%</td>
</tr>
<tr>
<td><strong>Staff benefits</strong></td>
<td>7,600</td>
<td>1.09%</td>
<td>8,000</td>
<td>1.00%</td>
</tr>
<tr>
<td><strong>Rent</strong></td>
<td>20,000</td>
<td>2.86%</td>
<td>20,000</td>
<td>2.50%</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>2,300</td>
<td>0.33%</td>
<td>2,500</td>
<td>0.31%</td>
</tr>
<tr>
<td><strong>Janitor</strong></td>
<td>1,500</td>
<td>0.21%</td>
<td>1,500</td>
<td>0.19%</td>
</tr>
<tr>
<td><strong>Building maintenance</strong></td>
<td>2,500</td>
<td>0.36%</td>
<td>3,000</td>
<td>0.38%</td>
</tr>
<tr>
<td><strong>Office equipment</strong></td>
<td>2,000</td>
<td>0.29%</td>
<td>1,500</td>
<td>0.19%</td>
</tr>
<tr>
<td><strong>Office supplies</strong></td>
<td>1,600</td>
<td>0.23%</td>
<td>1,500</td>
<td>0.19%</td>
</tr>
</tbody>
</table>

**General Mfg. Plant:**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% /Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant staff salaries</strong></td>
<td>42,750</td>
<td>6.11%</td>
<td>45,000</td>
<td>5.63%</td>
</tr>
<tr>
<td><strong>Plant staff benefits</strong></td>
<td>8,850</td>
<td>1.22%</td>
<td>10,000</td>
<td>1.25%</td>
</tr>
<tr>
<td><strong>Plant fuel oil</strong></td>
<td>9,700</td>
<td>1.39%</td>
<td>10,500</td>
<td>1.31%</td>
</tr>
<tr>
<td><strong>Machinery maintenance</strong></td>
<td>4,000</td>
<td>0.57%</td>
<td>3,000</td>
<td>0.38%</td>
</tr>
<tr>
<td><strong>Total Operating Expense</strong></td>
<td>180,800</td>
<td>25.83%</td>
<td>190,000</td>
<td>23.75%</td>
</tr>
</tbody>
</table>

**Operating Profit** | 58,200 | 8.31% | 60,000 | 7.50%

**Non-Operating Expenses** | 2,500 | 0.36% | 3,000 | 0.38% |

**Profit before tax** | 55,700 | 7.96% | 57,000 | 7.13%

**Corporation tax** | 13,925 | 1.99% | 14,250 | 1.78%

**Net Profit** | 41,775 | 5.97% | 42,750 | 5.34%
### Income Statement

**Well Known Merchandising Inc.**

**Comparison of Dec.31/99 to Dec.31/98**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% / Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Net Sales</td>
<td>661,000</td>
<td>100.00%</td>
<td>750,000</td>
</tr>
<tr>
<td>7</td>
<td>Cost of Goods</td>
<td>422,000</td>
<td>63.84%</td>
<td>500,000</td>
</tr>
<tr>
<td>8</td>
<td>Gross Profit</td>
<td>239,000</td>
<td>36.16%</td>
<td>250,000</td>
</tr>
</tbody>
</table>

#### Operating Expenses

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% / Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Selling</td>
<td>40,300</td>
<td>6.10%</td>
<td>43,500</td>
</tr>
<tr>
<td>13</td>
<td>Administration</td>
<td>75,500</td>
<td>11.42%</td>
<td>78,000</td>
</tr>
<tr>
<td>14</td>
<td>General</td>
<td>65,000</td>
<td>9.83%</td>
<td>68,500</td>
</tr>
<tr>
<td>15</td>
<td>Total</td>
<td>180,800</td>
<td>27.35%</td>
<td>190,000</td>
</tr>
</tbody>
</table>

#### Operating Profit

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>1999</th>
<th>8.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td></td>
<td>58,200</td>
<td></td>
<td>60,000</td>
</tr>
</tbody>
</table>

#### Non-Operating Expenses

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>% / Sales</th>
<th>1999</th>
<th>% / Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Non-Operating</td>
<td>2,500</td>
<td>0.38%</td>
<td>3,000</td>
</tr>
</tbody>
</table>

#### Profit before tax

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>8.43%</th>
<th>1999</th>
<th>7.60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Profit before</td>
<td>55,700</td>
<td></td>
<td>57,000</td>
</tr>
</tbody>
</table>

#### Corporation tax

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>2.11%</th>
<th>1999</th>
<th>1.90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Corporation</td>
<td>13,925</td>
<td></td>
<td>14,250</td>
</tr>
</tbody>
</table>

#### Net Profit

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>6.32%</th>
<th>1999</th>
<th>5.70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Net Profit</td>
<td>41,775</td>
<td></td>
<td>42,750</td>
</tr>
</tbody>
</table>

### Statement of Earned Surplus

**Well Known Merchandise Inc.**

**Comparison of Dec. 31/99 to Dec. 31/98**

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>15000</td>
<td>31,775</td>
</tr>
<tr>
<td>35</td>
<td>41775</td>
<td>42,750</td>
</tr>
<tr>
<td>36</td>
<td>56775</td>
<td>74,525</td>
</tr>
<tr>
<td>38</td>
<td>25000</td>
<td>20,000</td>
</tr>
<tr>
<td>39</td>
<td>31775</td>
<td>54,525</td>
</tr>
</tbody>
</table>

**Monitoring the financial health of the business © 16**
The above Income Statement example is a summary form of the previous example, and in addition, it has a *statement of earned surplus*, attached to it.

This simple example indicates how earned surplus is calculated. Refer to *Balance Sheet Analysis* to see earned surplus on the balance sheet.

As well, in the section *Testing the Financial Strength of Your Business* you should refer to this example when you review the sub section *Profitability Ratios*.

**Useful tip:**

Have your accountant prepare income statement spreadsheets with all items expressed as a % of gross income (sales).

This allows the manager to quickly compare figures from one period to another as well as compare those figures to norms for the industry.

The % is usually listed beside each figure in a column.

**For example:**

The first item in a column on the income statement, in the part recording income, might be:

- **Gross income (sales) $800,000 100%**
  - It is 100% of itself.

Lower down the column in the above income statement, in the part recording expense items for the period, might be a listing for travel and entertainment expense as follows:

- **Travel and entertainment expense $1,500 0.188%**

The 0.188% beside the $1,500 indicates that the amount of the travel and entertainment expense spent in the period was 0.188% of the gross income (sales) of $800,000.
A manager, looking at a spreadsheet with several past months and the current month presented, can easily spot if the % to sales is in line with:

- Forecasted amounts for the month
- Forecasted amounts for the year
- Comparison to rates of expenditure in the PYTD
- Industry norms

The dollar value can be much higher or lower than any of these comparisons, but if the % to sales ratio is similar, it indicates the business is spending a normal amount in relation to the gross income (sales) of the business.

Consider asking your accountant for spreadsheet presentations such as we have described here. You will find it much easier to identify quickly anomalies on your Income Statement that need investigation.

**What are you looking for on the income statement?**

We said, at the beginning, that the income statement presented changes that have occurred from one period to another.

However, when you analyze your income statement:

- What kinds of changes are you looking for on your income statement?
- What items are more likely to change?
- Where should you start in your analysis of the income statement?

First, you will be looking for changes in significant income or expense items. A 'significant' item is one where the total value of the item is significant as a % to sales. Sometimes even a small change in that item as a % to sales can have an effect on the profit of the company.
For example

| A small company has gross income (sales) of | $200,000/Year | 100% |
| The GM on sales is 30% so gross profit (GP)= | $60,000/Year | 30% |
| Total expenses are | $50,000/Year | 25% |

**Therefore, net profit is**

| $10,000/Year | 5% |

Assume that included in the total expenses is an item, which is normally $200/month

The total expense most years would then usually be 12 x $200 = $2,400/year

The manager compares total expenses YTD to the PYTD on the spreadsheet and finds there is little variation in % to sales ratio.

The manager then examines each item in the income statement YTD and PYTD columns and spots a variance in the % to sales ratio for the item that is normally 1.2% to sales.

The PYTD is 1.2% but YTD is 2.6%. A close look at the figures for each previous month reveals that this item was within a historically normal % to sales ratio for the first three months of the year and then suddenly doubled in cost.

In a small company, such an increase can have a big impact on the profit of the company. An increase of 1.4% (from 1.2% to 2.6%) to sales in this expense item represents an additional $2,800 of expense or 28% of the NP of the company.

In this example, the small company has a NP of $10,000/year. As a result, an increase of 1.4% (from 1.2% to 2.6%) to sales in this expense item represents an additional $2,800 of expense or 28% of the NP of the company.

The analysis indicates taking action immediately to:

- Investigate the reason for the increase

If the expense item is a key product or service needed by the company to function, then alternative sources for the product or service need to be found or a better price negotiated on the item.
Consider for a moment, what the effect would be if the expense item increases by the same dollar amount, but the sales of the company were now $400,000 rather than $200,000. Is it considered a significant increase in expense?

The answer is yes!

In this event, the % to sales increase is from .6% to 1.3%. While the dollars represented by the increase won't have the same impact on the NP of the company, enough items like this on an income statement will add up to a significant variance overall. Therefore, this variance should still be investigated and action taken.

This example illustrates how to analyze every item on the income statement, particularly variable cost items.

Expense items that are monthly expressions of fixed costs are not as likely to change.

However, you should always look at these items briefly just in case something extraordinary has happened.

However, arrange items like rent, utilities, and insurance for long periods and the monthly charges associated with these charges rarely change much from one period to another.

The items that are most subject to change are sales and the variable expense items. Scrutinize these items very carefully each month. Check even small variances and a satisfactory explanation for the variance determined.

In particular, pay attention to significant changes in:

- Revenue items—sales, other income from items, for example, securities, sale of assets, or interest income. It is important to be aware of how much income has come from operations and how much from non-operating events.

In a certain period, you could have a situation where total revenue seemed to be in line with forecasts, but income from operations was actually down and the total revenue was inflated because of the inclusion of non-operating revenue.

- Purchases
- Discounts and allowances on sales or purchases
- Gross profit (GP)
- Gross margin (GM)
- Variable expense items
- Net profit (NP)
Analyze your income statement spreadsheet in the order listed above. Acquire the habit of doing it the same way all the time and you will not only become very familiar with the procedure, but you will tend to be more thorough in your analysis.

What's more, it is a good idea to compare your company performance with industry standards for your area.

While the % to sales ratios will vary between companies, it does give you a perspective on how your company compares to others in your industry and perhaps the competition in your area.

Most libraries have small business profile information that is a good source for this information. (See The Business Plan for a list in the Appendix.)

The two items analyzed were because we will now discuss them in:

1. Inventory
2. Cost of goods sold (CGS)

**Inventory and the cost of goods sold (CGS)**

Inventory is a significant investment for most companies and it must be managed carefully to optimize the return on investment (ROI) to the company.

Selling and replacing the inventory is a must to ensure the business makes a profit.

Every time the total average inventory value is replaced, the inventory is said to have turned over. This is what is meant by the common business term—**inventory turnover**.

Maintaining and improving the inventory turnover rate is a focus of any business that handles inventory because even small changes in inventory turnover can have a significant effect on profits.

If your business handles inventory, you should be aware each month of the turnover rate for the month, the quarter and year-to-date (YTD), and how those ratios compare to the same periods in the prior year.
The formula for calculating this ratio is:

**Cost of goods sold (CGS)**
for the period/average inventory

This formula says to divide the CGS for a measured period by the average inventory.

The average inventory may be close to the same value for each period measured, but the CGS for the period would be quite different.

For instance, in this example, the CGS for a month might be $50,000 and the Average Inventory, $200,000.

Therefore, the inventory turnover rate for the month would be $50,000/$200,000 = .25 turnovers.

As we said, even fractional improvements can have a dramatic impact on profit. Consider in this example,

If inventory turnover was improved by .05 turnovers, that would mean that .05 x $600,000 = $30,000 more inventory, at cost value, was sold.

If the selling price of that inventory were $45,000 (a 33⅓% GM), the improvement in the company profit would be $15,000.

For more information on calculating Inventory Turnover and other financial management ratios, see Testing the Financial Strength of Your Business.
Calculate the cost of goods sold (CGS) as follows:

- Beginning inventory for the period
- Plus Purchases for the period
- Less discounts and allowances on the purchases
- Minus Ending inventory for the period
- Equals Cost of goods (CGS) sold (CGS)

Discounts are supplier incentives—a % off the purchase price.

Allowances are the value of the inventory returns to suppliers or perhaps a discount taken off the purchase price for reasons such as the inventory being obsolete, inferior, or damaged.

There may be an allowance for inventory shrinkage.

*Inventory shrinkage* is a term for shortages or losses of inventory due to spoilage of perishable goods, but it can be an allowance made for losses due to stealing by customers—an allowance for shoplifting.

**For example:**

Acme Mercantile inventory records show the following information:

- Inventory value January 1, 2000 is $600,000
- Total purchases from Jan. 1/00 to Dec. 31/00 is $1,080,000
- Less discounts and allowances $25,000
- Net purchases $1,055,000
- Total $1,655,000
- Less ending inventory Dec. 31/00 $750,000
- Cost of goods sold (CGS) $905,000

On your income statement, the CGS is subtracted from net sales. The result is your gross profit (GP).

Therefore, if we assume that Acme Mercantile net sales (NS) are $1,300,000

Then gross profit (GP) is $1,300,000 - $905,000 = $395,000

Therefore, gross margin (GM) is $395,000/$1,300,000 = .3038 or 30.38%

Monitoring the financial health of the business © 23
From this example, you have seen:

How CGS is calculated

How NS, CGS, GP, and GM are related.

When you are analyzing your income statement, you should note the changes in inventory valuation.

Some factors to watch for are:

If purchases are much larger than usual because the company has taken advantage of a volume discount opportunity, the result could be inflated Ending Inventory values in ensuing months.

If the excess inventory isn't sold as quickly as expected, it will have the effect of decreasing the company's profitability until inventory levels are brought into line as a % to sales.

Stated another way, excess inventory levels lower inventory turnover rates and result in lower profits.

Another important factor to consider is the quality of the inventory and the value assigned to it.

**For example:**

A company may have a significant quantity of poor quality inventory. If this remains recorded at the same value, as it would be in good condition, the income statement will not give a true picture of the profitability of the company.

In this event, the inventory is said to be overvalued. An overvalued inventory will result in the ending inventory value being higher than it should be.

The cost of goods sold (CGS) will be lower

The net profit will be higher

In other words, the result will be that overvalued inventory will result in an overstated net profit. Conversely, if inventory is undervalued, CGS will be higher in value and the result is that net profit is understated.
A key point to be made here is that if you have inventory that is of poor quality or not as saleable for other reasons, it should be evaluated and written down to its correct value.

You should consult your certified accountant for direction in this matter because rules governing evaluation of inventory may vary in different jurisdictions.

Another way of monitoring inventory is by use of the days of sales in inventory ratio.

For more information on applying this method, see Testing the Financial Strength of Your Business.

**Summary**

In *Income Statement Analysis*, we have discussed the income statement and the information that it provides.

As well, we have discussed:

- Ways the income statement may be organized
- What kinds of information you are looking for on the income statement
- How some of the information on the income statement may be interpreted and used

You should compare the ideas presented here to the way you presently view your income statement and interpret the information on it.

*Testing the Financial Strength of Your Business* will provide more information business reports and measuring the performance of your business.

**Laws of Money—of compound interest**

Allowing money to grow at compound interest will make you rich.

The key to making this work is to put it away and never touch it.
Celebrate!!

Rent a sailing boat for the day
Balance Sheet Analysis

Introduction

The purpose here is not to provide a detailed analysis of the balance sheet as it is beyond the scope of this material; however, discuss it in depth with your accountant.

However, it is important for small business owners to have a basic understanding of financial statements and be able to apply some simple tests to determine the strengths and weaknesses of the business.

Here are a few simple measuring tools:

1. Working capital
2. Historical comparisons
3. Ratio analysis
   3.1. Current ratio
   3.2. Acid test or quick ratio

We will discuss these tools briefly. However, we discuss these and other financial measurement tools in more detail in Testing the Financial Strength of Your Business.
How to use this information

As you move through this material, think of your own business. Think of the financial statements that you receive from your accountant each month and how you review the material in those reports.

This material will introduce you to some basic measurement ideas and tools

Balance Sheet example

For the purpose of discussion, here is an example of a balance sheet.

The figures used are those presented for Well Known Merchandise Inc. in the following section, Testing the Financial Strength of Your Business.

The balance sheet below is not interactive.
# Balance Sheet - Well Known Merchandise Inc.

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Dec. 31/98</th>
<th>Dec. 31/99</th>
<th>LIABILITIES</th>
<th>Dec. 31/98</th>
<th>Dec. 31/99</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash In Bank</td>
<td>11,000</td>
<td>14,000</td>
<td>Bank Overdraft</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cash On Hand</td>
<td>2,000</td>
<td>3,500</td>
<td>Trade Accounts Payable</td>
<td>15,000</td>
<td>10,050</td>
</tr>
<tr>
<td>Marketable Securities</td>
<td>15,000</td>
<td>15,000</td>
<td>Other Accounts Payable</td>
<td>2,000</td>
<td>3,000</td>
</tr>
<tr>
<td>Customer Accounts</td>
<td>18,275</td>
<td>17,600</td>
<td>Provision For Taxation</td>
<td>13,925</td>
<td>14,250</td>
</tr>
<tr>
<td>Deposits</td>
<td>600</td>
<td>700</td>
<td>Reserves For Unbilled Expenses</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Employee Accounts</td>
<td>2,000</td>
<td>1,200</td>
<td>Interest Cost On Fixed Liabilities</td>
<td>750</td>
<td>750</td>
</tr>
<tr>
<td>Less: Doubtful Accts</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Receivables</td>
<td>34,575</td>
<td>33,000</td>
<td>Total Current Liabilities</td>
<td>33,625</td>
<td>30,000</td>
</tr>
<tr>
<td>Inventory</td>
<td></td>
<td></td>
<td><strong>Fixed Liabilities (Long Term)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finished Products</td>
<td>55,000</td>
<td>60,000</td>
<td>Development Bank Loan @ 10%</td>
<td>50,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Work In Progress</td>
<td>14,000</td>
<td>15,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Materials</td>
<td>69,000</td>
<td>75,000</td>
<td>Total Fixed Liabilities</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Other Supplies</td>
<td>1,500</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less: Inventory losses</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Inventory</td>
<td>137,500</td>
<td>150,000</td>
<td>Total Liabilities</td>
<td>93,625</td>
<td>90,000</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>185,075</td>
<td>200,500</td>
<td>Capital Authorized</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Deferred Assets</strong></td>
<td></td>
<td></td>
<td>400,000 common Shares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Oil</td>
<td>4,000</td>
<td>4,500</td>
<td>Capital issued: 150,000</td>
<td>150,000</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Total Deferred Assets</strong></td>
<td>4,000</td>
<td>4,500</td>
<td>Shares @ $1.00 each</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fixed Assets</strong></td>
<td></td>
<td></td>
<td>Capital Surplus</td>
<td>10,475</td>
<td>10,475</td>
</tr>
<tr>
<td>Land @ cost</td>
<td>20,000</td>
<td>20,000</td>
<td>Earned Surplus</td>
<td>31,775</td>
<td>54,525</td>
</tr>
<tr>
<td>Buildings @ cost</td>
<td>40,000</td>
<td>40,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant, Machinery @ cost</td>
<td>26,000</td>
<td>30,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing tools @ cost</td>
<td>6,500</td>
<td>7,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicles @ cost</td>
<td>8,000</td>
<td>8,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furniture &amp; fixtures @ cost</td>
<td>6,000</td>
<td>6,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less: Accum. Depreciation</td>
<td>12,700</td>
<td>14,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93,800</td>
<td>97,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Fixed Assets</strong></td>
<td>96,800</td>
<td>100,000</td>
<td><strong>Total Shareholders Equity</strong></td>
<td>192,250</td>
<td>215,000</td>
</tr>
<tr>
<td><strong>Goodwill</strong></td>
<td>3,000</td>
<td>3,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>285,875</td>
<td>305,000</td>
<td>Total Liabilities &amp; Shareholders Equity</td>
<td>285,875</td>
<td>305,000</td>
</tr>
</tbody>
</table>
a. Working capital

Calculate the working capital by subtracting current liabilities from current assets. Cash on hand is part of the working capital.

If the result of this calculation is a negative figure, it is something to be seriously concerned about.

It is not uncommon for businesses of any size to have this situation periodically but a low or negative working capital position is a major danger signal.

A business in this situation has a *liquidity* problem or is *illiquid*.

Because owner's equity is less than the debt, the creditors (in effect) own the business. Bankers would be reluctant to lend any more money to the business. Some of the possible solutions to this problem might be:

- Seek more funds through long-term borrowing
- Additional equity investment by the owner/s
- Selling fixed assets and leasing them back from the buyer
- Finding a way to finance some of the accounts payable through suppliers

Express this relationship between liabilities and assets as the working capital ratio. [Refer to *Testing the Financial Strength of Your Business*]

b. Historical comparisons

Comparing balance sheets quarterly and at year-end with those of the same periods in prior years can often reveal trends and weaknesses. You may discover a favourable change that, upon investigation, will lead to making positive changes in the way you do business.
c. Ratio analysis

Ratio analysis is a term for techniques and formulae that allow the businessperson to make quick mathematical tests of the business. This simplifies comparisons with other similar companies in your area and with industry standards.

Varieties of ratios are discussed in Testing the Financial Strength of Your Business.

Two of the more useful ratios are the current ratio and the acid test, sometimes called the quick ratio.

(1) Current ratio

Current ratio measures the liquidity of the company or the company's ability to meet its obligations during the fiscal year.

Divide the current assets by the current liabilities.

As well, the quality of the accounts receivable (A/R) is important. A high percentage of the accounts may be past due in excess of 90 days or they may be predominantly 30-day accounts with customers who have a history of prompt payment.

Therefore, having an aged analysis of accounts receivable (A/R) is important to have before calculating the current ratio.

For example,

If the sum of the current assets is $30,000 and the sum of the current liabilities is $45,000, then the current ratio is 0:67 or a negative, liquid situation.

A rule-of-thumb that many analysts use is a current ratio of 2:0, but this can vary with the business, the season, and what the figures used actually represent.

For example,

The composition of the inventory may be that it is either very easily moved in a short period or it may be dead stock that will be very difficult to sell.
(2) **Acid test or quick ratio**

The acid test or quick ratio is a measurement of the liquidity of the business but it is calculated by dividing the most liquid assets (such as cash, securities, and perhaps *accounts receivable (A/R)*, if they are very current-by-current liabilities.

When the acid test is applied, it may reveal quite a different picture than that revealed by the current ratio.

A common rule-of-thumb (used by analysts for a desirable ratio) is a ratio of 1:0.

However, do not consider this rules-of-thumb a rigid standard to go by; they are only guidelines.

It depends a great deal on the type of business, for example, the seasonality of the business.

On the other hand, how closely the business compares to recognized industry cycles.

Do your homework.

Always be aware of what is normal for your business and how your business compares. Your banker, accountant, and trade publications are good sources for this information. As well, many regional governments have available detailed business profile information.
Summary

There was an introduction to the balance sheet financial report in *Balance Sheet Analysis*. There are three common tests to apply to a balance sheet. Likely, you draw conclusions from these tests too.

Did you think about your business as you went through this material? Apply the ideas presented here to your business.

In *Testing the Financial Strength of Your Business*, we will present many more ways to analyze and test the financial reports you receive from your accountant each month.

---

**The Laws of Money—of investing**

Investigate before you invest.
Spend as much time studying an investment as you do earning the money you put into it.
Never let yourself be rushed.
Celebrate!!

Take time to visit your garden
Testing the Financial Strength of Your Business

Introduction

In Balance Sheet Analysis, we discussed how a business:

- Analyzes its costs
- Builds cost recovery and profit into its pricing
- Monitors monthly business performance
- Performs basic financial performance tests

In Testing the Financial Strength of Your Business, we will expand on what you have learned so far and present many other ways to test the performance of your business and make better business decisions.

How to use this information

Use the financial test methodologies illustrated here to test your own business.

- You should apply these tests to your business on a regular basis—at least every fiscal quarter.
- Compare the results of your tests to accepted standards of performance for businesses of your size, in the same industry.
- You may pick up information on industry standards from your accountant or you can obtain it at most libraries.
- As well, there are a number of government and industry publications detailing profiles of financial information for businesses of all kinds for various regions of the country.

When you make these comparisons, ask after each test:

- How does your business compare to the norms for your industry and region of the country?
- If you do not compare favourably, what remedial action is needed?
- What are the things you are doing well?
- What are the specific areas where you are not performing well?
- What action would be necessary to improve the results?
You may wish to consult with your accountant to help with a detailed analysis and the answering of these questions.

For the purpose of illustration, we will assume some financial figures for a fictitious company called **Well Known Merchandise, Inc.** The data is not seen as it would be on a real balance sheet or income statement, but is only used for illustration of the financial tests.

Below is financial data for **Well Known Merchandise Inc.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>$35,000</td>
</tr>
<tr>
<td>Fixed assets</td>
<td>$100,000</td>
</tr>
<tr>
<td>Beginning inventory</td>
<td>$170,000</td>
</tr>
<tr>
<td>Ending inventory</td>
<td>$150,000</td>
</tr>
<tr>
<td>Average inventory</td>
<td>$160,000</td>
</tr>
<tr>
<td>Average accounts receivable (A/R)</td>
<td>$20,000</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>$30,000</td>
</tr>
<tr>
<td>Long-term liabilities</td>
<td>$60,000</td>
</tr>
<tr>
<td>Shareholder's equity</td>
<td>$200,000</td>
</tr>
<tr>
<td>Number of common shares</td>
<td>200,000</td>
</tr>
<tr>
<td>Preferred share dividends</td>
<td>$20,000</td>
</tr>
<tr>
<td>Net sales</td>
<td>$750,000</td>
</tr>
<tr>
<td>Net credit sales</td>
<td>$140,000</td>
</tr>
<tr>
<td>Average accounts payable</td>
<td>$10,000</td>
</tr>
<tr>
<td>Total credit purchases</td>
<td>$170,000</td>
</tr>
<tr>
<td>Cost of goods sold (CGS)</td>
<td>$500,000</td>
</tr>
<tr>
<td>Net profit (net income) before interest and bank charges</td>
<td>$60,000</td>
</tr>
<tr>
<td>Net profit (net income)</td>
<td>$50,000</td>
</tr>
<tr>
<td>Interest and bank charges</td>
<td>$10,000</td>
</tr>
</tbody>
</table>
**Common tests of business performance**

Refer to some tests that we will discuss here to as business ratios. The term ratio refers to the proportional relationship between values.

For example:

A farmer may say that he has sheep and cows in the ratio of 10 to 3.

This means that he has 10 sheep for every 3 cows.

Or, he has 3½ times as many sheep as he has cows. Often, a ratio is expressed as a fraction.

The ratio of 6 to 10 may be stated as 6/10 or as 6:10.

The business ratios we will discuss are:

a. Operational ratios
b. Liquidity ratios
c. Leverage ratios
d. Profitability ratios

We will discuss various ratios that fall into these categories, where they are used, and why they are used.

In some cases, we will give examples of:

- How these ratios are used in a business situation
- The conclusions that might be drawn
- The action that might be indicated
a. Operational ratios

We have divided this operational ratio information into the following headings:

<table>
<thead>
<tr>
<th>Headings</th>
<th>Related formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Turnover on accounts receivable</td>
<td>Total net credit sales/average accounts receivable</td>
</tr>
<tr>
<td>b. Average accounts collected in person</td>
<td>Days in the period x, average accounts receivable/total net credit sales</td>
</tr>
<tr>
<td>c. Average days payable</td>
<td>Days in the period x accounts payable/total credit purchases</td>
</tr>
<tr>
<td>d. Utilization of assets</td>
<td>Total net sales/total assets</td>
</tr>
<tr>
<td>e. Sales to fixed assets ratio</td>
<td>Net sales/average net fixed assets</td>
</tr>
<tr>
<td>f. Inventory turnover</td>
<td>Cost of goods (CGS) sold (CGS)/average inventory</td>
</tr>
<tr>
<td>g. Days of sales in inventory</td>
<td>Days in the period x average inventory/cost of goods (CGS) sold (CGS)</td>
</tr>
<tr>
<td>h. Sales of employees</td>
<td>Net sales (for the year)/average number of employees</td>
</tr>
</tbody>
</table>

You may wish to print these ratios and their formulae. In addition, the Glossary lists them.

The operational ratios discussed here relate to:

- Management of accounts receivable
- Management of accounts payable
- Management of inventory
- Management of company assets
- Management of employee productivity

These ratios provide you with insight into how to use the business funds and assets within the business.
(1) **Turnover on accounts receivable (A/R)**

This ratio is a measurement of the liquidity of the accounts receivable (A/R) in the business. This tells you the rate at which credit sales are turned into cash.

A higher ratio is an indicator that the company does not have as much money tied up in accounts receivable (A/R) and that customers are paying their accounts quickly.

A lower ratio is an indicator that the company has a large amount of money tied up in accounts receivable (A/R) and that customers are slower in paying their accounts.

### Accounts receivable turnover formula

\[
\text{Total net credit sales/average accounts receivable}
\]

This formula means that the total of the net credit sales for the year is divided by the average accounts receivable that was on the books in the year.

**Example:**

**Well Known Merchandise Inc.** has average accounts receivables of $20,000.

Add the beginning and ending balance of the accounts receivable and divide by 2.

The total of the charge sales or net credit sales for the year was $140,000.

Therefore, applying our accounts receivable turnover formula:

\[
\frac{140,000}{20,000} = 7
\]

Alternatively, the net credit sales are 7 times the average accounts receivable and the ratio is 7:1

Assume that having a high turnover number is always a good thing. However, ratios show the balance that exists between the factors examined.

In the next ratio, we will demonstrate how the balance is important.
(2) **The average account collection period**

The average account collection period is sometimes called receivable days outstanding or RDO for short. This is a measurement of the number of days it takes for customers to pay their accounts.

If the measurement indicates that customers pay their bills in a short period, it could mean that the credit and collection policies of your company are functioning very effectively.

However, it could mean that the credit policies of the company are restrictive and may be affecting sales.

Credit policies have to be flexible enough to both stimulate sales and meet competitive credit policies.

The key and the challenge for the credit department is to ensure the quality of the Accounts receivable (A/R) by only extending credit to customers with good credit histories.

---

*It is important to the health of the business to strike a balance.*

Effective credit policies can:

- Stimulate sales
- Promote inventory turnover
- Maintain cash flow
- Improve profitability
Average account collection period formula

Days in the period x, average accounts receivable/total net credit sales

The period is a year so the number of days is 365. Calculate the average accounts receivable by adding the beginning and ending balance for accounts receivable and dividing by 2.

The formula says to multiple the average accounts receivable by 365 and the result then divided by the total net credit sales.

Example:

Well Known Merchandise, Inc. has average accounts receivable of $20,000.

The charge sales, or net credit sales, are $140,000 for the fiscal year. Therefore, applying the average account collection period formula:

\[ 365 \times \frac{20,000}{140,000} = 52 \]

What the formula says to multiple the average value of accounts receivable carried on the books of the company every day by 365 days in the year.

Divide the results by the total of the net credit sales for the year.

The result is the number of days that it takes for customers to pay their accounts.

In this illustration, it takes the customers of Well Known Merchandise Inc. 52 days to pay their accounts.
Consider the 52 days as good or bad. It really depends on the industry standards and the particular needs of the business at the time.

**For instance:**

The management of a company may have low inventory turnover. This means that the company will have money tied up in inventory. As long as there is tied up money, it is not earning a return on that investment.

The company may decide to make regular credit terms more flexible or alternatively apply more flexible credit terms to some promotions during the year.

This action may improve inventory turnover and therefore favourably affect the cash flow, profitability, and average days payable of the company.

Assume that paying your bills promptly upon receipt of the invoice is desirable. However, as with many of these financial tests, it depends on the business situation and various factors need to be balanced.

Some of these factors are:

- Maintaining the credit rating of the company
- Taking advantage of supplier payment incentives
- Improvement of cash flow in the company
- Improvement of the return on investment (ROI) of cash resources in the company

Below are three examples of average days payable:
Example 1:

Using money costs money

If you borrow money to finance inventory, the lender will charge interest for the use of the money. This interest charge effectively reduces the profit margin realized on the sale of the merchandise.

Longer payment terms on purchases from a supplier can have a significant effect on profitability. The advantages are:

- Not using the cash assets of the business
- Re-deployment of the funds that would have been used
- The merchandise purchase may be mostly sold before payment has to be made so, in effect, the supplier is financing your business

Therefore, negotiating an additional 30, 60 or 90 days terms on a purchase can have an impact on profit.

Example 2:

Taking advantage of supplier volume purchasing discounts and early payment incentives can have an impact on profitability.

A typical example is a supplier offering an additional 5 or 10% discount for a particular volume of merchandise purchase. Making a payment by the 15th of the month following the purchase could bring an additional incentive of 1½–2%.

If a business sells merchandise normally yielding a gross margin (GM) of 33⅓%, even improving the cost by 2% means an improvement of 3% in the gross margin at the selling price. As a result, the business now would make a gross margin of 36⅓% on the selling price.
Example 3:

A company buys a volume of merchandise that would normally be valued at $10,000. The company's normal gross margin (GM) on selling price is 33⅓%.

The supplier offers a discount of 5% off the normal price for the volume purchase.

Making a full payment by the 15th of the month following purchase, the supplier offers an additional incentive of 2%.

The calculation demonstrating profit improvement is as follows:

<table>
<thead>
<tr>
<th>Calculation</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular purchase value</td>
<td>$10,000</td>
</tr>
<tr>
<td>Less 5% discount</td>
<td>$500</td>
</tr>
<tr>
<td>Total</td>
<td>$9,500</td>
</tr>
<tr>
<td>Less payment incentive 2%</td>
<td>$190</td>
</tr>
<tr>
<td>Total</td>
<td>$9,310</td>
</tr>
</tbody>
</table>

This example demonstrates that taking advantage of the volume discount and payment terms improves the purchasing price by 6.9%

(100% - 5% - 2% = 93.1%).

Purchasing at a 6.9% better price means that at the normally selling price that generated 33⅓% gross margin (GM), the gross margin is improved by 10.34% (069 divided by .0667 = .1034).

The average days payable is a measurement of how long it takes your company to pay its bills. These two illustrations point out why analyzing the average days payable is important and then taking action that is appropriate to the company's needs.
**Average days payable formula**

Days in the period x accounts payable/total credit purchases

The period is a year so the number of days is 365. Calculate the average accounts payable by adding the beginning and ending balance for accounts payable and dividing by 2.

The formula says to multiply the average accounts payable by 365 and the result then divided by the total credit purchases.

**Example:**

**Well Known Merchandise Inc.** has average accounts payable of $10,000. The total inventory purchased on credit, or the total credit purchases, are $170,000 for the fiscal year.

Therefore, applying the average accounts payable formula:

\[ \frac{365 \times 10,000}{170,000} = 21.47 \]

What the formula says to multiple the average value of accounts payable carried on the books of the company every day by 365 days in the year.

Divide the total of the total credit purchases for the year.

The result is the number of days that it takes for the company to pay its bills.

In this illustration, it takes the company, **Well Known Merchandise Inc.** 21.47 days to pay its bills.

Considering this good or bad depends on the industry and the particular company's needs. However, in this illustration, the company is paying its bills less than a month after purchase. In most cases, a company like this can gain significant profit advantages by negotiating better payment terms with its suppliers.
(3) **Utilization of assets**

Measuring how efficiently assets are utilized in the generation of sales income is a measurement of the financial health of a business. It is a way of comparing the efficiency of the use of capital assets to others in your industry. The analysis is a measurement of the sales dollars generated for every dollar invested in assets.

The age of assets and the way they are valued can be an important consideration when doing this analysis.

**For example:**

You will get very different results in measuring asset utilization if:

- The original or historical value of fixed assets is used
- The depreciated or 'book value' of the assets is used
- The replacement value of the assets is used

**Utilization of assets formula**

\[
\text{Total net sales/total assets}
\]

The formula says the value of the total net sales of the company is divided by the value of all the assets of the company.

That is the total of the current assets and the fixed assets of the company.

**Example:**

In the case of **Well Known Merchandise Inc.**, the current assets are valued at $35,000 and fixed assets are valued at $100,000 = $135,000. The total net sales of the company are $750,000.

Therefore, applying the utilization of assets formula:

\[
\frac{750,000}{135,000} = 5.55
\]

This example calculation is saying that for each $1.00 of asset value, $5.55 is generated in net sales and the ratio is 5.55:1.
Compare this analysis in your business to standards for your industry.

If the calculation results in a low ratio compared to others in your industry it might mean that your company is not using its assets as efficiently as it could.

Alternatively, it might mean that you have too much money invested in assets and would look for ways of *trimming the fat*.

Look carefully at how fixed assets are valued. As well, look at the condition of those fixed assets. Using undervalued fixed assets because you are using historical or depreciated values will ensure your calculations result in a higher ratio.

A higher ratio than industry norms can sometimes mean that your company is operating efficiently and getting the most out of the assets employed in the business.

However, it can mean that the assets employed in the business are overused or stretched to capacity. In this event, short-term gains in profit may result in additional wear and tear on production equipment.

When replacing equipment sooner than necessary, the replacement cost could lower profitability.

When you analyze the utilization of assets in your company, look for the underlying reasons why a ratio is high or low. It is a very good idea for any company to plan for the orderly replacement of assets by allocating at least a portion of the accumulated depreciation of assets to a reserve for the replacement of capital assets.

**Sales to fixed assets ratio**

This measurement is similar to the utilization of assets formula but with the focus on how, efficiently fixed assets are utilized in the generation of sales income.

It is a way of comparing the efficiency of the use of capital assets to others in your industry.

The analysis is a measurement of the sales dollars generated for every dollar invested in fixed assets.

Again, higher ratio values could mean that the business is using fixed assets efficiently, but it can imply that fixed assets are being overused.
In the event that fixed assets are overused, it could hasten the need to replace them and could, by doing so, prejudice future profits.

### Sales to fixed assets formula

\[
\text{Net sales/average net fixed assets}
\]

The formula says to divide the net sales after discounts, returns, and allowances into the average net fixed assets.

The average net fixed assets are an average of the beginning and ending balances for fixed assets.

### Example:

**Well Known Merchandise Inc.** has net sales of $750,000 and fixed assets of $100,000. For this illustration, we will assume the beginning and ending balance for fixed assets was the same.

Therefore, applying the sales to fixed assets ratio:

\[
\frac{750,000}{100,000} = 7.5
\]

This example calculation is saying that for each $1.00 of fixed asset value, $7.50 is generated in net sales and the ratio is 7.5:1.

Apply this analysis to your business and to standards for your industry.

If the calculation results in a low ratio compared to others in your industry, it might mean that your company is not using its assets as efficiently as it could.

Alternatively, it might mean that you have too much money invested in assets. In that event, you should look for ways to dispose of redundant or superfluous assets.

Plus, look for ways to use assets more efficiently.

All of the other cautions and recommendations discussed in relation to the utilization of assets formula apply to the sales to fixed assets ratio.
(5) **Inventory turnover ratio**

For any business selling merchandise, promoting inventory turnover has a major impact on profitability.

The ratio measuring inventory turnover is one of the most important to your business if your business sells products.

This is because the gross profit of your business increases every time the value of your inventory dollars is turned over.

The term turnover means each time the value of the inventory is sold or replaced.

### Inventory turnover formula

- **Cost of goods sold (CGS)/average inventory**

  Calculate the cost of goods sold (CGS) as follows:

  \[
  \text{Beginning inventory} + \text{net purchases} - \text{ending inventory} = \text{CGS}
  \]

  Calculate the average inventory as follows:

  \[
  \frac{\text{Beginning inventory} + \text{ending inventory}}{2} = \text{average inventory}
  \]

(In a few cases, this calculation may not reflect average inventory throughout the year. In that event, dividing the total of the monthly inventory balances by 12 will give a more accurate average.)

The inventory turnover formula says that the value of the inventory at the beginning of a fiscal period is added to the value of all the purchases during the fiscal period after all discounts, allowances and returns are taken into account.

Then, from this total, the value of the ending inventory is subtracted to obtain the value of the cost of goods sold (CGS) during the fiscal period.
Divide the result of this calculation by the average inventory value for the fiscal period.

**Example:**

In the case of **Well Known Merchandise Inc.**, the cost of goods sold is $500,000 and the average inventory is $160,000.

Therefore, applying the inventory turnover formula:

\[
\frac{500,000}{160,000} = 3.12
\]

This example calculation is saying that the average inventory value turned over 3.12 times during the fiscal period.

Turnover rates vary greatly in different industries.

Compare the turnover rate for your business with the standards for inventory turnover in your industry.

In general, the turnover rates are **high** in businesses that sell perishable goods like fresh vegetables, meat, or flowers.

Turnover rates will be high in businesses carrying seasonal products such as gardening products (in some climates). In addition, those products that are subject to rapid changes in fashion or that may become obsolete in a short a short time.

Turnover rates are usually **lower** in businesses handling durable goods such as machinery, tools, construction products, or heavy appliances.

If the inventory turnover rate for your business varies greatly from industry standards it may be an indication that:

- Purchasing practices need improving
- Marketing policies and strategies need to be analyzed
- Very slow moving or obsolete (dead stock) has been allowed to accumulate and the value of this inventory is lowering your turnover rate
The inventory turnover formula is a good indicator of the general status of the inventory in your business.

However, a detailed examination of the inventory turnover of each product group is necessary on a regular basis.

Remove slow moving or dead stock from inventory constantly. Don't make this an annual task.

Selling off slow moving items, even below cost price, and reinvesting the proceeds in faster moving inventory can have a dramatic effect on turnover rates and profits.

(6) **Days of sales in inventory ratio**

The **days of sales in inventory ratio** tells the business owner how many days that the business could operate with the inventory that is on hand.

It is not likely that the business would go for long periods without replacing stock because business would suffer by not having the items customers need.

Rather, this measurement is a measure of the company investment in inventory. Along with the inventory turnover ratio, the days of sales in inventory can help to determine whether the business has too many dollars invested in inventory.

### Days of sales in inventory formula

\[
\text{Days in the period} \times \frac{\text{average inventory}}{\text{cost of goods sold (CGS)}}
\]

The formula says to multiply the days in the period (which is usually 365 days) by the average inventory, and then divided into the result of the cost of goods sold.

In the case of **Well Known Merchandise Inc.**, the average inventory is $160,000 and the cost of goods sold is $500,000.

Therefore, applying the days of sales in inventory formula:

\[
365 \times \frac{160,000}{500,000} = 116.8
\]

The example calculation is saying that the number of days of sales in inventory is 116.8.

As with the inventory turnover rate, you may consider this measurement as high or low depending on the industry. Again, the measurement will vary with the type of merchandise.
The major point of frequently applying the Inventory turnover formula and the days of sales in inventory formula to your business is:

- To obtain a better return for the money invested in inventory
- To improve the liquidity of the inventory investment
- To improve the freshness and quality of the inventory

(7) Sales per employee ratio

The sales per employee ratio are a very general measurement of the productivity of the employees in the company. If your business is profitable and the performance of the business compares to norms in your industry, this ratio will tell you how much revenue needs to be generated for each employee in the business.

**Sales per employee formula**

\[
\text{Net sales (for the year)/average number of employees}
\]

This formula says to divide the average number of employees into the net sales for the year.

For the purpose of illustration, we will assume that **Well Known Merchandise Inc.** has six employees.

**Example:**

**Well Known Merchandise Inc.** has net sales of $750,000 and the average number of employees is 6.

Therefore, applying the sales per employee formula:

\[
\frac{750,000}{6} = 125,000
\]

This formula says that each $125,000 in net sales may be attributed to each employee in the company.

If your business is not profitable or if you apply this formula to your business and find that, you do not compare to industry standards, look for reasons why your productivity per employee is not up to par.

If you are considering the addition of an employee, apply this formula to your business. It will tell you how many more dollars in net sales will be necessary to offset the cost of the employee if you want to maintain your level of productivity.
Ask if:

- The additional employee is really necessary
- The additional employee will generate the necessary additional revenue
- The additional revenue, after expenses, will result in additional profit

b. Liquidity ratios

The ratios discussed in liquidity ratios relate to the ability of the business to meet its financial obligations. They measure how quickly the business could convert assets into cash to meet short-term obligations or take advantage of opportunities that required the availability of quick cash. A typical example would be taking advantage of supplier early payment discounts.

We have divided liquidity ratios into three headings:

<table>
<thead>
<tr>
<th>Headings</th>
<th>Related Formulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Current ratio</td>
<td>Current assets/current liabilities</td>
</tr>
<tr>
<td>b. Acid test ratio</td>
<td>Quick assets/current liabilities</td>
</tr>
<tr>
<td>c. Inventory to meet working capital</td>
<td>Average inventory/(current assets + average inventory – current liabilities)</td>
</tr>
<tr>
<td>ratio</td>
<td></td>
</tr>
</tbody>
</table>

You may need to print these ratios and their formulae. The Glossary lists these formulae.
(1) Current ratio

The current ratio measures the ability of the business to meet its short-term obligations. Consider short-term obligations as those that are due within the next 12-month period. The current ratio is a measurement of the working capital in the business. Businesses with a favourable current ratio will normally qualify for better credit terms with suppliers and lenders.

<table>
<thead>
<tr>
<th>Current ratio formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets/current liabilities</td>
</tr>
<tr>
<td>This formula says to divide that the current assets by the current liabilities.</td>
</tr>
</tbody>
</table>

Consider current assets to be:
- Cash
- Notes receivable
- Accounts receivable (A/R)
- Marketable securities (stocks, bonds)
- Inventory that may be immediately converted to cash
- Accounts receivable (A/R) that can be readily converted to cash

Consider current liabilities to be:
- Accounts payable
- Notes payable within the next 12 months
- Term loans payable
- Lease amounts payable
- Mortgage monthly payments

Example:

Well Known Merchandise Inc. has current assets of _____ and current liabilities of ____. Therefore, applying the current ratio formula: $35,000/$30,000 = 1.16

This formula says that the current assets exceed current liabilities by a ratio of 1.16:1
A current ratio over 1 is usually acceptable in most businesses. However, you should consult business profiles for the norms in your industry and your size of business.

In many businesses, if the ratio is greater than 2, it may be an indication that the investment in inventory is too high and the capital (cash) in the business is being underemployed.

It is not a good sign if the current ratio is under 1, certainly not on a consistent basis. That would possibly indicate that the business will have difficulty meeting its short-term obligations and wouldn't be able to take advantage of special purchasing opportunities or suppliers' early payment discount terms.

(2) **Acid test ratio**

The acid test ratio is similar to the current ratio; however, the acid test ratio includes only those current assets that can be immediately converted to cash.

Therefore, prepaid items and inventories are not included in the calculation. The acid test ratio measures the company's ability to meet immediately the demands of creditors.

---

**Acid test ratio formula**

This formula says to divide the quick assets by the current liabilities.

Quick assets are:
- Cash
- Marketable securities (stocks, bond)
- Notes receivable
- Accounts receivable

(All overdue accounts excluded)

**Example:**

**Well Known Merchandise Inc.** has current assets of $35,000. For the purpose of simplicity in these illustrations, we haven’t made any judgments as to the liquidity of accounts receivable or inventory.

However, you should do this when doing the calculations for your business.

To illustrate the acid test ratio, let us assume that the *quick assets* of **Well Known Merchandise Inc.** are valued at $28,000.

Therefore, applying the acid test ratio formula:

\[
\frac{28,000}{30,000} = .933
\]

This formula states that the acid test ratio is .933:1.

In other words, the company could meet the immediate demands of its creditors if all of the current obligations were suddenly due and payable.
(3) **Inventory to net working capital ratio**

It is important not to have too much of the working capital of the business tied up in inventory, because it can be expected that only a portion of the inventory could be immediately converted to cash. The balance of the inventory would take some time to liquidate.

Too high a level of cash invested in inventory would indicate that:
- The business is not making full use of suppliers' terms
- Is not negotiating favourable terms with suppliers
- The business may not be able to meet short-term obligations

**Inventory to net working capital formula**

\[
\text{Average inventory}/ (\text{current assets} + \text{average inventory} – \text{current liabilities})
\]

This formula says to divide the average inventory by the sum of the current assets plus average inventory minus the current liabilities.

**Example:**

**Well Known Merchandise Inc.** has an average inventory value of $160,000. Current assets are $35,000. Current liabilities are $30,000.

Therefore, applying the inventory to net working capital formula:

\[
\frac{160,000}{(35,000+160,000) - 30,000} = .969.
\]

This formula says that the average inventory value is 96.9% of the working capital in the business.

Apply this formula to your business.

Compare the results to standards for a business of your size in your industry.

It is usually considered a bad sign if, consistently, average inventory value exceeds the sum of current assets minus current liabilities.

In this event, the company will have too much money tied up in inventory and won't be able to meet the current demands of its creditors.
c. Leverage ratios

The ratios discussed here measure the degree to which:

- The company uses outside capital sources to finance the business
- The company uses the investment of shareholders to finance the business

These ratios are an indication of the ability of the business to repay its creditors and investors.

Two headings divide the leverage ratios:

<table>
<thead>
<tr>
<th>Headings</th>
<th>Related formulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Debt asset ratio</td>
<td>Current liabilities + long-term liabilities/(current assets + fixed assets)</td>
</tr>
<tr>
<td>b. Debt equity ratio</td>
<td>Current liabilities + long-term liabilities/shareholders equity</td>
</tr>
</tbody>
</table>

**(1) Debt to asset ratio**

The debt to asset ratio measures how much of the assets of the business have been financed from outside lending sources.

This is a key ratio from the perspective of potential lenders.

They want to know how much of the capital in the business has come from the shareholders.

Low debt to asset ratios = better ability to repay creditors

**Debt to asset ratio formula**

\[
\text{Current liabilities + long term liabilities} / (\text{current assets + fixed assets})
\]

This formula says to divide the total liabilities by total assets (the sum of all current and fixed assets).

**Example:**

**Well Known Merchandise Inc.** has current liabilities of $30,000 and long-term liabilities of $60,000 for total liabilities of $90,000. Current assets are $35,000 and fixed assets are $100,000.

Therefore, applying the debt to asset ratio formula:

\[
(\text{$30,000 + $60,000}) / (\text{$35,000 + $100,000}) = .667.
\]
Apply the debt to asset ratio to your business. Compare the result to standards for your industry and your size of business. If the ratio is high, look for ways of improving the ratio such as:

- Reducing and/or eliminating slow moving and dead stock
- Use some of the proceeds of stock reduction to generally pay down debt
- Paying off notes and loans that are not directly financed from current revenues
- Use some of the proceeds of stock reduction to reinvest in higher turnover inventory items
- Reducing or eliminating overage receivables
- Use some of the proceeds for debt reduction as with the proceeds from inventory reduction

If you are contemplating expansion of your business and are likely to require outside financing, you want to make your business as attractive to an investor as possible.

Lowering the debt to asset ratio is an important factor in making your business attractive to an investor.
(2) Debt to equity ratio

Consider the debt to equity ratio as very important by most lenders. It measures the amount of shareholders’ investment in relation to the liabilities of the business. Lenders prefer to see low debt to equity ratios because it means the business has been able to finance itself without a great deal of reliance on creditors. However, there is no rule of thumb for debt to equity ratios and the ratio will usually vary depending on whether the business is a young business or a mature business.

Debt to equity ratio formula

\[
\text{Current liabilities + long-term liabilities/shareholder’s equity}
\]

This formula says to divide the total liabilities (current liabilities + long-term liabilities) by the shareholders' equity.

Shareholder’s equity may take various forms (cash, bonds, stock, or property). There are a number of ways to structure the investment.

If the company incorporates, issue the stock to the participants based on their investment. We will not deal with this here.

For the purpose of illustration of the debt to equity ratio, we will assume that the business is not a corporation and the partners are equal investors.

Example:

Well Known Merchandise has current liabilities of $30,000 and long-term liabilities of $60,000. The shareholders' equity is $200,000.

Therefore, applying the debt to equity ratio formula:

\[
\frac{30,000 + 60,000}{200,000} = .45
\]

This formula says that the ratio of total liabilities of the business to the shareholders’ equity is 45:1.

Alternatively, the total liabilities are 45% of the shareholder’s equity.

Apply the debt to equity ratio to your business. Compare the results to standards for your industry and the size and maturity of your business.
d. Profitability ratios

The profitability ratios relate to how much net profit that is generated by the business in relation to the investment in the business and the assets that are employed.

Profit is, after all, the reason for the existence of most businesses. Business owners frequently invest and risk their life savings.

They spend long hours managing their businesses.

In most cases, at the end of the day, they do not want to ‘just make wages' for their efforts.

If the business does not generate an acceptable ‘bottom line' profit, the owners may be better off financially to invest their money and efforts in another enterprise.

Five headings divide profitability ratios:

<table>
<thead>
<tr>
<th>Headings</th>
<th>Related formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Return on sale ratio</td>
<td>Net profit after taxes/net sales</td>
</tr>
<tr>
<td>b. Return on shareholder's equity ratio</td>
<td>Net income/shareholder's equity</td>
</tr>
<tr>
<td>c. Number of times interest earned ratio</td>
<td>Net profit before interest and taxes/annual interest and bank charges</td>
</tr>
<tr>
<td>d. Return on total assets ratio</td>
<td>Net profit before interest and taxes/annual interest and bank charges</td>
</tr>
<tr>
<td>e. Earning per share ratio</td>
<td>Net income – preferred dividends/number of common shares</td>
</tr>
</tbody>
</table>

You may want to print these ratios and their formulae. The Glossary lists these formulae.
(1) **Return on sales ratio**

The rate of sales ratio is a measurement of how much profit the business generates, after taxes, on each dollar of net sales. In other words, how much after tax net income (net profit) is generated for each dollar in net sales.

**Return on sales ratio formula**

\[
\frac{\text{Net profit after taxes}}{\text{net sales}}
\]

This formula says that after operating expenses, interest expenses, and taxes are paid; divide the net profit of the company by the net sales.

**Example:**

**Well Known Merchandise Inc.** has generated a net profit of $50,000 and had net sales of $750,000.

Therefore, applying the return on sales ratio formula:

\[
\frac{50,000}{750,000} = 0.067.
\]

This formula says that after all expenses and taxes are paid, **Well Known Merchandise Inc.** earned a return on sales of $.067 per $1.00 of sales or, a ratio of .067:1.

Consider this result as good or bad. It really depends on what is normal for businesses of the same size in the same industry. It may seem that 7 cents on the dollar is a low return. However, there are a number of industries where the return on sales is 1½–2 cents on the dollar.

Apply this formula to your business. How do the results compare to other businesses in your industry?
(2) *Return on shareholder's equity ratio*

The return on shareholder's equity ratio is a measurement of how much money, on an annual basis, the shareholders receive for every dollar they have invested in the business.

**Return on shareholders equity formula**

\[
\text{Net income/shareholder’s equity}
\]

This formula says to divide the net income of the business (after all expenses and taxes are paid) by the shareholder’s equity

**Example:**

*Well Known Merchandise Inc.* has a net income of $50,000 and the shareholder’s equity in the business is $200,000.

Therefore, applying the return on shareholder’s equity formula:

\[
\frac{50,000}{200,000} = .25
\]

This formula says that at the end of the fiscal year shareholders of *Well Known Merchandise Inc.* received $.25 for each $1.00 invested in the business.

That is a 25% return on their investment for the year.

In most cases, consider 25% an excellent return. However, is that the case every year or do the results in that industry fluctuate greatly from year to year?

Apply this formula to your business. Compare the result to other businesses of similar size and shareholders' investment in your industry.
(3) **Number of times interest earned ratio**

The number of times interest earned ratio measures the ability of the business to pay the interest on its borrowed capital.

The larger the value of this ratio the more confident lenders are in the ability of the business to handle their debts.

A low value for this ratio would tell lenders that the business could have a problem meeting its financial obligations.

---

**Number of times interest earned formula**

Net profit before interest and taxes/annual interest and bank charges

This formula says to divide the net profit of the company (before interest and deducted taxes) by the total interest and bank charges.

**Example:**

**Well Known Merchandise Inc.** has a net profit before interest and bank charges of $60,000. Interest and bank charges for the year were $10,000.

Therefore, applying the number of times interest earned formula: $60,000/$10,000 = 6.

The formula says that the net profit of **Well Known Merchandise Inc.** was six times the value of the interest and bank charges that were paid during the year.

Lenders would likely consider **Well Known Merchandise Inc.** a limited risk and would be willing to loan further funds to the company.

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Apply this formula to your business. Compare the results to other companies in your industry of similar size.
(4) **Return on total assets**

The return on total assets is a measurement of the efficiency of the business in using its assets to generate income. Seasonal variations in income need to be taken into account when the calculation is made. You may want to apply the formula using the total for assets owned and, again, excluding those assets the company leases.

**Return on total assets formula**

Net income (from operations)/average total assets

Net Income from operations does not include expenses that are not part of operations. Exclude expense items such as income taxes and interest charges.

An average total asset is the sum of average current assets + average fixed assets. It is important in this calculation to use the averages because the valuation of these assets could fluctuate during the year.

The formula says to divide the net income of the company by the average total assets.

For the purpose of the illustration, we will use the value for current assets and fixed assets of **Well Known Merchandise Inc.** to calculate the average total assets.

**Example:**

**Well Known Merchandise Inc.** has net income of $60,000. Current assets are $35,000 and fixed assets are $100,000. Therefore, assuming these are the averages, average total assets are $135,000.

Therefore, applying the return on total assets formula:

$60,000/$135,000 = .4444

The formula says that the net income of **Well Known Merchandise Inc.** for the fiscal period was 44.44% of the average total asset value.

Apply the formula to your business. Compare the result to norms for your industry and size of business.
(5) *Earnings per share ratio*

The earnings per share ratio are a measurement of the company earnings per share of common stock. The measurement is taken after taxes are paid and any dividends paid to preferred shareholders.

**Preferred shareholders** are usually investors outside the company or at least not part of the ownership of the company.

Typically, their investment is preferred as to a rate of return on any earnings generated but preferred shareholders can be guaranteed a rate of return for a period.

In some cases, it may involve an option to convert the preferred stock to shares of common stock on a pre-established conversion ratio.

Preferred shareholders do not usually have voting rights and have any say in the daily operations of the company.

**Common shareholders** have direct ownership of the company.

The common shareholders do have a say in the operations of the company and they share in the net income after tax profits that may be disbursed by the company.

---

**Earnings per share formula**

\[
\text{Net income—preferred dividends/number of common shares}
\]

This formula says to divide the number of common shares into the net income of the company, minus the preferred dividends.

**Example:**

*Well Known Merchandise Inc.* has a net income of $50,000 and pays preferred dividends of $20,000. The number of common shares is 200,000, which represents the investment of the owners of $1.00 per share.

Therefore, applying the earnings per share formula:

\[
50,000 - 20,000 / 200,000 = 0.15
\]

This formula says to divide the net income of the company minus the preferred share dividends by the number of common shares.

The result is that the earnings per common share were $0.15/per share.

This means that for every $1.00 the common shareholders have invested, they earned 15 cents or 15%.

This is not always disbursed to the common shareholders.

Usually some of this money is held as retained earnings or reserves for capital projects.
Apply this formula to your business. Compare the result to other similar businesses in your industry.

**Summary**

In *Testing the Financial Strength of Your Business*, we discussed methods of testing and monitoring the financial strength of your business. You may not use all of these tests every time you do your monthly performance review; however, as you discover variances in your financial statements and reports, you will find these ratios useful in testing your business.

As you move through the material in this section, did you think of your own business? Did you think about how you now review your financial reports?

Did you apply some of the ratios to your business and ask yourself:

- What tests should you apply to the data now?
- What do the ratios actually tell you about your business?
- How do you analyze the data?
- What conclusions should you draw from your analysis?
- How will your conclusions benefit your business?

This material has introduced you to some basic measurement ideas and tools that will help you make better business decisions. Using these methods will allow you to compare your business performance to other businesses in your industry.

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**Laws of Money—of accumulation**

Great financial achievement is an accumulation of hundreds of small efforts. You should build a momentum to your savings plan and let nothing get in its way.
Celebrate!!

Do some skating
**Other products and modules for sale**

Other modules available on this site deal specifically with aspects of business planning research and analysis. For a complete in depth treatment of operational financial management, the BizBite Consulting Group product *Financial Management* also is available.

All of the business testing formulae presented in this module are available in Interactive form in our product 'Interactive Excel Workbooks'. In the workbooks, you can insert your own figures in the various formulae and the calculations are automatically completed for you. You simply follow the directions on the title page of the Workbooks.

For detailed information on the content of these products, please go to ‘Product’ on the menu bar on the web site.
Glossary for Terms

**Accounts receivable (A/R)**—Accounts receivables (A/R) are accounts with customers that the business has sold goods or services to on credit terms.

**Accounts Receivable Turnover Formula**—total net credit sales/average accounts receivable

**Break-even point (BEP)**—the sales quantity where the firm's total costs will just equal its total revenue

**Break-even point (BEP) analysis**—It is a method used to determine the point at which business will neither make a profit nor incur a loss. In other words, profits derived from revenue will equal the fixed and variable costs of the business.

**Break-even point (BEP) formulae**—the basic formula is: \( S = FC + VC \)

In this formula \( S = \) sales and \( FC + VC = \) fixed costs + variable costs.

**Cost of goods sold (CGS)**—is an item that appears on the Operating Statement, sometimes called either the Income Statement or the Profit and Loss Statement. Adding inventory purchases during the accounting period to the beginning inventory, then subtracting the ending inventory for the period derives the CGS.

**Fixed costs**—fixed costs are those costs not associated with, or the result of, the acquisition and sale of business offerings

**Formula for calculating the CGS ratio**—cost of goods sold (CGS) for the period/average inventory

**Illiquid**—A business is illiquid if it is unable to cover its expenses on a consistent basis

**Inventory shrinkage**—is a term for shortages or losses of inventory due to spoilage of perishable goods, but it can be an allowance made for losses due to stealing by customers—an allowance for shoplifting

**Inventory to net working capital formula**—average inventory/ (current assets + average inventory—current liabilities)

**Inventory turnover**—the rate at which the initial or beginning inventory investment is sold. If the beginning inventory investment is replaced three times during the fiscal year, the inventory turnover is said to be three or sometimes expressed as three turns per year.
Liquidity—describes how readily a business could convert assets to cash

Pro-forma cash flow statement—is sometimes called a cash flow projection or simply a cash flow statement. We will use the term pro-forma cash flow statement here

Pro-forma—is a term meaning a projection or estimate of what may result in the future from actions in the present. A pro-forma financial statement is one that shows how the actual operations of the business will turn out if certain assumptions are realized.

PY—abbreviation meaning Prior Year

Return on investment (ROI)—is how much profit is generated by the business in relation to the investment in the business. (See Profitability Ratios)

Statement of earned surplus—a statement that shows the amount of money derived from operations to date that is retained in the company after taxes and dividends are paid out.

Variable costs—Variable costs are business costs related to the acquisition and resale of offerings or the production of goods and services

YTD—abbreviation meaning Year To Date