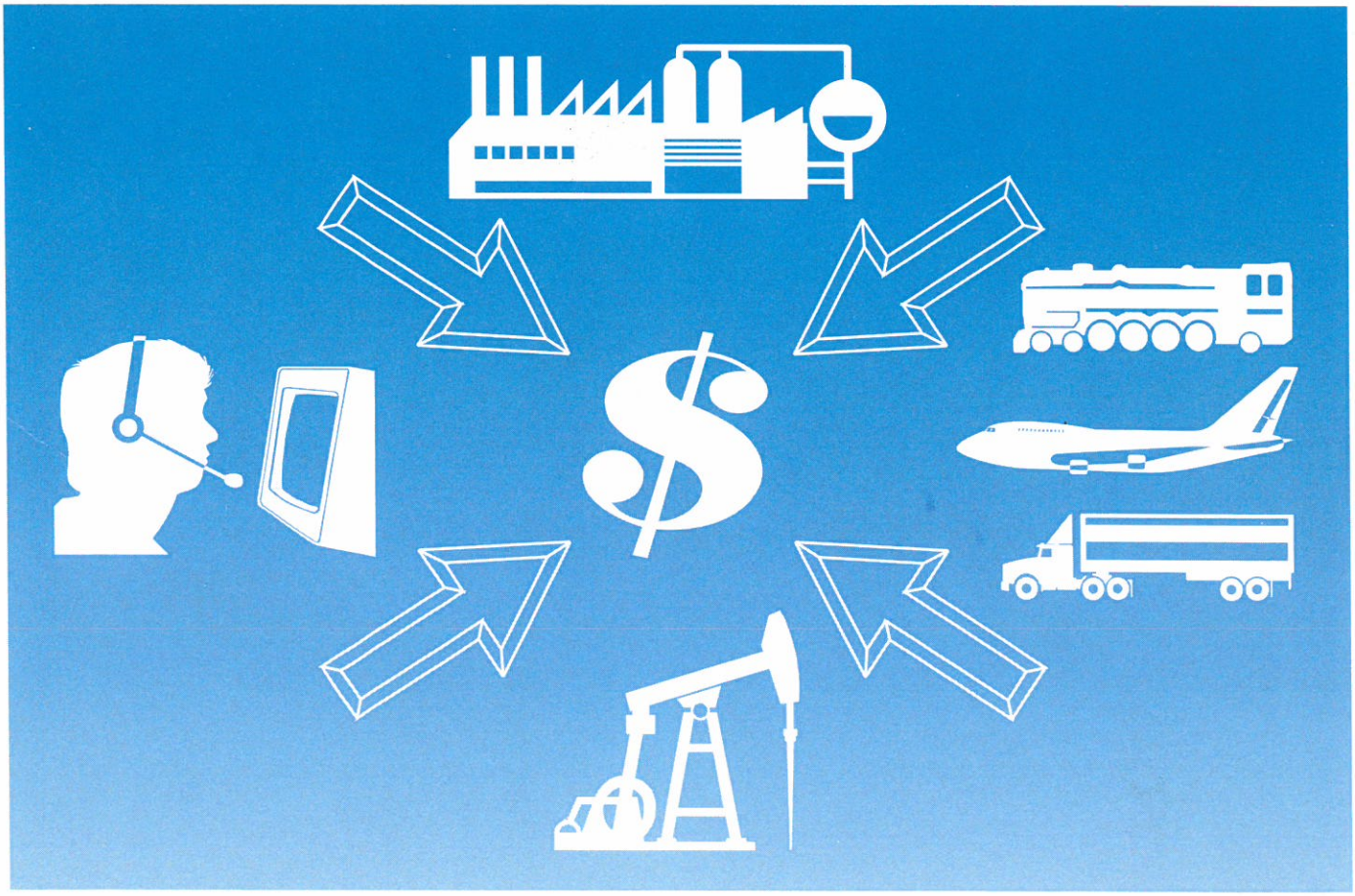
Financial Performance Indicators for Canadian Business



Statistics Canada Statistique Canada

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FINANCIAL PERFORMANCE INDICATORS FOR CANADIAN BUSINESS

2001 Edition - Volume 0

Concepts, Sources and Methods

Symbols

The following standard symbols are used in Statistics Canada publications:

. not available for any reference period

.. not available for a specific reference period

... not applicable

p preliminary

r revised

x suppressed to meet the confidentiality requirements of the *Statistics Act*

E use with caution

F too unreliable to be published

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This publication was prepared under the direction of:

- **Cynthia Baumgarten,** Director, Industrial Organization and Finance Division
- **Ed Hamilton,** Chief, Business Finance Statistics Project
- **Mario Vella** , Business Finance Statistics Project
- **Rosario Faubert,** Business Finance Statistics Project
- **Jeannine D'Angelo,** Client Services and Publications

SUPPORT SPECIALISTS

- **Vo Vuong**
- **Jennifer MacDonald**
- **Michel Carpentier**
- **Martin Brière**

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1. INTRODUCTION

Financial Performance Indicators for Canadian Business is an authoritative reference source of key financial ratios by industry. It is based on up-to-date, reliable and comprehensive data on Canadian businesses, derived from Statistics Canada databases of financial statements.

The indicators are designed to serve as financial performance benchmarks against which individual firms and industries can be compared. It allows firms to precisely position themselves within their peer group.

2. CONCEPTS, SOURCES AND METHODS

2.1 INDUSTRY AND SIZE GROUPS

The publication tables are presented by industry and by size of firm. Firms are grouped by size based on annual sales revenue.

Two Basic Firm Size Groupings

1. Large and Medium firms found in volume 1:
a) Medium firms have annual sales revenue from $5 million to $75 million.
b) Large firms have annual sales revenue over $75 million.

2. Small and medium firms found in volume 2-3:
a) Small firms have annual sales revenue from $30,000 to $5 million.
b) Medium firms have annual sales revenue from over $5 million to $25 million.

The small firms are further divided into two sub-groups, $30,000 to $500,000 and over $500,000 to $5 million.

Medium Sized Firms - Two Definitions

There is no one standard definition of small, medium and large firms. We have provided two alternate definitions of medium size firms, $5 million to $25 million in volumes 2-3 and $5 million to $75 million in volume 1, to give the user a choice of the definition which best serves their need.

Within the two basic size groupings noted above, firms are classified by industry

Volume 1

The business unit being classified by industry is the individual corporation or the family of corporations under common ownership and control (parent and subsidiaries). These statistical units are referred to as "enterprises". Statistics Canada surveys financial statements of enterprises for all types of businesses across Canada. Larger enterprises tend to be involved in more than one industry. Some carry on vertically and horizontally integrated operations, while others are involved in a diversity of unrelated industrial activities. For example, there are integrated petroleum enterprises that are involved in the exploration, extraction, refining and distribution of petroleum products. These activities span several industries. Smaller enterprises tend to be single independent corporations that are involved in only one industry.

Larger enterprises tend to have several establishments and are involved in more than one industry; therefore, coding such "complex" enterprises using NAICS introduces limitations as explained above.

Volume 2-3

The Business Number (BN) or legal entity is the level at which the data used for Volume 2-3 are collected (see Section 2.2 Sources of Data) and a NAICS code is assigned, and is therefore the level at which the ratios are produced and ranked. (The legal entity record represents normally a corporation. Corporations through shared ownership can own and control other corporation(s). A group of corporations under common ownership and control is referred to as the legal structure.)

Industry Classification

The industrial coding system used is the North American Industry Classification System (NAICS). NAICS is based on supply side or production oriented principles, to ensure that industrial data, classified to NAICS, is suitable for the analysis of production related issues such as industrial performance. The economic transactors for which NAICS is designed are businesses (and other organizations) engaged in the production of goods and services.

NAICS is designed for the compilation of production statistics and, therefore, for the classification of data relating to establishments (and locations). It takes into account the specialization of activities generally found at the level of the producing units of businesses. The criteria used to group establishments into industries in NAICS are similarity of input structures, labour skills or production processes used.

NAICS can also be used for classifying enterprises (see explanation below). However, when NAICS is used for the classification of enterprises and the compilation of financial statistics of businesses, the following caveat applies: NAICS has not been specially designed to take account of the wide range of vertically or horizontally integrated activities of large and complex, multi-establishment enterprises.

Industrial activity is now coded via one system, NAICS, regardless of unit description for example the Enterprise (the top of the hierarchy), is associated with a complete set of financial statements the Company is the level at which operating profit can be measured the Establishment is the level at which the accounting data required to measure production is available (principal inputs, revenues, salaries and wages).

For further information on NAICS, please visit the Statistics Canada Web site at www.statcan.ca.

2.2 SOURCES OF DATA

The publication is split into 2 volumes:

Volume 1 covers medium and large firms with annual sales revenue over $5 million. It is based on 1998, 1999 and 2000 data from the Statistics Canada quarterly sample survey of enterprise financial statement database. It covers all enterprises in all industries, both financial and non-financial.

Volume 2-3 covers small and medium firms with annual sales revenue between $30,000 and $25 million. It is based on 1998, 1999 and 2000 data from the General Index of Financial Information (GIFI), the financial information provided to the Canada Customs and Revenue Agency. It covers all non-financial industries. The GIFI database is comprehensive in its coverage of the population and all the ratios that can be produced from this source are included in volume 2-3.

Summary of data sources:

1. Quarterly sample survey 1998, 1999 and 2000 data used in volume 1 covers only medium and large sized incorporated businesses. Data on small businesses is not available from this database.

2. General Index of Financial Information 1998, 1999 and 2000 data used in volume 2-3 covers small and medium sized incorporated businesses.

The databases noted above contain comprehensive sets of data covering complete balance sheets and income statements of corporate enterprises.

The first database is a sample of the population. It includes approximately 4,000 units covering the medium and large firms found in volume 1. The second data source, GIFI covers small and medium firms with annual sales revenue between $30,000 and $25 million classified to non-financial industries. Financial industries, all inactive and dormant corporations, and corporations with sales less than $30,000 are excluded from volume 2-3.

TABLE 1

Elements	Volume 1	Volume 2-3
Statistical tables - data content:		
- number of financial ratios	15	15
- common sized balance sheet	Yes	Yes
- year to year % change in sales	No	Yes
Reference year(s)	1998, 1999,2000	1998, 1999,2000
Number of industry groups (NAICS) (all non-financial industries)	144	812

The 2000 data on small and medium firms in volume 2-3 is facilitated by using a partially complete 2000 GIFI file of 1 million in-scope corporations which represent about 90% of the expected total.

The following table summarizes the number of corporations used to derive the financial ratios in each of the volumes.

TABLE 2
Approximate number of in-scope corporations used in each volume

Year	Volume 1	Volume 2-3
1998	4,102	0.9 Million
1999	3,768	1.1 Million
2000	4,465	1.2 Million

2.3 STATISTICAL TABLES CONTENT

Volumes 1 and 2-3:

Table 1 contains 15 financial ratios for the non-financial industries. The financial ratios are categorized into three groups, profitability, solvency and efficiency. Profitability ratios include profit margins on sales, and rates of return. Solvency ratios include interest coverage, and balance sheet financing structural ratios. All the financial ratios are explained later in this document. Table 2 contains a "common-sized" balance sheet, which shows each balance sheet account as a percentage of total assets. It is intended to represent the structure of a typical firm in the industry.

Volume 1 is available at the national level.

Volume 2-3 is available at both the national and provincial level. It also includes year to year percentage change in sales, and percentage distribution of the firms with profits or losses is provided.

2.4 FINANCIAL RATIOS APPEARING IN VOLUMES 1 AND 2-3: EXPLANATIONS AND FORMULAS

Net profit margin

This ratio measures the end result of operations for the year. It is an after-tax profit that is available to the owners of a business. Net profit margin is sometimes referred to as "net return on sales", because it is expressed as a percentage of sales. It tells how many cents of a revenue dollar remain in the net earnings after all expense deductions. It is a reflection of a firm's management ability to control the level of costs or expenses relative to sales revenue.

Net profit margin: $\frac{\text{net profit}}{\text{total operating revenue}}$

Pretax profit margin

This ratio measures the results of operations for the year before taking into account income tax expense. It indicates how many cents of a revenue dollar remain in earnings after all expenses, except income tax expense, are deducted. The ratio is expressed as a percentage of operating revenue.

Pretax profit margin: $\frac{\text{pretax profit}}{\text{total operating revenue}}$

Operating profit margin

Operating profit is the net result of the principal business activities of a firm. This profit is before taking into account interest expense, investment income, non-recurring losses from the write-down of assets, gains or losses realized on the disposal of assets, and income tax expense. This ratio indicates management's ability to generate earnings from the principal business activities of a firm. The ratio is expressed as a percentage of operating revenue.

Operating profit margin:

$$\frac{\text{operating profit}}{\text{total operating revenue}}$$

Gross profit margin

Gross profit is the excess of sales over cost of sales. Gross profit margin is expressed as a percentage of sales. This ratio indicates the efficiency of management in turning over the firm's goods and services at a profit, by measuring the gross profit generated by each dollar of sales. For retailers and wholesalers, the cost of sales represents the cost of goods purchased for resale. For other types of businesses, such as manufacturers, it represents the direct costs of producing the goods or services sold.

Gross profit margin:

$$\frac{\text{gross profit}}{\text{sales of goods \& services}}$$

Operating revenue to net operating assets

The net operating assets turnover ratio measures how efficiently a firm has used its net operating assets (current assets, capital assets, other assets, less accounts payable and other current liabilities) to generate operating revenue. It provides a basis for assessing a firm's ability to generate revenue from a particular level of investment in assets. The ratio expresses operating revenue as a percentage of net operating assets.

Operating revenue to net operating assets:

$$\frac{\text{total operating revenue}}{\text{total operating assets - accounts payable and other current liabilities}}$$

Return on net operating assets

This ratio provides a measure of the profitability from operations. It tells how many cents of operating profit are generated to every dollar of net operating assets.

Return on net operating assets:

$$\frac{\text{operating profit}}{\text{total operating assets - accounts payable and other current liabilities}}$$

Pretax profit to assets

This ratio indicates how many of cents of pretax profits are earned per dollar of total assets. Pretax profit is the excess of operating and other revenue over operating and non-operating expenses before accounting for income tax on profits.

Pretax profit to assets:	$\frac{\text{pretax profit or (loss)}}{\text{total assets}}$

Return on capital employed

This ratio measures profitability and how well management has employed the assets, by calculating the percentage return on total capital provided by the owners and lenders (creditors). The earnings figure is before taking into account interest expense (payments to lenders) and dividends (payments to owners). The ratio indicates how many cents are returned to every dollar of capital invested.

Return on capital employed:	$\frac{\text{net profit + interest expense}}{\text{short-term loans + long-term loans and debt + shareholders' equity}}$

Return on equity

This ratio measures the level of return to the owners (investors) and it represents their measure of profitability. The earnings figure is the after-tax profits, including a deduction for interest expense (payments to lenders). It is the net profit available to the owners (investors). The ratio indicates how many cents are returned to every dollar invested by the owners.

Return on equity:	$\frac{\text{net profit}}{\text{shareholders' equity}}$

Receivable turnover

This ratio provides a measure of the quality and relative size of accounts receivable. It indicates the effectiveness of a firm's credit policy by calculating how often accounts receivable are converted into cash during the year. The ratio divides the outstanding receivables figure at year-end into the year's sales.

Receivable turnover:	$\frac{\text{sales of goods \& services}}{\text{accounts receivable}}$

Inventory turnover

This ratio is a measure of the adequacy of inventory for the volume of business and how efficiently management turns over the inventory in relation to other firms in the industry. The ratio divides the year-end inventory into the cost of sales for the year.

Inventory turnover:	$\frac{\text{cost of sales}}{\text{inventory}}$

Working capital

This ratio examines the relationship of current assets to current liabilities. It measures the ability to pay short-term debts easily when they become due.

Working capital:	$\frac{\text{current assets}}{\text{current liabilities}}$

Debt to equity

This ratio examines the relationship of debt (loans, bonds, debentures) to shareholders' equity. It compares the relative size of debt to resources invested by the owners. It indicates the extent to which a firm relies on borrowed funds to finance its operations. Firms that rely heavily on borrowed funds are said to be highly leveraged.

Debt to equity:	$\frac{\text{short-term loans + long-term loans and debt}}{\text{shareholders' equity}}$

Liabilities to assets

This ratio indicates the relationship of liabilities to assets. It tells what portion of the assets are financed by debt and other liabilities.

Liabilities to assets:	$\frac{\text{total liabilities}}{\text{total assets}}$

Interest coverage

This ratio measures the ability to pay interest charges on debt and to protect creditors from interest payment default. The ratio indicates the number of dollars of earnings available to pay interest for every dollar of interest expense incurred.

Interest coverage:	$\frac{\text{pretax profit + interest expense}}{\text{interest expense}}$

Sales - year over year % change - Volume 2-3 only

This ratio measures the growth rate for a matched group of firms in each industry . It is based on firms that are found in the database for both the current year and the previous year. Firms with percentage changes of over 100% are filtered out of the industry calculation.

Sales: annual growth rate:	$\frac{\text{Sales current year - Sales previous year}}{\text{Sales previous year}}$

2.5 RELIABILITY OF DATA

There are two categories of errors in statistical information, sampling errors and non-sampling errors. Sampling errors arise because estimates are being prepared based on a sample of the universe rather than collecting information from all units in the universe. These errors can be measured.

Volume 1 data is based on the quarterly sample. The survey is designed to cover 100% of the largest firms (a census). The medium sized firms are sampled. The sampling rate varies from industry to industry. It ranges from 1 in 2 to 1 in 3 for medium sized firms. The sampling rate is high, so the sampling error is small.

Volume 2-3 data is based on the entire population so there is no sampling error. The 2000 GIFI database used for the volume 2-3 tabulations was only partially complete. It is based on 2000 corporate income tax returns filed and captured as of October, 2000. Therefore, there could be biases in the 2000 data. Certain types of corporations may tend to file earlier, such as corporations with year-ends earlier in 2000 or corporations with losses and applying for refunds. The biases have not been measured. However, the biases would probably have a limited affect, because about 90% of the total number of corporations are included in the preliminary 2000 file that was used for this report.

Financial statement data reported to Statistics Canada could be incorrect. Also, there could be data capture errors (in the 1998 and 1999 GIFI data). These errors are referred to as non-sampling errors.

The data is edited and analyzed to reduce non-sampling errors. For example, accounting integrity edits pick up financial statement errors which are corrected. A limited amount of year to year comparisons are made to detect large changes. As well, firms with extreme values are filtered out of the tabulations.

2.6 MEDIANS AND QUARTILES

The ratios in the tables are based on the ratios derived from the financial statements of individual firms, and not on industry aggregate financial statements. The firms' ratios in each group are ranked from the highest to the lowest ratio. The quartile and median boundaries are computed from this distribution. The statistical tables display ratios at the quartile and median boundaries.

What are medians and quartiles?

Averages (Median):	Median is a measure of central tendency or a central location of a set of values. It occupies the middle position (50th percentile) in an array of values. It is frequently used in skewed distributions. The median is not affected by the size of the values or extreme items. This average is compared to the mean average.
Arithmetic mean average:	Arithmetic mean average or industry ratio is influenced in the direction of a limited number of extremely large or small values. Its value may be disproportionately distorted by a relatively few extreme values. It is the sum of the values divided by the number of observations.
Distribution of ratios (Quartiles):	A distributive analysis measures the extent of the spread or dispersion of the values. Quartiles tell the distance between the 25th, 50th and 75th percentile positions.

Median - Average or Typical Firm - *for the financial ratios table*

Each financial ratio is ranked from highest to lowest. The typical ratio is the median (M), or the ratio in the middle of the ranking.

Quartiles

The quartile (Q) data displays the median ratio (50% position in the ranking) and the ratio for two other positions. The first position is the ratio at the 75th percentile and the other position is the ratio at the 25th percentile in the ranking. The ratio at the (Q3) 75th percentile indicates there are 75% of the ratios below that ratio. The ratio at the (Q2) 50th percentile indicates there are 50% of the ratios below that ratio, and the ratio at the (Q1) 25th percentile indicates there are 25% of the ratios below that ratio.

Quartile data are disclosed when the number of firms in the group is sufficient to produce a meaningful distribution. Otherwise, only median values are shown. The full quartile presentation tells not only the average but the distribution of the ratios in the group.

2.7 DATA SUPPRESSIONS AND RATIO DEFAULTS

Data Suppressions

If the number of firms in a size group is too small the data are suppressed as confidential to meet the secrecy requirements of the Statistics Act. The symbol used is "X".

Data that are not appropriate or meaningful is indicated by the symbol "...".

Industries that produce and sell services, as opposed to goods, do not have a gross margin (sale of goods minus cost of goods sold). These industries have very little or no inventory of goods for sale. Therefore, the gross margin ratio and inventory turnover ratio are not shown.

If the sample for a size group is small and the firms are widely distributed the quartile and median data may not be representative or meaningful. In these cases the data are suppressed using the symbol "...".

The general guidelines used for suppressions are set out as follows:

1. If the number of firms in the group is less than 7, the ratio is suppressed .

2. If the number of firms in the group is less than 16, the ratios in the 25th and 75th percentile columns of the quartile distribution are suppressed. Only the median ratio is displayed.

3. Firms that have extreme values are filtered out. For example, firms with a liability to assets ratio of greater than 2:1 are excluded.

4. The 'number of firms in the group', shown in the ratio tables relates to the quartile data and therefore is applicable to the following revenue sizes:
   Volume 1: Firms with annual revenue greater than $5 million,
   Volume 2-3: Firms with annual revenue less than $5 million.

Ratio Defaults

If the Quartile 3 and Quartile 1 ratios are extremely high, and thus not meaningful, because the denominator in the ratio formula is very small compared to the numerator, it is suppressed. The symbol used is "...".

Quartile ratios that exceed the following upper limits (lower limits) are defaulted to these limits:

100% for net profit margin,
100% for pretax profit margin,
100% for operating profit margin,
50% for pretax profit to assets,
50% for return on net operating assets,
50% for return on capital employed,
75% for return on equity,

Ratios:

30 for receivable turnover,
50 for inventory turnover,
20 for working capital, (0.05:1 - lower limit),
20 for debt to equity, (0.5:1 - lower limit),
50 for interest coverage,
1.5 for liabilities to assets.

At the firm level, a ratio is not calculated when the number in the denominator of the ratio formula is zero or negative. For example, firms with zero or negative equity and firms with equity that is less than 5% of the total assets, and firms with total assets less than $10,000 are excluded from the return on equity ratio. The portion of firms in a size group having zero or negative equity is displayed at the bottom of the ratio table. In the case of debt to equity ratio, if equity is very small, zero, or negative, the debt to equity ratio is defaulted to 20:1. If debt is zero the debt to equity ratio is defaulted to 0.05:1.

3. COMPLEMENTARY PRODUCTS

3.1 SMALL BUSINESS PROFILES

There is another Statistics Canada product called "Small Business Profiles" (SBP) which is similar in some respects to Financial Performance Indicators for Canadian Business.

The Small Business Profiles present a series of ratios which concentrate more on the cost structure of the various industries (e.g. detailed expenses as a percentage of sales). Some balance sheet ratios are also introduced. This product covers all small businesses, both incorporated and non-incorporated. It provides data by province and territory as well as at the national level.

The following is a list of characteristics and unique features of Small Business Profiles that are not included in Financial Performance Indicators for Canadian Business.

1. Covers both incorporated and non-incorporated businesses with annual sales from $30,000 to $5 million.
2. It contains detailed expense and cost structure data not found in Financial Performance Indicators for Canadian Business.
3. Profiles are available at the 1, 2, 3 and 4-digit SIC-E classification for 1997.

For further information about the Small Business Profiles, please contact the Statistics Canada Reference Center in your region, or Small Business and Special Surveys Division at (613) 951-6684.

3.2 QUARTERLY FINANCIAL STATISTICS FOR ENTERPRISES *(catalogue #61-008XIE)* & ANNUAL FINANCIAL AND TAXATION STATISTICS FOR ENTERPRISES *(catalogue #61-219XIF)*

These Statistics Canada publications contain balance sheets and income statements by industry. The annual publication also contains tables on the reconciliation of book profits to taxable income. For further information please contact the Industrial Organization & Finance Division at (613) 951- 2604.

4. MEASUREMENTS OF PROFITABILITY AND RATES OF RETURN

4.1 PROFIT MARGINS

There are several ways to measure profitability. One group of ratios measures the margin of earnings (profit) on gross sales or gross revenue. These ratios indicate the number of cents left in earnings after payment of certain expenses from every dollar of sales and other revenue. Most private sector enterprises are "for-profit". Their primary objective is to maximize earnings (profit) and returns to the owners' investment. Profit margin ratios are an indication of the efficiency of management in generating profit. This publication calculates four profit margins; gross profit margin, operating profit margin, pretax profit margin and net profit margin.

The income statement contains all revenues, expenses, gains and losses experienced by a firm for a one year period. The residual "net profit" is the excess of all revenues and gains over all expenses and losses. It represents the net earnings available to the shareholders after all expenses, including interest paid to the debt-holders and income taxes paid to governments.

Standard Income Statement Structure *(operating and non-operating accounts classifications)*

All firms have a principal business which indicates their primary industrial activity and industry to which they are classified. For example, businesses may have a primary activity in one of the forestry, mining, manufacturing, wholesale, retail, or services industry groups. The revenues and expenses related to the principal business activities are called "operating revenues and operating expenses". Some firms rely on loans and debt securities to finance their business activities, thus incurring interest expenses on these loans and debt securities. The financing structure between debt and equity capital will vary from firm to firm, so interest expense is not uniform for all firms. This item is classified as a non-

operating expense in the income statement. Firms primarily engaged in non-financial industrial activities may have other incidental revenues and expenses that are classified as non-operating. For example, investment income (dividend and interest revenue) from portfolio investments or investments in unconsolidated subsidiaries and affiliates are classified as non-operating revenue. Gains or losses realized on the disposal of capital assets or investments and unrealized write-downs and write-offs of assets are classified as non-operating gains and losses. These items are non-recurring and not part of the normal business operations. Income tax expense is also classified as a non-operating expense.
A sample income statement format showing the operating and non-operating accounts can be found on page 14.

Gross Profit Margin

This ratio applies to industries that produce goods or purchase goods for resale. Gross profit is the margin between sales revenue and cost of goods sold. Cost of goods sold are also referred to as "direct costs".

Operating Profit Margin

Operating profit is the margin between total operating revenue (sales, etc.) and operating expenses. Operating profit is expressed as a percentage of operating revenue. Operating revenues and operating expenses are revenues and expenses related to the principal business activities of a firm. They exclude interest expense, investment income (dividends and interest revenue), capital gains and losses, unrealized gains and losses and income tax expense.

Pretax Profit Margin

Pretax profit is the margin between total operating and non-operating revenue and all expenses including interest expense, but prior to income tax expense.

Net Profit Margin

Net profit is the margin between total operating and non-operating revenue and all expenses. It is the residual earnings available to the shareholders. It indicates the number of cents from a dollar of operating revenue remaining for the benefit of shareholders after all expenses are accounted for.

INCOME STATEMENT - STANDARD STRUCTURE
for firms classified to non-financial industries

1. Sales of goods and services
2. Other operating revenue (examples: rental revenue, fees , commissions)
3. **TOTAL OPERATING REVENUE**

4. Direct costs (includes cost of goods manufactured and cost of goods purchased for resale)
5. Marketing and selling expense
6. General and administrative expenses
7. Depreciation and amortization expenses
8. **TOTAL OPERATING EXPENSES**

9. **OPERATING PROFIT** (item 3 - item 8)

NON-OPERATING ACCOUNTS
10. Interest expenses
11. Investment income (dividend and interest revenue)
12. Asset write-offs
13. Realized capital gains and losses

14. **PRETAX PROFIT** (item 9 +/- items 10 , 11, 12 and 13)

15. Income tax expense
16. Income or loss of unconsolidated subsidiaries and affiliates

17. **NET PROFIT** (item 14 +/- items 15 and 16)

Formulas:
Gross profit margin = (1-4)/1
Operating profit margin = 9/3
Pretax profit margin = 14/3
Net profit margin = 17/3

4.2 RATES OF RETURN

The second group of profitability ratios are called "rates of return". There are four rates of return presented in this publication; return on net operating assets, pretax profit to assets, return on capital employed and return on equity. These ratios indicate the returns or profits accruing to assets invested and returns to capital financing, both debt and equity financing. To better understand the meaning of these measures and ratio formulas, a sample set of balance sheet accounts are presented below.

Sample Balance Sheet Accounts

ASSETS - *investments*			
assets employed in the firms operations:			
Cash	$3,000		
Accounts receivable	15,000		
Inventory of merchandise for sale	25,000		
Capital assets	35,000		
Other assets(used in the operations)	10,000		
TOTAL OPERATING ASSETS	88,000	$88,000	
Other assets:			
Investments- portfolio investments	7,000		
- subsidiaries & affiliates	5,000		
TOTAL ASSETS	**$100,000**		
LIABILITIES			
CURRENT LIABILITIES (related to operations)			
Accounts payable	30,000		
Other current liabilities	5,000		
	35,000	(35,000)	
NET OPERATING ASSETS (88,000-35,000)		53,000	
NET ASSETS (100,000-35,000) *(equals capital employed)*			$65,000
DEBT CAPITAL			
Loans and debt securities	20,000		
SHAREHOLDERS' EQUITY			
EQUITY CAPITAL	45,000		
CAPITAL EMPLOYED *(debt and equity capital)*			65,000
TOTAL LIABILITIES AND EQUITY	**$100,000**		

Return on net operating assets and return on capital employed

The first rate of return indicates the return to "net operating assets" invested. The denominator excludes investments from the asset base, while the numerator excludes the related investment income from the profit. If the firm only had the assets needed to operate its primary activities (net operating assets), what is the return from these operations? The return is the "operating profit" to the "net operating assets". This ratio is similar to the second ratio, "return on capital employed". The denominators in both ratios are the similar. "Net operating assets" is similar to "net assets" as illustrated in the sample balance sheet accounts set out above. The only difference between the two is the investment asset accounts. "Net assets" are equal to the "capital employed". "Net assets" represent the investment and "capital employed" represents the financing of the assets.

The numerator in the return on capital employed ratio is "net profit before deducting interest expense". The return on capital employed is an all encompassing concept including all revenues and all expenses except interest in the measurement of "net profit". It represents a return to total capital employed before the payment of interest to debtholders and before payment of dividends to shareholders. This ratio shows the return to the total capital, both debt and equity. The rates of return formulas are set out on the next page.

Pretax profit to assets

This ratio indicates the number of "pretax profit" dollars earned per dollar of "total assets". It is a return to total assets invested, including both operating assets and all other assets. Some firms have investments in other enterprises on their balance sheets in addition to operating assets. Total assets include these investment assets.

Return on equity

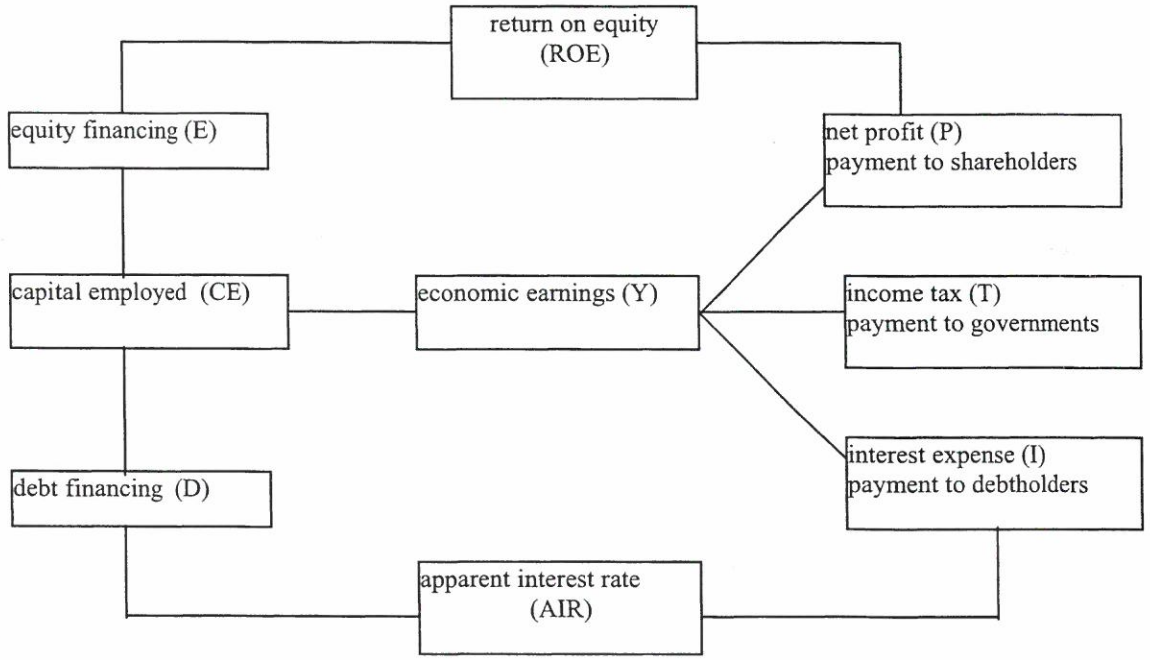
This ratio shows the profits returned to the shareholders which is represented by the equity capital on the balance sheet. The "net profit" after payment of interest to the debtholders represents the earnings that accrue to the shareholders. This ratio tells the number of dollars that are returned to the shareholders for every dollar invested by the shareholders. If the firm is highly leveraged, the return on equity is more volatile than the return on capital employed. It is levered by the debt capital. If the return to total capital employed is higher than the interest rate paid on the debt capital there is positive leverage and the return on equity will be levered higher. The leverage can be negative if the interest rates on debt are higher than the return on total capital employed. In this case returns will be levered lower.

Inter-Industry comparisons of profitability

Most of the profitability ratios are not comparable between industries due to the different nature of business, the different structure of the income statements, and the different balance sheet structures found in each industry. Some industries produce goods or retail goods while others produce services. Some industries are capital intensive while others are labour intensive. These situations yield different profit margins making inter-industry comparisons difficult. Returns on total assets could be different in different industries, but it may not mean one industry is more profitable than another. Some industries such as banks and real estate have much larger amounts of assets related to revenues and net earnings. As a result, returns to total assets may not be comparable.

"Net assets" and "capital employed" are the common denominators amongst the industries. The "return on capital employed" is the best measure of a rate of return for inter-industry comparisons. All firms in all industries have to compete for capital. They must have a certain minimum rate of return to the capital to attract capital investment. In determining which firm to invest in or which industry to invest in, an investor wants to know the comparative rates of return on their investment. The "return on capital employed" comes closest to this concept.

Comparing the rates of return on capital

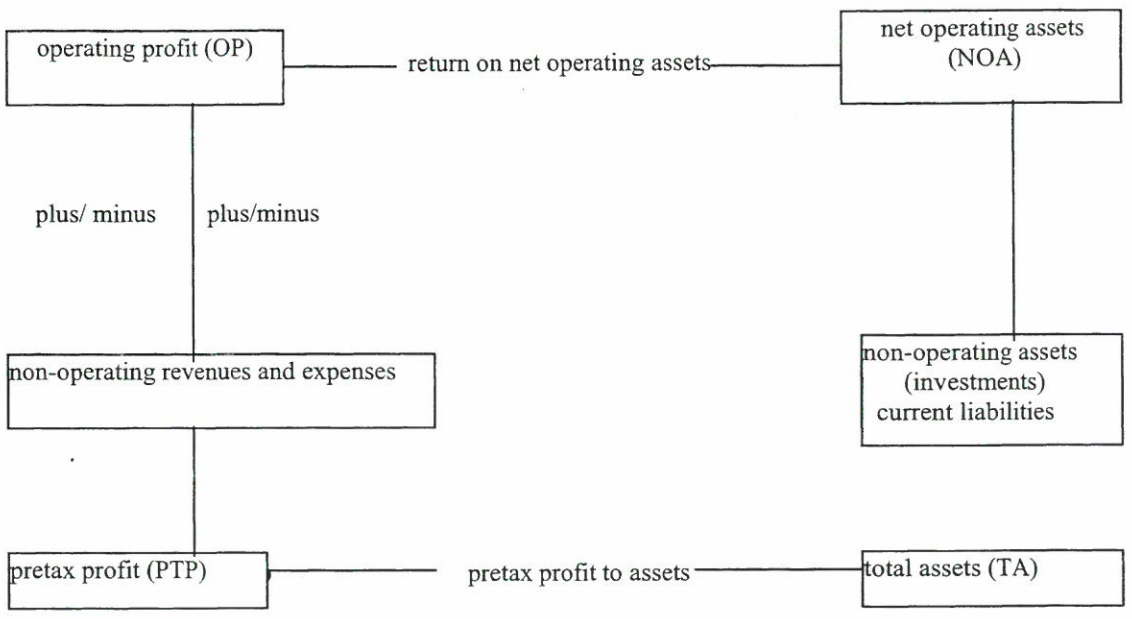


Formulas:

Return on equity (ROE) = P/E

Return on capital employed (ROCE) = (Y-T)/CE = (P+I)/E+D

Comparing rates of return on assets



Formulas:

return on net operating assets = OP/NOA

pretax profit to assets = PTP/TA