

Financial Accounting:

Tools for Business Decision Making, 4th Edition

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CHAPTER 13

FINANCIAL ANALYSIS:

The Big Picture



13-1

Chapter 13

After studying Chapter 13, you should be able to:

- Understand the concept of “CONTINUING” operations and the importance of a multiple-step income statement presentation.
- Explain the concept of comprehensive income.
- Interpret financial statements, including the use of ratio analysis.

13-2

KEEPIN' IT REAL:

A strong analytic includes first developing an expectation.

Also, can we use financial statements to prove/disprove some of the “economics” you are learning?

- How's the economy been doing?
 - What sort of effect do you suppose that may have on financial statements?
 - “Price elasticity” and “law of demand”... how about WalMart? Have a look: <http://sec.gov/cgi-bin/browse-edgar?company=&match=&CIK=wal&filenum=&State=&Country=&SIC=&owner=exclude&Find=Find+Companies&action=getcompany>
 - What economic principle is that?

“Giffen Goods”

13-3

7

Sustainable Income... “CONTINUING OPERATIONS”

REMEMBER: FINANCIAL STATEMENTS TELL WHAT HAPPENED (PAST TENSE) TO USERS WHO WANT TO DEVELOP EXPECTATIONS ABOUT WHAT IS GOING TO HAPPEN. Thus a need for a MULTIPLE STEP INCOME STATEMENT, which:

- Segregates the continuing operations from two principle items which are NOT continuing::
 - Discontinued Pperations and
 - Extraordinary Items

WHY DO POTENTIAL NEW INVESTORS AND CREDITORS CARE ABOUT WHAT ALREADY HAPPENED?
THE PAST IS A STRONG INDICATOR OF THE FUTURE.

13-4

Components of the MULTIPLE STEP Income Statement

Revenue	X	
COGS	Y	
Gross Profit	$x-y=GP$	Typical examples •SG&A Depreciation exp •Rent •Etc.
Operating expenses	A	
Income before taxes	$GP-A=IBT$	
Taxes	$Tax\ rate * IBT = T$	
Inc. from continuing Op's	$ICO = IBT - T$	
Discontinued op's (Net of Tax!)	D	
Extraordinary items (Net of Tax!)	E	
Net Income	$ICO + -D + -E$	

13-5

2

Irregular Items

Two types of irregular items are reported -- (all net of taxes)

- discontinued operations
- extraordinary items

13-6

Discontinued Operations...

Refers to the disposal of a significant segment of a business...

- the elimination of a major class of customers or
- an entire activity.

13-7

Discontinued Operations

Rozek net income of \$800,000 from continuing operations in 2007.

During 2007 the company discontinued and sold its unprofitable chemical division. The loss in 2007 from chemical operations (net of \$90,000 taxes) was \$210,000. The tax rate is 30%.

ROZEK INC. Income Statement (partial) For the Year Ended December 31, 2007	
Income before income taxes	\$ 800,000
Income tax expense	<u>240,000</u>
Income before irregular items	560,000
Discontinued operations	
Loss from disposal of chemical division, net of \$90,000 income tax savings	<u>(210,000)</u>
Net income	<u>\$ 350,000</u>

13-8

Extraordinary Items...

Are events and transactions that meet two conditions:

- Unusual in nature
- Infrequent in occurrence

HELP FROM BOB: (1) Has not happened before
(2) is not expected to happen again.



Extraordinary Items

- In 2007 a revolutionary foreign government expropriated property held as an investment by Rozek Inc.
- The loss is \$70,000 before applicable income taxes of \$21,000, the income statement presentation will show a deduction of \$49,000.

13-10

Presentation of Extraordinary Items...

ROZEK INC. Income Statement (partial) For the Year Ended December 31, 2007	
Income before income taxes	\$ 800,000
Income tax expense	<u>240,000</u>
Income before irregular items	560,000
Discontinued operations: Loss from disposal of chemical division, net of \$90,000 income tax savings	(210,000)
Extraordinary item: Expropriation of investment, net of \$21,000 income tax savings	<u>(49,000)</u>
Net income	<u>\$ 301,000</u>

13-11

Extraordinary Items

Extraordinary items	Ordinary items
1. Effects of major natural casualties, if rare in the area.	1. Effects of major natural casualties, not uncommon in the area.
2. Expropriation (takeover) of property by a foreign government.	2. Write-down of inventories or write-off of receivables.
3. Effects of a newly enacted law or regulation, such as a condemnation action.	3. Losses attributable to labor strikes.
	4. Gains or losses from sales of property, plant, or equipment.

3-12

Estimating Sustainable Income

When evaluating a company, it generally makes sense to eliminate all irregular items in estimating future sustainable income.

13-13

Change in Accounting Principle

- I DON'T COVER, EVEN THOUGH IT IS IN YOUR TEXT.

13-14

Comprehensive Income

- **Most revenues, expenses, gains, and losses recognized during the period are included in net income.**
- **Specific exceptions to this practice have developed - these items bypass income and are reported directly in stockholders' equity as "other comprehensive income" (aka OCI).**

13-15

Comprehensive Income

- **The FASB now requires that, in addition to reporting net income, a company must also report comprehensive income.**

13-16

3

Comprehensive Income

Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders.

EASIER TO UNDERSTAND:

Comprehensive income = Net Income + Other Comprehensive Income.

13-17

Complete Income Statement

PACE CORPORATION	
Income Statement and Statement of Comprehensive Income For the Year Ended December 31, 2007	
Net sales	\$440,000
Cost of goods sold	260,000
Gross profit	180,000
Operating expenses	110,000
Income from operations	70,000
Other revenues and gains	\$ 5,600
Other expenses and losses	(9,600)
Income before income taxes	66,000
Income tax expense (\$66,000 × 30%)	19,800
Income before irregular items	46,200
Discontinued operations: Gain on disposal of Plastics Division, net of \$15,000 income taxes (\$50,000 × 30%)	35,000
Extraordinary item: Tornado loss, net of income tax savings \$18,000 (\$60,000 × 30%)	(42,000)
Net income	39,200
Add: Unrealized gain on available-for-sale securities	10,000
Comprehensive income	\$ 49,200

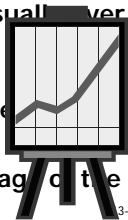
Other
Comprehensive
Income
(aka "OCI")

13-18

Comparative Analysis

There are three types of comparisons to improve decision usefulness of financial information:

- **Intracompany basis:**
 - Compare a company to itself (usually over time)
- **Intercompany basis**
 - Compare a company to its competitors
- **Industry averages**
 - Compare a company to the average of the companies in its industry



13-19

Financial Statement Analysis

Three basic tools are used in financial statement analysis :

1. **Horizontal analysis**
 - Comparison over time
 - Expressed as a % of a base year
2. **Vertical analysis**
 - Relational analysis within a statement
 - Expressed as a % of:
 - Assets if analyzing the balance sheet;
 - Revenues if analyzing the income statement;
3. **Ratio analysis**
 - Relational analysis among statements;
 - Allows comparing various sized entities to one another ("right sizing")



13-20

Horizontal Analysis

$$\text{Change Since Base Period} = \frac{\text{Current-Year Amount} - \text{Base-Year Amount}}{\text{Base-Year Amount}}$$

$$\text{Current Results in Relation to Base Period} = \frac{\text{Current-Year Amount}}{\text{Base-Year Amount}}$$

KELLOGG COMPANY Net Sales (in millions) Base Period 1997

2004	2003	2002	2001	2000
\$9,613.9	\$8,811.5	\$8,304.1	\$7,548.4	\$6,086.7
157.95%	144.77%	136.43%	124.01%	100%

13-23

Horizontal Analysis- Balance Sheet



KELLOGG COMPANY, INC. Condensed Balance Sheets December 31 (in millions)

Assets	2004	2003	Increase (Decrease) during 2004	
			Amount	Percent
Current assets	\$ 2,121.8	\$ 1,787.9	\$333.9	18.7
Property assets (net)	2,715.1	2,780.2	(65.1)	(2.3)
Other assets	5,953.5	5,574.6	378.9	6.8
Total assets	\$10,790.4	\$10,142.7	\$647.7	6.4
Liabilities and Stockholders' Equity				
Current liabilities	\$ 2,846.0	\$ 2,766.0	\$ 80.0	2.9
Long-term liabilities	5,687.2	5,933.5	(246.3)	(4.2)
Total liabilities	8,533.2	8,699.5	(166.3)	(1.9)
Stockholders' equity				
Common stock	103.8	128.3	(24.5)	(19.1)
Retained earnings	2,261.4	1,518.5	742.9	48.9
Treasury stock (cost)	(108.0)	(203.6)	(95.6)	47.0
Total stockholders' equity	2,257.2	1,443.2	814.0	56.4
Total liabilities and stockholders' equity	\$10,790.4	\$10,142.7	\$647.7	6.4

13-22

Horizontal Analysis – Income Statement



KELLOGG COMPANY, INC. Condensed Income Statements For the Years Ended December 31 (in millions)

	2004	2003	Increase (Decrease) during 2004	
			Amount	Percent
Net sales	\$9,613.9	\$8,811.5	\$802.4	9.1
Cost of goods sold	5,298.7	4,898.9	399.8	8.2
Gross profit	4,315.2	3,912.6	402.6	10.3
Selling and administrative expenses	2,634.1	2,368.5	265.6	11.2
Income from operations	1,681.1	1,544.1	137.0	8.9
Interest expense	308.6	371.4	(62.8)	(16.9)
Other income (expense), net	(6.6)	(3.2)	3.4	106.3
Income before income taxes	1,365.9	1,169.5	196.4	16.8
Income tax expense	475.3	382.4	92.9	24.3
Net income	\$ 890.6	\$ 787.1	\$103.5	13.1

13-23

Review

In horizontal analysis, each item is expressed as a percentage of the:

- net income amount.
- stockholders' equity amount.
- total assets amount.
- base-year amount.

13-24

Review

In horizontal analysis, each item is expressed as a percentage of the:

- net income amount.
- stockholders' equity amount.
- total assets amount.
- base-year amount.

13-25

Vertical Analysis - Balance Sheet

	2004		2003	
	Amount	Percent*	Amount	Percent*
Assets				
Current assets	\$ 2,121.8	19.7	\$ 1,787.9	17.6
Property assets (net)	2,715.1	25.1	2,790.2	27.4
Other assets	5,953.5	55.2	5,574.6	55.0
Total assets	\$10,790.4	100.0	\$10,142.7	100.0
Liabilities and Stockholders' Equity				
Current liabilities	\$ 2,846.0	26.4	\$ 2,766.0	27.3
Long-term liabilities	5,687.2	52.7	5,933.5	58.5
Total liabilities	8,533.2	79.1	8,699.5	85.8
Stockholders' equity				
Common stock	103.8	1.0	128.3	1.2
Retained earnings	2,261.4	20.9	1,518.5	15.0
Treasury stock (cost)	(108.0)	(1.0)	(203.6)	(2.0)
Total stockholders' equity	2,257.2	20.9	1,443.2	14.2
Total liabilities and stockholders' equity	\$10,790.4	100.0	\$10,142.7	100.0

*Numbers have been rounded to total 100%.

13-26

Intercompany Comparison by Vertical Analysis

	Kellogg Company, Inc.		General Mills, Inc.	
	Amount	Percent*	Amount	Percent*
Net sales	\$9,613.9	100.0	\$11,070.0	100.0
Cost of goods sold	5,298.7	55.1	6,584.0	59.5
Gross profit	4,315.2	44.9	4,486.0	40.5
Selling and administrative expenses	2,634.1	27.4	2,443.0	22.1
Nonrecurring charges	0.0	—	26.0	.2
Income from operations	1,681.1	17.5	2,017.0	18.2
Other expenses and revenues (including income taxes)	790.5	8.2	962.0	8.7
Net income	\$ 890.6	9.3	\$ 1,055.0	9.5

*Numbers have been rounded to total 100%.

13-27

Review

In vertical analysis, the base amount for depreciation expense is generally:

- net sales.
- depreciation expense in a previous year.
- gross profit.
- fixed assets.

13-28

Review

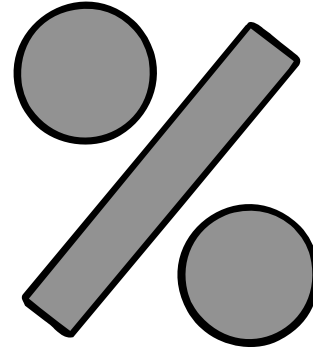
In vertical analysis, the base amount for depreciation expense is generally:

- a. net sales.
- b. depreciation expense in a previous year.
- c. gross profit.
- d. fixed assets.

13-29

6

Ratio Analysis



13-30

Ratios

- **Three types:**
 - Liquidity ratios
 - Solvency ratios
 - Profitability ratios
- Can provide clues to underlying conditions that may not be apparent from an inspection of the individual components.
- Single ratio by itself is not very meaningful.



13-31

Liquidity Ratios

Measure the short-term ability of the enterprise to pay its maturing obligations and to meet unexpected needs for cash.

WHO CARES?

Short-term creditors such as bankers and suppliers



13-32

Liquidity Ratios

Liquidity Ratios	
Working capital	Current assets – Current liabilities
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$
<hr/>	
Inventory turnover ratio	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$
Days in inventory	$\frac{365 \text{ days}}{\text{Inventory turnover ratio}}$
Receivables turnover ratio	$\frac{\text{Net credit sales}}{\text{Average net receivables}}$
Average collection period	$\frac{365 \text{ days}}{\text{Receivables turnover ratio}}$

13-33

Solvency Ratios

Measure the ability of the enterprise to survive over a long period of time

WHO CARES?

Long-term creditors and stockholders- particularly with respect to ability to make principle and interest payments.



13-34

Solvency Ratios

Solvency Ratios	
Debt to total assets ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$
<hr/>	
Times interest earned ratio	$\frac{\text{Net income} + \text{Interest expense} + \text{Tax expense}}{\text{Interest expense}}$
Free cash flow	Cash provided by operations – Capital expenditures – Cash dividends

13-35

Profitability Ratios

Measure the income or operating success of an enterprise for a given period of time

WHO CARES? Everybody

WHY? A company's income affects:

- its ability to obtain debt and equity financing
- its liquidity position
- its ability to grow

13-36

PER SHARE

Why does it make sense to convert items on the statements to "per share" amounts?

Unless you own all the stock of a company, you would like to see activity converted to the basis at which you made your purchase

What about a lender, would they be interested in net income per share or net income?

13-37

Profitability Ratios

Profitability Ratios	
Earnings per share	$\frac{\text{Net income} - \text{Preferred stock dividends}}{\text{Average common shares outstanding}}$
Price-earnings ratio	$\frac{\text{Stock price per share}}{\text{Earnings per share}}$
Gross profit rate	$\frac{\text{Gross profit}}{\text{Net sales}}$
Profit margin ratio	$\frac{\text{Net income}}{\text{Net sales}}$
Return on assets ratio	$\frac{\text{Net income}}{\text{Average total assets}}$
Asset turnover ratio	$\frac{\text{Net sales}}{\text{Average total assets}}$
Return on common stockholders' equity ratio	$\frac{\text{Net income} - \text{Preferred stock dividends}}{\text{Average common stockholders' equity}}$

13-38

Price Earnings Ratio

$$\text{Price-Earnings (P-E) Ratio} = \frac{\text{Stock Price per Share}}{\text{Earnings per Share}}$$

The P/E ratio reflects the investors' assessment of a company's future earnings.

13-39

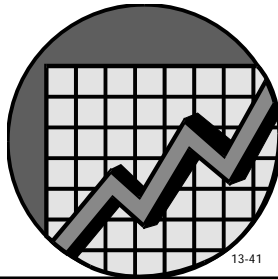
Earnings Per Share and Price Earnings Ratio

Company	Earnings Per Share	Price-Earnings Ratio
Kellogg Company	\$ 2.22	20.5
Google Inc.	3.41	86.6
United States Steel	11.4	3.9
eBay Inc.	0.68	62.4
Nike	19.5	4.31

13-40

Limitations Of Financial Analysis

- Horizontal, vertical, and ratio analysis are frequently used in making significant business decisions.
- One should be aware of the limitations of these tools and the financial statements.



Estimates

- **Financial statements are based on estimates.**

- allowance for uncollectible accounts
- depreciation
- costs of warranties
- contingent losses

To the extent that these estimates are inaccurate, the financial ratios and percentages are also inaccurate.

13-42

7

Quality of Earnings

A company that has a high quality of earnings provides full and transparent information that will not confuse or mislead users of the financial statements.

13-43

Pro Forma Income

A measure of the net income generated that usually excludes items that the company thinks are unusual or nonrecurring.

13-44

Improper Recognition

- Offering big discounts (channel stuffing) to companies to get them to buy early- Often leads to disaster in subsequent periods.
- Improper capitalization of operating expenses

13-45

LAST BUT CERTAINLY NOT LEAST

Financial statements display what happened (past tense)

- Will the past always repeat itself?

13-46