

# TABLE OF CONTENTS

## SOLUTIONS MANUAL

Chapter 1	Introduction to Financial Reporting . . . . .	1
Chapter 2	Introduction to Financial Statements and Other Financial Reporting Topics. . . . .	20
Chapter 3	Balance Sheet . . . . .	41
Chapter 4	Income Statement. . . . .	68
Chapter 5	Basics of Analysis. . . . .	88
Chapter 6	Liquidity of Short-term Assets; Related Debt-Paying Ability	107
Chapter 7	Long-Term Debt-Paying Ability . . . . .	160
Chapter 8	Profitability . . . . .	187
Chapter 9	For the Investor. . . . .	234
Chapter 10	Statement of Cash Flows . . . . .	260
Chapter 11	Expanded Analysis . . . . .	299
Chapter 12	Special Industries: Banks, Utilities, Oil and Gas, Transportation, Insurance, Real Estate Companies. . . . .	340
Chapter 13	Personal Financial Statements and Accounting for Governments and Not-For-Profit Organizations. . . . .	366



The Islamia University Of Bahawalpur, Pakistan

[www.iub.edu.pk](http://www.iub.edu.pk)

**Chapter 1**  
**Introduction to Financial Reporting**

**TO THE NET**

1. a. **he Mission of the Financial Accounting Standard Board**  
**(In Part)**

The mission of the Financial Accounting Standards Board (FASB) is to establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors and users of financial information.

Accounting standards are essential to the efficient functioning of the economy because decisions about the allocation of resources rely heavily on credible, concise, transparent and understandable financial information. Financial information about the operations and financial position of individual entities also is used by the public in making various other kinds of decisions.

To accomplish its mission, the FASB acts to:

- Improve the usefulness of financial reporting by focusing on the primary characteristics of relevance and reliability and on the qualities of comparability and constancy;
- Keep standards current to reflect changes in methods of doing business and changes in the economic environment;
- Consider promptly any significant areas of deficiency in financial reporting that

might be improved through the standard-setting process;

- Promote the international convergence of accounting standards concurrent with improving the quality of financial reporting; and
- Improve the common understanding of the nature and purposes of information contained in financial reports.

b **Financial Accounting Standards Advisory Council**

**An Overview**

The Financial Accounting Standards Advisory Council, FASAC or "the Council" for short, was formed in 1973 concurrent with the establishment of the Financial Accounting Standards Board (the FASB or the Board).

The primary function of FASAC is to advise the Board on issues related to projects on the Board's agenda, possible new agenda items, project priorities, procedural matters that may require the attention of the FASB, and other matters as requested by the chairman of the FASB. FASAC meetings provide the Board with an opportunity to obtain and discuss the views of a very diverse group of individuals from varied business and professional backgrounds.

The members of FASAC are drawn from the ranks of CEOs, CFOs, senior partners of public accounting firms, executive directors of professional organizations, and senior members of the academic and analyst communities, all disclosure.

**Carrying Out the Mission**

It is the job of the FASB to establish the "generally accepted accounting principles," or GAAP, to which public financial reporting by U.S. corporations must conform and to keep those principles current.

In conducting its activities, the Board strives to carefully weight the views of its users, preparers, and auditors of financial report. The Council provides an important sounding board to help the FASB understand what constituents are thinking about a wide range of issues.

FASAC's role is *not* to reach a consensus or to vote on the issues that it considers at its meetings. Rather, FASAC operates as a window through which the Board can obtain and discuss the representative views of the diverse groups the FASB affects. Thus, FASAC provides the forum for two-way communication. While it is important to convene the Council members as a group, that is so that the Board can hear the individual views of those members and so that the members can hear and respond to each other's views.

Members of FASAC are urged to speak out publicly on matters before the FASB and also to be supportive of the Board's process, and the principle of private-sector standard setting. Individual Council members are not expected to agree with the Board's decisions on all of the technical aspects of the projects on the Board's agenda, but it is important that FASAC members support the institution and its due process.

#### **Structure of the Organization**

FASAC is an operating arm of the financial Accounting Foundation, an organization that is independent of any other business or professional organization. The Foundation is run by a 16-member Board of Trustees who are leaders in the business, accounting, financial, government and academic communities.

The Foundation selects the members of FASAC including the chairman and broadly oversees its operations. The Council comprises 33 members who represent a broad cross section of the Board's constituency. They are appointed for a one-year term are eligible to be reappointed for three additional one-year terms.

#### **The Process**

The Council meets once a quarter at the FASB's offices in Norwalk, Ct. Like the FASB, FASAC is committed to following an open, orderly process that is open to public observation. In addition to the Council members, the members of the FASB, its director of research and technical activities, several members of the FASB's staff, and the chief accountant of the SEC attend each meeting.

2. Each student will select a company and obtain a copy of their annual report, 10-K, and proxy.



## QUESTIONS

- 1- 1. a. The AICPA is an organization of CPAs that prior to 1973 accepted the primary responsibility for the development of generally accepted accounting principles. Their role was substantially reduced in 1973 when the Financial Accounting Standards Board was established. Their role was further reduced with the establishment of the Public Company Accounting Oversight Board was established in 2002.
- b. The Financial Accounting Standards Board replaced the Accounting Principles Board as the primary rule-making body. It is an independent organization and includes members other than public accountants.
- c. The SEC has the authority to determine generally accepted accounting principles and to regulate the accounting profession. The SEC has elected to leave much of the determination of generally accepted accounting principles to the private sector. For accounting standards the Financial Accounting Standards Board has played the major role since 1973. Regulation of the accounting profession was substantially turned over to the Public Company Accounting Oversight Board in 2002.
- 1- 2. Consistency allows for the same accounting principle from period to period. A change in principle requires statement disclosure.
- 1- 3. The concept of historical cost determines the balance sheet valuation of land. The realization concept requires that a transaction has occurred for the profit to be recognized.
- 1- 4. a. Entity  
b. Realization  
c. Materiality  
d. Conservatism  
e. Historical cost  
f. Historical cost  
g. Disclosure
- 1- 5. Entity concept

- 1- 6. Generally accepted accounting principles do not apply when a firm does not appear to be a going concern. In this case the liquidation values are the appropriate figures.
- 1- 7. With the time period assumption, inaccuracies of accounting for the entity, short of its complete life span, are accepted. The assumption is made that the entity can be accounted for reasonably accurately for a particular period of time. In other words, the decision is made to accept some inaccuracy because of incomplete information about the future in exchange for more timely reporting. The statements are considered to be meaningful because material inaccuracies are not acceptable.
- 1- 8. It is true that the only accurate way to account for the success or failure of an entity is to accumulate all transactions from the opening of business until the business eventually liquidates. But it is not necessary that the statements be completely accurate in order for them to be meaningful.
- 1- 9. a. Natural business year
- A year that ends when operations are at a low ebb for the year.
- b. Calendar year
- The accounting time period is ended on December 31.
- c. Fiscal year
- A twelve-month accounting period that ends at the end of a month other than December 31.
- 1-10. Money.
- 1-11. When money does not hold a stable value, the financial statements can lose much of their significance. To the extent that money does not remain stable, it loses usefulness as the standard for measuring financial transactions.
- 1-12. No.
- There is a problem with determining the index in order to adjust the statements. The items that are included in

the index must be representative and the price of items change because of various factors, such as quality, technology, and inflation.

Yes. A reasonable adjustment to the statements can be made for inflation.



1-13. False.

An arbitrary write-off of inventory cannot be justified under the conservatism concept. The conservatism concept can only be applied where there are alternative measurements and each of these alternative measurements has reasonable support.

1-14. Yes, inventory that has a market value below the historical cost should be written down in order to recognize a loss. This is done based upon the concept of conservatism. Losses that can be reasonably anticipated should be taken in order to reflect the least favorable effect on net income of the current period.

1-15. End of production

The realization of revenue at the completion of the production process is acceptable when the price of the item is known and there is a ready market.

Receipt of cash

This method should only be used when the prospects of collection are especially doubtful at the time of sale.

During production

This method is allowed for long-term construction projects because recognizing revenue on long-term construction projects as work progresses tends to give a fairer picture of the results for a given period in comparison with having the entire revenue realized in one period of time from a project.

1-16. It is difficult to apply the matching concept when there is no direct connection between the cost and revenue. Under these circumstances, accountants often charge off the cost in the period incurred in order to be conservative.

1-17. If the entity can justify the use of an alternative accounting method on the basis that it is preferable, then the change can be made.

1-18. The accounting reports must disclose all facts that may influence the judgment of an informed reader. Usually this is a judgment decision for the accountant to make. Because of the complexity of many businesses and the

increased expectations of the public, the full disclosure concept has become one of the most difficult concepts for the accountant to apply.

- 1-19. There is a preference for the use of objectivity in the preparation of financial statements, but financial statements cannot be completely prepared based upon objective data; estimates must be made in many situations.
- 1-20. This is a true statement. The concepts of materiality allow the accountant to handle immaterial items in the most economical and expedient manner possible.
- 1-21. Some industry practices lead to accounting reports that do not conform to generally accepted accounting principles. These reports are considered to be acceptable, but the accounting profession is making an effort to eliminate particular industry practices that do not conform to the normal generally accepted accounting principles.
- 1-22. Events that fall outside of the financial transactions of the entity are not recorded. An example would be the loss of a major customer.
- 1-23. True. The accounting profession is making an effort to reduce or eliminate specific industry practices.
- 1-24. The entity must usually use the accrual basis of accounting. Only under limited circumstances can the entity use the cash basis.
- 1-25. There is no one source or list of accounting principles that has substantial authoritative support; therefore, the accountant must be familiar with acceptable sources to refer to in order to decide whether any particular accounting principle has substantial authoritative support. The ultimate responsibility is with the accountant to prove that generally acceptable accounting principles have been followed.
- 1-26. The separate entity concept directs that personal transactions of the owners not be recorded on the books of the entity.
- 1-27. At the point of sale.
- 1-28. a. The building should be recorded at cost, which is \$50,000.

- b. Revenue should not be recorded for the savings between the cost of \$50,000 and the bid of \$60,000. Revenue comes from selling, not from purchasing.

- 1-29. The materiality concept supports this policy.
- 1-30. The Securities and Exchange Commission (SEC).
- 1-31. The basic problem with the monetary assumption when there has been significant inflation is that the monetary assumption assumes a stable dollar in terms of purchasing power. When there has been inflation, the dollar has not been stable in terms of purchasing power and, therefore, dollars are being compared that are not of the same purchasing power.
- 1-32. The matching principle deals with the costs to be matched against revenue. The realization concept has to do with the determination of revenue. The combination of revenue and costs determine income.
- 1-33. The term "generally accepted accounting principles" is used to refer to accounting principles that have substantial authoritative support.
- 1-34. The process of considering a Statement of Financial Accounting Standards begins when the Board elects to add a topic to its technical agenda. The Board only considers topics that are "broke" for its technical agenda.

On projects with a broad impact, a Discussion Memorandum or an Invitation to Comment is issued. The Discussion Memorandum or Invitation to Comment is distributed as a basis for public comment. After considering the written comments and the public hearing comments, the Board resumes deliberations in one or more public Board meetings. The final Statement on Financial Accounting Standards must receive a majority affirmative vote of the Board.

- 1-35. The FASB Conceptual Framework for Accounting and Reporting is intended to set forth a system of interrelated objectives and underlying concepts that will serve as the basis for evaluating existing standards of financial accounting and reporting.
- 1-36. a. Committee on Accounting Procedures:

A committee of the AICPA that played an important role in the determination of generally accepted accounting principles in the United States between 1939 and 1959.

b. Committee on Accounting Terminology:

A committee of the AICPA that played an important role in the defining of accounting terminology between 1939 and 1959.

c. Accounting Principles Board:

An AICPA board that played a leading role in the development of generally accepted accounting principles in the United States between 1959 and 1973.

d. Financial Accounting Standards Board:

The Board that has played the leading role in the development of generally accepted accounting principles in the United States since 1973.

1-37. Concepts Statement No. 1 indicates that the objectives of general-purpose external financial reporting are primarily for the needs of external users who lack the authority to prescribe the information they want and must rely on information management communicates to them.

1-38. Financial accounting is not designed to measure directly the value of a business enterprise. Concepts Statement No. 1 indicates that financial accounting is not designed to measure directly the value of a business enterprise, but the information it provides may be helpful to those who wish to estimate its value.

1-39. According to Concepts Statement No. 2, to be relevant, information must be timely and it must have predictive value or feedback value or both. To be reliable, information must have representational faithfulness and it must be verifiable and neutral.

1-40. 1. Definition

2. Measurability

3. Relevance

4. Reliability

1-41. 1. Historical cost

2. Current cost

3. Current market value

4. Net realizable value

5. Present value

- 1-42. The accrual basis income statement recognizes revenue when it is realized (realization concept) and expenses recognized when they are incurred (matching concept). The cash basis recognizes revenue when the cash is received and expenses when payments are made.
- 1-43. True. Usually the cash basis does not indicate when the revenue was earned and when the cost should be recognized. The cash basis recognizes cash receipts as revenue and cash payments as expenses.
- 1-44. When cash is received and when payment is made is important. For example, the timing of cash receipts and cash payments can have a bearing on a company's ability to pay bills on time.

## PROBLEMS

### PROBLEM 1-1

1.   b        3.   b        5.   d        7.   e        9.   g    
2.   a        4.   c        6.   i        8.   f

### PROBLEM 1-2

1.   o        6.   e        11.   h    
2.   a        7.   f        12.   k    
3.   b        8.   j        13.   c    
4.   l        9.   i        14.   m    
5.   d        10.   g        15.   n

### PROBLEM 1-3

- a.   2        Typically, much judgment and estimates go into the preparation of financial statements.
- b.   4        Financial accounting is not designed to measure directly the value of a business enterprise. The end result statements can be used as part of the data to aid in estimating the value of the business.
- c.   4        FASB Statement of Concepts No. 2 lists timeliness, predictive value, and feedback value as ingredients of the quality of relevance.
- d.   2        The Securities and Exchange Commission has the primary right and responsibility for generally accepted accounting principles. They have primarily elected to have the private sector develop generally accepted accounting principles and have designated the Financial Accounting Standards Board as the primary source.
- e.   4        The concept of conservatism directs that the measurement with the least favorable effect on net income and financial position in the current period be selected.
- f.   3        The Internal Revenue Service deals with Federal tax law, not generally accepted accounting principles.

g. 5 Opinions were issued by The Accounting Principles Board.



PROBLEM 1-4

- a.   1              Statements of Position have been issued by the AICPA.
- b.   2              This is the definition contained in SFAC No. 6
- c.   2              This is the definition contained in SFAC No. 6.
- d.   5              Comparability is not one of the criteria for an item to be recognized.
- e.   2              Future cost is not one of the measurement attributes recognized in SFAC No. 5.
- f.   1              Revenue is usually recognized at point of sale.
- g.   1              Financial accounting is not designed to measure directly the value of a business enterprise.

PROBLEM 1-5

a.	Sales on credit	\$ 80,000
	Cost of inventory sold on credit	<65,000>
	Payment to sales clerk	<u>&lt;10,000&gt;</u>
	Income	<u>\$ 5,000</u>
b.	Collections from customers	\$ 60,000
	Payment for purchases	<55,000>
	Payment to sales clerk	<u>&lt;10,000&gt;</u>
	Loss	<u>\$&lt; 5,000&gt;</u>

## CASES

### CASE 1-1 STANDARDS OVERLOAD?

(As more financial accounting standards were issued, a charge of standards overload emerged. This issue took many forms, including the issue of different accounting standards for nonpublic companies than for public companies. Another form of this issue was whether different accounting standards should apply to small vs. large companies.)

Note: The standards overload issue has been reviewed extensively in the literature since approximately 1980.

Excellent material for reviewing the standards overload issue are:

1. Mosso, David "Standards Overload - No Simple Solution," Journal of Accountancy, November 1983, pg. 120-122.
2. News Report "Standards overload relief requires top priority, says AICPA Committee report," Journal of Accountancy, May, 1983, pg. 18-22.
3. Abdel-halik, Rashad "Financial Reporting by Private Companies: Diagnosis and Analysis," Management Accounting, October, 1983, pg. 80-81. (The entire study was published by the Financial Accounting Standards Board.)

A. This is an opinion question:

The Financial Accounting Standards Board published a report entitled "Financial Reporting by Private Companies: Diagnosis and Analysis".

This research report supports that GAAP financial statements for private companies are perceived to benefit managers and bankers. Managers and bankers tend to find a single set of GAAP financial statements to be useful.

B. The research report, "Financial Reporting by Private Companies: Diagnosis and Analysis," indicates that there is a reasonable amount of support by CPAs for a distinction in GAAP between public and nonpublic companies. This support from the CPAs may be because of billing problems with the nonpublic companies, which would tend to be smaller companies. It could also be that the smaller CPA firms work extensively with nonpublic companies. The smaller CPA

firms would tend to have more problems than the big CPA firms in keeping up with changing standards.

- C. Most small business owner-managers would likely object to continually increased reporting requirements. They see them as increased costs without improved benefits, since their user groups tend to be confined to owners and bankers.

Although most small business owner-managers would prefer to have fewer standards, they do not favor a distinction between financial reporting standards for small and large companies. They do not want their statements to be viewed as inferior.

- D. CPAs in a small CPA firm are likely to view standards overload as a bigger problem than do CPAs in a large CPA firm. Likely reasons for this are the problems of keeping up with GAAP, lack of specialization in a small firm, and small CPA firms work more with small businesses. Therefore, they are more likely to experience fee resistance than are large firms.
- E. Standards overload does not appear to be a major problem from the viewpoint of the objectives of financial reporting. Providing information useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions may require many standards and somewhat complicated standards.\_

#### CASE 1-2 STANDARD-SETTING: "A POLITICAL ASPECT"

- A. The hierarchy of accounting qualities in SFAC No. 2 includes neutrality as one of the ingredients. SFAC indicates that, to be reliable, the information must be verifiable, subject to representational faithfulness, and neutral.

To quote from the Beresford letter: "If financial statements are to be useful, they must report economic activity without coloring the message to influence behavior in a particular direction."

- B. Costs of transactions do exist whether or not the FASB mandates their recognition in financial statements. The markets may not be able to recognize these costs in the short run if they are not reported. Thus investors, creditors, regulators, and other users of financial reports may not be able to make reasonable business and economic decisions if the costs are not reported.

C. Much of the standard setting in the U.S. is in the private sector. A major role in the private sector has been played by The American Institute of Certified Public Accountants. Since 1973 the primary role in the private sector has been played by The Financial Accounting Standards Board.

It should be noted that the Securities Act of 1934 gave the SEC the authority to determine generally accepted accounting principles and to regulate the accounting profession. The Beresford letter recognizes that the SEC and congressional committees maintain an active oversight of the FASB.

D. True. Quoting from the letter: "We expect that changes in financial reporting will have economic consequences, just as economic consequences are inherent in existing financial reporting practices."

CASE 1-3 STANDARD-SETTING: "BY THE WAY OF THE UNITED STATES CONGRESS"

A. This is an opinion question. It is the opinion of the author that the United States Congress is not well qualified to debate and set generally accepted accounting principles. Very few in the United States Congress have a financial or accounting background.

B. Under the Securities Act of 1934, the Securities and Exchange Commission (SEC) was created. In effect, the SEC was given the authority to determine generally accepted accounting principles and to regulate the accounting profession.

With these bills the Senate and the House are going around the SEC in determining the generally accepted accounting principles for stock option compensation.

CASE 1-4 RECOGNIZING REVENUE AND RELATED COSTS - CONSIDER THESE SITUATIONS (PART I)

A. The Boeing Company

a. Sales and other Operating Revenues

Revenue recognition is reasonable. It appears to be conservative to wait until deliveries are made.

b. Contract and Program Accounting

A revision of sales downward would result in revision of profits downward. The average total contract cost would increase and the revenue would decrease.

B. General Motors Corporation

a. Sales Allowances

Sales allowances would be reduced if sales are less than expected from a sales allowance program. At the time of adjustment income will be increased.

b. Policy and Warranty

Income will increase as the reserve is reduced.

C. Sun Hydraulics Corporation

No, a type of point of sale is used waiting until the product is shipped.

D. Scientific Technologies

a. They are using a type of point of sale and recognizing revenue at time of shipment.

b. Recognition is made when services are rendered. For relative long term contracts a during production method is used recognizing revenue as an identifiable portion of the contract is completed.

CASE 1-5 RECOGNIZING REVENUES AND RELATED COSTS - PART II

A. Harris Interactive Inc.

A during production percentage of completion method is used.

B. Ethan Allen Interiors Inc.

The dealers are independent companies accepting title to the inventory when the goods are shipped. Ethan Allen owned stores are part of the company Ethan Allen Interiors. For these stores title does not change until delivery is made to the customer.

C. Alexander and Baldwin, Inc.

a. Voyage Revenue Recognition are included in income at the time voyage leg commences. They must be confident that reasonable estimates can be made at the time voyage leg commences.

- b. Real Estate Sales Revenue Recognition is made when Alexander and Baldwin is confident that the buyer has the ability to pay.
- D. Orphan Medical Inc.

Estimates

Reserves for estimated returns of expired product and discounts. (The Company is obligated to accept from all domestic customers the return of products that have reached their expiration date.)

CASE 1-6 CASH BASIS - ACCRUAL BASIS?

- A. Cash basis
- B. Accrual basis
- c. To conform to Statement of Financial Accounting Standard No. 106.
- D. A company on the accrual basis could report an item on the cash basis if the effect of the item on the statements was immaterial. This could also happen if an accounting standard allowed or required the item to be reported on the cash basis.

CASH 1-7 GOING CONCERN?

- A. The going-concern assumption is that the entity in question will remain in business for an indefinite period of time.
- B. Yes.

The potential problem is that the firm may not be able to continue in business as a going concern. This puts into question the recoverability and classification of assets or the amounts and classification of liabilities.

- C. This disclosure puts the user of the statements on warning that the statements may be misleading if the company cannot continue as a going concern.

CASE 1-8 ECONOMICS AND ACCOUNTING: THE UNCONGENIAL TWINS

a. Per Kenneth E. Boulding:

"Ritual is always the proper response when a man has to give an answer to a question, the answer to which he cannot really know. Ritual under these circumstances has two functions. It is comforting (and in the face of the great uncertainties of the future, comfort is not to be despised) and it is also an answer sufficient for action."

b. No.

Per Kenneth E. Boulding:

"The wise businessman will not believe his accountant although he takes what his accountant tells him as important evidence. The quality of that evidence, however, depends in considerable degree on the simplicity of the procedures and the awareness which we have of them."

c. Per Kenneth E. Boulding:

"It is the sufficient answer rather than the right answer which the accountant really seeks."

Boulding indicates that accounting does not need to be accurate in order to serve a useful function.

CASE 1-9 I OFTEN PAINT FAKES

(This case is intended to serve as a forum for discussing the accuracy of financial statements prepared using generally accepted accounting principles.)

a. Accounting reports prepared using generally accepted accounting principles are not exactly accurate. They are intended to be sufficient to aid in making informed decisions.

b. No, accountants do not paint fakes. But, it may take an understanding of generally accepted accounting principles to reasonably comprehend the significance of the statements.



## **THOMSON ANALYTICS™**

1. This exercise introduces the use of Thomson Analytics. The Boeing Company is used as the number one exercise in Chapters 1-11.

This chapters Boeing Company exercise introduces the Boeing Company in terms of business description, industry, sector, analyst rating, and peer data.

A major advantage of Thomson Analytics is that it is constantly updated. This represents a disadvantage when it comes to the solution manual. In this exercise the analyst rating will frequently change and the peer data will change.

## Introduction to Financial Statements and Other

### Financial Reporting Topics

#### TO THE NET

1. Carol and Lawrence Zicklin Center for Business Ethics Research.

##### Mission Statement

Our mission is to sponsor and disseminate leading edge research on critical topics of business ethics.

Each student will select an academic journal and an article from that journal.

2. From Financial Accounting Standards Board Site

#### **The International Accounting Standards Board (In Part)**

The International Accounting Standards Board (IASB) was established in January 2001 to replace its predecessor international standard setter, the International Accounting Standards Committee (IASC). Creation of the IASB arose from the recommendations of the IASC's Strategy Working Party, which was created in 1997 and charged with reviewing the IASC's structure and process and proposing changes to better prepare that organization for the future of international accounting standard setting.

More information on the IASB.

The new structure has characteristics similar to that of the FASB's structure. There is an IASB Board of Trustees, an independent mostly full-time standard setting Board called the IASB, and an Advisory Council. The IASB held its first meeting to discuss technical issues in April 2001. Like the FASB, IASB meetings to discuss technical issues are open to the public.

## QUESTIONS

- 2- 1.      a. Unqualified opinion with explanatory paragraph  
            b. Unqualified opinion with explanatory paragraph  
            c. Unqualified opinion  
            d. Adverse opinion  
            e. Qualified opinion
- 2- 2.      The responsibility for the preparation and integrity of financial statements rests with management. The auditor simply examines them for fairness, conformity with GAAP, and consistency.
- 2- 3.      The basic purpose of the integrated disclosure system is to achieve uniformity between annual reports and SEC filings. It is hoped that this will improve the quality of disclosure and lighten the disclosure load for the companies reporting.
- 2- 4.      The explanatory paragraphs explain important considerations that the reviewer of the financial statements should be aware of. An example would be a doubt as to going concern ability.
- 2- 5.      A review consists principally of inquiries of company personnel and analytical procedures applied to financial data. It is substantially less in scope than an examination in accordance with generally accepted auditing standards.
- 2- 6.      No. The accountant's report will indicate that they are not aware of any material modifications that should be made to the financial statements in order for them to be in conformity with generally accepted accounting principles, and the report will indicate departures from generally accepted accounting principles.
- 2- 7.      The accountant does not express an opinion or any other form of assurance with a compilation.
- 2- 8.      No. Some statements have not been audited, reviewed, or compiled. These statements are presented without being accompanied by an accountant's report.

2- 9. Balance Sheet

The purpose of a balance sheet is to show the financial position of an accounting entity as of a particular date.

Income Statement

The income statement summarizes the results of operations for an accounting period.

Statement of Cash Flows

The statement of cash flows details the inflows and outflows of cash during a specified period of time.

- 2-10. Footnotes (notes) increase the full disclosure of the statements by providing information on inventory and depreciation methods, subsequent events, contingent liabilities, etc.
- 2-11. Contingent liabilities are dependent on an occurrence to determine if payment will be necessary. Liabilities from lawsuits are dependent on the outcome of the cases; they therefore represent contingent liabilities.
- 2-12. a, c.
- 2-13. A proxy is the solicitation sent to stockholders for the election of directors and for the approval of other corporation actions. The proxy represents the shareholder authorization regarding the casting of that shareholder's vote.
- 2-14. A summary annual report is a condensed annual report that omits much of the financial information included in a typical annual report.
- 2-15. The firm must include a set of fully audited statements and other required financial disclosures in the proxy materials sent to shareholders. The 10-K is also available to the public.
- 2-16. There is typically a substantial reduction in non-financial pages and financial pages. The greatest reduction in pages is usually in the financial pages.

- 2-17. Cash flows from operating activities, cash flows from investing activities, and cash flows from financing activities.
- 2-18. The income statement and the statement of cash flows. The income statement describes income between two balance sheet dates. The statement of cash flows describes cash flows between two balance sheet dates.
- 2-19. Assets, liabilities, and owners' equity
- 2-20. No. Cash dividends are paid with cash. This reduces the cash account and the retained earnings account.
- 2-21. Footnotes are an integral part of financial statements. A detailed review of footnotes is absolutely essential in order to understand the financial statements.
- 2-22. APB Opinion No. 22 requires disclosure of accounting policies as the first footnote to financial statements or just prior to the footnotes.
- 2-23. They are interchangeable terms referring to ideals of character and conduct. These ideals, in the form of codes of conduct, furnish criteria for distinguishing between right and wrong.
- 2-24. Law can be viewed as the minimum standard of ethics.
- 2-25. Assets = Liabilities + Stockholders' equity (capital).
- 2-26. The scheme of the double-entry system revolves around the accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Stockholders' Equity}$$

With double-entry, each transaction is recorded with the total dollar amount of the debits equal to the total dollar amount of the credits. Each transaction affects two or more asset, liability, or owners' equity accounts (including the temporary accounts).

- 2-27. a. Assets, liabilities, and stockholders' equity accounts are referred to as permanent accounts because the balances in these accounts carry forward to the next accounting period.
- b. Revenue, expense, gain, loss, and dividend accounts are not carried into the next period. These accounts are closed to Retained Earnings. They are referred to as temporary accounts.
- 2-28. Because the employee worked in the period just ended, the salary must be matched to that period's revenue.
- 2-29. Most of the accounts are not up to date at the end of the accounting period. These accounts need to be adjusted so that all revenues and expenses are recognized and the balance sheet accounts have a correct ending balance.
- 2-30. Companies use a number of special journals to improve record keeping efficiency that could not be obtained by using only the general journal.
- 2-31. The SEC requires foreign registrants to conform to U.S. GAAP, either directly or by reconciliation. This approach presents a problem to the U.S. Securities exchanges, such as the NYSE. This is because the U.S. standards are perceived to be the most stringent. This puts exchanges like the NYSE at a competitive disadvantage with foreign exchanges that are perceived to have lower standards.
- 2-32. Sole Proprietorship  
A sole proprietorship is a business entity owned by one person.
- Partnership  
A partnership is a business owned by two or more individuals.
- Corporation  
A corporation is a legal entity incorporated in a particular state. Ownership is evidenced by shares of stock.
- 2-33. The use of insider information could result in abnormal returns.

- 2-34. In an efficient market the method of disclosure is not as important as whether or not the item is disclosed.
- 2-35. Abnormal returns could be achieved if the market does not have access to relevant information or if fraudulent information is provided.
- 2-36. Purchase – With the purchase method the firm doing the acquiring records the identifiable assets and liabilities at fair value at the date of acquisition. The difference between the fair value of the identifiable assets and liabilities and the amount paid is recorded as goodwill (an asset).
- 2-37. Consolidated statements reflect an economic, rather than a legal, concept of the entity.
- 2-38. The financial statements of the parent and the subsidiary are consolidated for all majority-owned subsidiaries unless control is temporary or does not rest with the majority owner.
- 2-39. The SEC requires that a copy of the companies code of ethics be made available by filing and exhibit with its annual report, or by providing it on the company's Internet Web Site.

PROBLEMS

PROBLEM 2-1

Cash	
Dec 6	2,500
Dec 14	
	3,000
Dec 24	
	1,200
Dec 10	
	500
Dec 17	
	6,000
Dec 28	
	700

Sales	
Dec 2	
	4,000
Dec 6	
	2,500

Accounts Receivable	
Dec 2	
	4,000
Dec 21	
	900
Dec 24	
	1,200

Office Salaries	
Dec 10	
	500

Land	
2.200 original cost	
Dec 14	
	2,200

Gain on Sale of Land	
Dec 14	
	800

Equipment	
Dec 17	
	6,000

Services	
Dec 21	
	900

Accounts Payable	
Dec 28	
	700

PROBLEM 2-2

Cash	
July 15	
	500
July 1	
	10,000
July 20	
	300
July 24	
	400

Revenue	
July 8	
	3,000

Accounts Receivable	
July 8	
	3,000
July 15	
	500

Land

Repair Expense



July 1	
10,000	

Accounts Payable

July 20	July 12
300	600

July 12	
600	

Wages Expense

July 24	
400	

PROBLEM 2-3

Insurance Expense	
(1) December 31	
600	

Prepaid Insurance	
July 1 1,200	(1) December 31
	600

Supplies Expense	
(2) 300	

Supplies	
September 10 500	(2) 300

Revenue	
(3) 1,000	December 1 1,000

Unearned Revenue	
	(3) 1,000

Interest Expense	
(4) 200	

Interest Payable	
	(4) 200

Salaries Expense	
(5) 500	

Salaries Payable	
	(5) 500

Revenue	
	(6) 400

Accounts Receivable	
(6) 400	

PROBLEM 2-4

<u>Prepaid Insurance</u>		<u>Insurance Expense</u>	
(1)		May 1	960
640			(1)
			640
<u>Supplies Expense</u>		<u>Supplies</u>	
(2)		December 1	400
100			(2)
			100
<u>Interest Receivable</u>		<u>Interest Income</u>	
(3)			(3)
100			100
<u>Salaries Expense</u>		<u>Salaries Payable</u>	
(4)			(4)
800			800
<u>Unearned Revenue</u>		<u>Revenue</u>	
	(5)	(5)	
	600	600	
<u>Accounts Payable</u>		<u>Advertising Expense</u>	
	(6)	(6)	
	400	400	

PROBLEM 2-5

- a. 4 The balance sheet equation is defined as assets are equal to liabilities plus owners' equity.
- b. 1 Assets (\$40,000) = liabilities? + owners' equity (\$10,000).
- c. 3 Assets (\$100,000) = liabilities (\$40,000) + owners' equity?
- d. 3 Accounts receivable is a balance sheet account and therefore a permanent account.
- e. 3 Insurance expense is an income statement account and therefore a temporary account.
- f. 4 Expenses, assets, and dividends all have a normal balance of a debit.

PROBLEM 2-6

- a.   1   All-purpose statement is not a classification for an audit opinion.
- b.   1   An unqualified opinion usually has the highest degree of reliability.
- c.   5   The typical unqualified opinion has three paragraphs.
- d.   4   All of the above.
- e.   4   Two years of audited balance sheets and three years of audited statements of income and three years of statements of cash flows.
- f.   1   Lack of harmonization of international accounting standards is thought to have a negative effect on international trade of accounting practice and services.
- g.   2   The Internal Revenue Service deals with U.S. federal taxes.
- h.   2   Form 10-K is the annual financial report submitted to the Securities and Exchange Commission.

PROBLEM 2-7

	<u>Permanent (P) or Temporary (T)</u>	<u>Normal Balance Dr. (Cr.)</u>
Cash	<u>  P  </u>	<u>Dr.</u>
Accounts receivable	<u>  P  </u>	<u>Dr.</u>
Equipment	<u>  P  </u>	<u>Dr.</u>
Accounts payable	<u>  P  </u>	<u>Cr.</u>
Common stock	<u>  P  </u>	<u>Cr.</u>
Sales	<u>  T  </u>	<u>Cr.</u>
Purchases	<u>  T  </u>	<u>Dr.</u>
Rent expense	<u>  T  </u>	<u>Dr.</u>
Utility expense	<u>  T  </u>	<u>Dr.</u>
Selling expenses	<u>  T  </u>	<u>Dr.</u>

PROBLEM 2-8

<u>c</u>	1
<u>d</u>	2
<u>b</u>	3
<u>a</u>	4

PROBLEM 2-9

<u>c</u>	1
<u>b</u>	2
<u>a</u>	3
<u>d</u>	4



## CASES

### CASE 2-1 THE CEO RETIRES

**Teaching Note: The CEO Retires** (Teaching note prepared by the American Accounting Association)

**PURPOSE:** This case is meant to illustrate that the accounting choices available can be used by management to manipulate the reported financial results of the company.

**CONTENT:** The CEO of a company is entering the last year of his employment. For reasons of enhanced reputation, maximum compensation in his final year, and maximum compensation through the years via his pension, he has the incentive to manipulate the financial results of the company. Since this is his last year with the company, any long-term effects of the decisions he may make are not considered relevant. Furthermore, there are numerous directions the CEO can take: changing accounting estimates, deferring investing decisions, or changing accounting methods.

After consideration of a variety of alternatives, the CEO meets with the CFO to get his response to the CEO's proposed options.

#### **Decision Model**

##### **a. Determine the Facts**

Work through the case, identifying essential facts, especially those included in the contents section above.

Known facts should be listed first; then determine what one would want to know if possible. NOTE: Make the point to students that we never have all the facts; decisions are almost always made on incomplete information.

##### **b. Define the Ethical Issues**

- (1) List all stakeholders - be sure that the class is thorough in this step -- the ethical issues will most likely arise out of conflicting interests between and among the stakeholders.

the CEO, Dan Murphy

the CFO, Mike Harrington

the other members of top management

the members of the Board of Directors

the company's auditors

the company's employees (i.e., if inventory builds, it may lead to later layoffs; a lack of repair work may create dangers in the workplace)

the company's customers (i.e., if inventory builds, it may lead to obsolescence; lack of repair work may lead to product quality problems)

(2) List the ethical issues

- |  |     |  |
|--|-----|--|
| The CEO's compensation   | vs. | The integrity of the company's financial statements                                |
| The CFO's loyalty to his superior  | vs. | The CFO's responsibility to his job  |
| The CFO's loyalty to his superior  | vs. | The CFO's responsibility to protect the interests of the company and its employees |
| Top management's responsibility to represent the interests of the shareholders                         | vs. | Each individual's desire for promotion and advancement                             |
| The Board of Directors' duty to provide oversight on the behalf of the shareholders                    | vs. | Rewarding the CEO for a job well done  |
| The auditor's duty to ensure that the financial statements present fairly the condition of the company | vs. | The auditor's desire to remain engaged as the auditor of the company               |

(This list can be extended, but you should be sure that these issues are identified)



**c. Identify Major Principles, Rules, and Values**

(Here you will repeat some of the above, e.g. integrity, but you will translate others into ethical language, e.g., fairness, obligation, rights)

Integrity (of the CEO and of the financial statements)

Equity

Fairness

Credibility

Protection of the business

**d. Specify the Alternatives**

Identify major options: encourage creative solutions that may be closer to win-win if possible.

The CFO could support a favorable plan for the CEO

The CFO could object to the proposals and refuse to sign off on them

The CFO could object to the proposals and threaten to go to the Board if the CEO persists

The CFO could communicate his concerns to the outside auditors

*Note: At this point, or even earlier, some students will have begun to take a position. The instructor should be aware of these positions and challenge students to be open to questioning their position, as well as to be open to similar questioning by others. You may want to return to this "position taking" in the discussion over Step g, the decision.*

**e. Compare Norms, Principles, and Values with the Various Alternatives**

See how many of the class members will move to a decision at this point, based on the force or strength of a norm or principle. In some cases, a principle is so strong or the harm so egregious that some will decide now.

For example, the concern for integrity of the financial statements may lead to strong resistance by the CFO to the CEO's proposals.

Regardless of whether a decision is reached, work through Steps f and g as if such steps were still required.

**f. Assess the Consequences**

Take two or three differing alternatives and examine the long- and short-range consequences.

*The CFO could support a favorable plan for the CEO*

The CEO benefits from enhanced retirement benefits (if the outside auditors sign off)

The CFO may be rewarded by the CEO with increased salary or bonus

The firm, including successor leaders and employees, may suffer from reduced earnings in the years following the CEO's retirement

The CFO may have problems with successor leaders if his agreement to the CEO's plan is discovered

The CFO's integrity will be compromised

*The CFO could object to the proposals and refuse to sign off on them*

The CEO may drop his plans to enhance his retirement

The CEO may threaten to penalize the CFO's job security or income

The CEO may take his plan to the Board without concurrence of the CFO

The CFO's integrity will be intact

*The CFO could object to the proposals and threaten to go to the Board if the CEO persists*

The CEO may drop his plans to enhance his retirement

The CEO may threaten to penalize the CFO's job security or income

The CFO may stand fast or may capitulate and agree

The CEO may persist and the CFO may go to the Board

The Board may reject the CEO's plans

The Board may agree with the CEO

The Board may seek the advice of the outside auditors

**The CFO's integrity is intact**

The CFO could communicate his concerns to the outside auditors

The outside auditors may agree with the CFO and indicate that they will refuse to issue an unqualified report

The outside auditors may support the CEO's plan

The CFO will then have to drop the matter or decide whether to go to the Board

The CFO's integrity will be intact

(There may be additional consequences to alternatives reviewed. There may also be other alternatives. The task now is to weigh or evaluate the consequences of the various alternatives. Some kind of numerical weighting, like a +3, -3 scale, can be used to determine comparative value of alternatives. Point out to the class the difficulty of assigning numerical values, but also note that we do compare, routinely, the significance of various consequences, although not always quantitatively.)

(If a decision was not reached in Step e above, then no principle or value was determinative. Now the consequence with the highest numerical value should be the choice *if it squares with one of the basic listed principles and values.*)

**g. Make Your Decision**

Take a vote; insist that everyone choose.

Examine the outcome and rationale for different positions, if there is time.

## TIME ALLOCATION

A full discussion and analysis of the case will take approximately an hour. If you are interested in focusing on the identification of ethical issues at various points in the course, you could deal with the identification of stakeholders and defining of the ethical issues in 15-20 minutes.

### CASE 2-2 THE DANGEROUS MORALITY OF MANAGING EARNINGS

- a. According to the article, "most managers and their accountants know otherwise - that managing short-term earnings can be part of a manager's job."
- b. "It seems many managers are convinced that if a practice is not explicitly prohibited or is only a slight deviation from rules, it is an ethical practice regardless of who might be affected either by the practice or the information that flows from it."
- c. "A major finding of the survey was a striking lack of agreement. None of the respondent groups viewed any of the 13 practices unanimously as an ethical or unethical practice."
- d.
  1. On average, the respondents viewed management of short-term earnings by accounting methods as significantly less acceptable than accomplishing the same ends by changing or manipulating operating decisions or procedures.
  2. The direction of the effect on earnings matters. Increasing earnings is judged less acceptable than reducing earnings.
  3. Materiality matters. Short-term earnings management is judged less acceptable if the earnings effect is larger rather than smaller.
  4. The time period to the effect may affect ethical judgments.
  5. The method of managing earnings has an effect.
- e. Management does not have the ability to manage earnings in the long run by influencing financial accounting.

CASE 2-3 FREQUENT FLIER AWARDS - TICK-TICK, TICK-TICK, TICK-TICK

a. Yes

SFAC No. 6, "Elements of Financial Statements:" "Liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events."

b. The airlines had millions and millions of miles accumulated in unused miles. Thousands of these accounts are inactive and will never accumulate adequate miles for a flight or any award. In addition, the airlines apparently have the right to change the terms for granting a flight or an awards.

c. 1. A contingent liability is dependent upon the occurrence or non-occurrence of one or more future events to confirm the liability.

2. Yes

In practical terms, the unused miles represent a contingent liability. The situation is complicated by the fact that the airlines apprently have the right to make changes to their frequent-flier programs.

3. Recommend that the contingent liability be recorded and the accounting policy be disclosed.

In practice, the airlines record this liability and briefly describe their policy. Seldom is the dollar amount of the liability disclosed.

Most airlines use the incremental method to account for their frequent flier awards. Once a program member accumulates the required number of miles to qualify for free travel, then the liability is recorded. The dollar amount of the liability is estimated at the incremental cost of providing the free transportation.

The incremental cost may be computed differently by each airline. Examples of cost factors to be considered are costs of food, additional fuel, issuing the ticket and handling of baggage.

#### CASE 2-4 INTERNATIONAL ACCOUNTING - HARMONIZATION IN PRACTICE

- a. The comments of Dennis R. Beresford indicate a very positive trend in harmonization of international accounting.
- b. No  
The meeting described represents a positive trend towards harmonization, but a very preliminary effort when viewed in the big picture. Approximately only a dozen countries were represented and they apparently have somewhat similar economic systems.

#### CASE 2-5 MATERIALITY: IN PRACTICE

(This case provides the opportunity to review the application of the materiality concept.)

- a. Professional standards require auditors to make a preliminary judgment about materiality levels during the planning of an audit. Therefore it would be prudent for auditors to give careful consideration to planning materiality decisions.
- b. SAS No. 47 recognizes that it ordinarily is not practical to design procedures to detect misstatements that could be qualitatively material.
- c. It is difficult to design procedures to detect misstatements that could be quantitatively material. Although difficult to design these procedures a number of "rule of thumb" materiality calculations have emerged. A difficulty with these "rule of thumb" materiality calculations is that sizeable differences can result depending on the "rule of thumb."
- d. Because of the difficulty of applying the materiality concept it is often an issue in court cases involving financial statements.

#### CASE 2-6 WHO IS RESPONSIBLE?

- a. The official position as presented by the accounting profession is that the financial statements are the responsibility of the Company's management.
- b. The accountant (auditor) expresses an opinion on the financial statements based on the audit. The audit is to be conducted in accordance with generally accepted auditing standards.
- c. Society appears to focus on the role of the independent auditor as a public watchdog. This includes taking responsibility for the financial statements. This role is broader than the official position as to the responsibility of the accountant (auditor).  
Another factor is that the accountant (auditor) is perceived as having the ability to pay, either directly, or by way of insurance.
- d. Unqualified opinion.
- e. No. We would expect these audited financial statements to be free of material misstatement.

#### CASE 2-7 SAFE HARBOR

(This case provides the opportunity for the student to express opinions as to any benefits to users of financial reports from forward-looking statements.)

- a. Management is in an ideal position to project financial results. Users of financial reports will likely be aided in making decisions by the forward-looking statements of management.
- b. Yes.  
Investors will be aided in making decisions because of the forward-looking statements of management.  
Abusive litigation is probably of little benefit to investors, since the lion's share of recoveries under the litigation may go to the attorneys who brought the suit than to the investors.

**THOMSON ANALYTICS™**

1. This Boeing Company exercise uses the proxy statement to review the directors, board committees, and executive officers. Students find the Board and Executive Officers compensation to be particularly interesting.



## Balance Sheet

### TO THE NET

1. Cooper Tire
  - a. Total stockholders' equity at Decembr 31, 2001  
\$910,240,000
  - b. Cost of treasury shares at December 31, 1001  
\$197,012,000
  - c. Treasury stock is subtracted from stockholders' equity because it represents stock that was sold and later repurchased and not retired.
2. Reebok
  - a. Total current assets at December 31, 2001  
\$1,194,695,000
  - b. Net intangibles at December 31, 1001  
\$76,686,000
  - c. Intangibles that are amortized have a limited life.
3. Gap Inc.

Firms are allowed to incorporate by reference data that is required in the 10-K. Thus the information will not be found in the 10-K. Gap Inc. incorporated by reference to their annual report.

Item 8 of the 10-K included this statement.

"The information required by this item is incorporated herein by reference to pages 27 through 44 of the 2001 annual report to shareholders included as Exhibit 13 to this annual report on Form 10-K."

Thus the answers to these questions cannot be found in the 10-K.

## QUESTIONS

- 3- 1. Assets - Resources of the firm  
Liabilities - Debts of the firm - Creditors' interest  
Owners' Equity - Owners' interest in the firm
- 3- 2. a. L e. A i. A m. A q. A  
b. L f. A j. E n. L r. A  
c. A g. L k. E o. L s. A  
d. A h. A l. E p. A t. A
- 3- 3. a. TA c. IA e. IA g. TA i. TA k. IV  
b. CA d. CA f. CA h. CA j. CA l. TA
- 3- 4. They are listed in order of liquidity, which is the ease with which they can be converted to cash.
- 3- 5. Marketable securities are held as temporary investments or idle cash. They are short-term, low risk, highly liquid, low yield. Examples are treasury bills and commercial paper. Investments are long-term, held for control or future use in operations. They are usually less liquid and expected to earn a higher return.
- 3- 6. Accounts receivable represents the money that the firm expects to collect; accounts payable represents the debts for goods purchased by a firm.
- 3- 7. A retailing firm will have only finished goods and supplies. A manufacturing firm will have raw materials, work in process, finished goods, and supplies.
- 3- 8. Depreciation measures the wearing away of the usefulness of the asset. Tools, machinery, and buildings are depreciated because they wear out. Land is not depreciated, since its value typically does not decline. If the land has minerals or natural resources, it may be subject to depletion.
- 3- 9. Straight-line depreciation is better for reporting, since gives higher profits than does accelerated depreciation. Double-declining balance is preferable for tax purposes, since it allows the highest depreciation and, thereby, lower taxes in the early years of the life of the asset. Using double-declining balance for taxes increases the firm's cash flow in the short run.

- 3-10. The rent is treated as a liability because it is unearned. The rental agency owes the tenant the use of the property until the end of the term of the agreement. The rent should be recognized as income over the period covered by the rent.
- 3-11. a. A bond will sell at a discount if its stated rate of interest is less than the market rate. It sells to yield the market rate. It might also sell low if there were a great deal of risk involved.
- b. The discount is shown as a reduction of the liability.

Bonds payable	\$1000	
Less: bond discount	<u>170</u>	\$830

The bond discount is amortized, with the amortization shown as interest expense on the income statement.

- 3-12. Include minority interest as a long-term liability for primary analysis.
- 3-13. Historical cost causes difficulties in analysis because cost does not measure the current worth or value of the asset.
- 3-14. At the option of the bondholder (creditor), the bond is exchanged for a specified number of common shares (and the bondholder becomes a common stockholder). Often convertible bonds are issued when the common stock price is low, in the opinion of management, and the firm eventually wants to increase its common equity. By issuing a convertible bond, the firm may get more for the specified number of common shares. When the common stock price increases sufficiently, the bondholder will convert the bond to common stock.
- 3-15.
- |       |       |       |       |
|-------|-------|-------|-------|
| a. CA | f. CA | k. CL | p. NA |
| b. CA | g. E  | l. NL | q. CA |
| c. CL | h. NA | m. CL | r. CL |
| d. CL | i. CA | n. CA | s. CA |
| e. E  | j. E  | o. E  |       |

- 3-16. a. Accumulation of dividends. With the cumulative feature, if a corporation fails to declare the usual dividend on the cumulative preferred stock, the amount of passed dividends becomes dividends in arrears. Common stockholders cannot be paid any dividends until the preferred dividends in arrears and the current preferred dividends are paid.
- b. Participation in excess of stated dividend rate. When preferred stock is participating, preferred stockholders may receive an extra dividend beyond the stated rate. The terms of the participation depend on the terms included with the stock certificates.
- c. Convertibility into common stock. Convertible preferred stock contains a provision that allows the preferred stockholders, at their option, to convert the share of preferred stock at a specific exchange ratio into another security of the corporation.
- d. Callability by the corporation. Callable preferred stock may be retired (recalled) by the corporation at its option.
- e. Preference in liquidation. Should the corporation liquidate, the preferred stockholders normally have preference to have their claims settled prior to any payment to common stockholders.
- 3-17. The account unrealized exchange gains or losses is an owners' equity account that is used to record gains or losses from translating foreign currency financial statements incorporated into the financial statements of an enterprise by consolidation, combination, or the equity method of accounting.
- 3-18. Treasury stock represents the stock of the company that has been sold, repurchased, and not returned. It is subtracted from stockholders' equity so that net stockholders' equity is for shares outstanding only.
- 3-19. The \$60, or any portion, will occur as cost of sales if the goods are sold and as inventory if they are not sold.
- 3-20. These subsidiaries are presented as an investment on the parent's balance sheet.

- 3-21. Minority interest is presented on a balance sheet when an entity in which the parent company has less than 100% ownership is consolidated.
- 3-22. If DeLand Company owns 100% of Little Florida, Inc., it will not have a minority interest, since minority interest reflects ownership of minority shareholders in the equity of consolidated subsidiaries that are not wholly owned. If it only owns 60%, then there would be a minority interest. Little Florida would not be consolidated when control is temporary or does not rest with the majority owner.
- 3-23. The account unrealized decline in market value of noncurrent equity investments is an owners' equity account that is used to record unrealized losses on long-term equity investments.
- 3-24. Redeemable preferred stock is subject to mandatory redemption requirements or has a redemption feature that is outside the control of the issuer. Coupled with the typical characteristics of no vote and fixed return, this security is more like debt than equity for the issuing firm.
- 3-25. Donated capital results from donations to the company by stockholders, creditors, or other parties.
- 3-26. The land account under assets would be increased and the donated capital account in stockholders' equity would be increased. The donated land would be recorded at the appraisal amount.
- 3-27. A quasi-reorganization is an accounting procedure equivalent to an accounting fresh start. A quasi-reorganization involves the reclassification of a deficit in retained earnings to paid-in capital. It changes the carrying values of assets and liabilities to reflect current values.
- 3-28. The unearned compensation is presented as a reduction in stockholders' equity and the offsetting amount is presented as a liability.
- 3-29. An ESOP is a qualified stock-bonus, or combination stock-bonus and money-purchase pension plan designed to invest primarily in the employer's securities.

- 3-30. These institutions are willing to grant a reduced rate of interest because they are permitted an exclusion from income for 50% of the interest received on loans used to finance an ESOP's acquisition of company stock.
- 3-31. Some firms do not find an ESOP attractive because it can result in a significant amount of voting stock in the hands of employees. This will likely dilute the control of management.
- 3-32. This firm records the commitment as a liability and as a deferred compensation deduction within stockholders' equity.
- 3-33. Depreciation is the process of allocating the cost of building and machinery over the periods of benefit. Spreading the cost of an intangible asset is called amortization, while spreading the cost of a natural resource is called depletion.
- 3-34. The three factors usually considered when computing depreciation are asset cost, length of the life of the asset, and the salvage value when it is retired from service.
- 3-35. A firm will often want to depreciate slowly for the financial statements because this results in the highest immediate income. The same firm would want to depreciate at a fast pace for income tax returns because this results in the lowest immediate income and thus lower income taxes.
- 3-36. Over the life of an asset, the total depreciation will be the same, regardless of the depreciation method selected.
- 3-37. Yes. Depreciation is the process of allocating the cost of buildings and machinery over the periods of benefit.

3-38. Accumulated Other Comprehensive Income

Conceptually, this account balance represents retained earnings from other comprehensive income.

Categories of other comprehensive income are:

1. foreign currency translation adjustments.
2. unrealized holding gains and losses on available-for-sale marketable securities.
3. changes to stockholders equity resulting from additional minimum pension liability adjustments.
4. unrealized gains and losses from derivative instruments.

PROBLEMS

PROBLEM 3-1

Airlines International  
Balance Sheet  
December 31, 2003

ASSETS:

Current assets:

Cash		\$ 28,837
Marketable securities		10,042
Accounts receivable	\$ 67,551	
Less: Allowance for doubtful accounts	<u>248</u>	67,303
Inventory		16,643
Prepaid expenses		<u>3,963</u>
Total current expenses		\$126,788

Investment and special funds 11,901

Property, plant, and equipment:

Property, plant, and equipment	\$809,980	
Less: Accumulated depreciation	<u>220,541</u>	589,439

Other assets 727  
Total assets \$728,855

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:

Accounts payable	\$ 77,916	
Accrued expenses	23,952	
Unearned transportation revenue	6,808	
Current installments of long-term debt	<u>36,875</u>	

Total current liabilities \$145,551

Long-term debt, less current  
portion 393,808

Deferred income taxes 42,070

Stockholders' equity:

Common stock	\$ 7,152	
Capital in excess of par	72,913	
Retained earnings	<u>67,361</u>	

Total stockholders' equity 147,426

Total liabilities and stockholders' equity \$728,855



PROBLEM 3-2

Lukes, Inc.  
Balance Sheet  
December 31, 2003

ASSETS

Current assets:		
Cash	\$ 3,000	
Receivables, less allowance of \$3,000	58,000	
Inventories	54,000	
Prepaid expenses	<u>2,000</u>	
Total current assets		\$117,000
Plant and equipment:		
Buildings	\$ 75,000	
Machinery and equipment	<u>300,000</u>	
	375,000	
Less: accumulated depreciation	<u>200,000</u>	175,000
Land		11,000
Other assets		<u>7,000</u>
Total assets		<u>\$310,000</u>

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:		
Accounts payable	\$ 35,000	
Accrued income taxes	3,000	
Other accrued expenses	8,000	
Current portion of long-term debt	<u>7,000</u>	
Total current liabilities		\$ 53,000
Long-term liabilities:		
Long-term debt, less current portion		99,870
Deferred income tax liability		<u>24,000</u>
Total long-term liabilities		123,870
Stockholders' equity:		
Common stock, no par value 10,000 shares authorized, 5,724 shares issued		3,180
Retained earnings		<u>129,950</u>
Total stockholders' equity		<u>133,130</u>
Total liabilities and stockholders' equity		<u>\$310,000</u>

PROBLEM 3-3

Alleg, Inc.  
Balance Sheet  
December 31, 2003

ASSETS

Current assets:	
Cash	\$ 13,000
Marketable securities	17,000
Accounts receivable	26,000
Inventories	<u>30,000</u>
Total current assets	86,000
Plant and equipment:	
Land and buildings	57,000
Machinery and equipment	<u>125,000</u>
Less: Accumulated depreciation	182,000
Total plant and equipment	<u>61,000</u>
	<u>121,000</u>
Intangibles:	
Goodwill	8,000
Patents	<u>10,000</u>
	<u>18,000</u>
Other assets	<u>50,000</u>
Total assets	<u>\$275,000</u>

LIABILITIES AND STOCKHOLDERS' EQUITY

Current liabilities:	
Accounts payable	\$ 15,000
Current maturities of long-term debt	<u>11,000</u>
Total current liabilities	<u>26,000</u>
Long-term liabilities:	
Mortgages payable	80,000
Bonds payable	70,000
Deferred income taxes	<u>18,000</u>
Total long-term liabilities	<u>168,000</u>
Stockholders' equity:	
Common stock, no par value	
21,000 shares authorized at \$1 par value,	
10,000 shares issued	10,000
Additional paid-in capital	38,000
Retained earnings	<u>33,000</u>
Total stockholders' equity	<u>81,000</u>
Total liabilities and stockholders' equity	<u>\$275,000</u>



PROBLEM 3-4

- a. Restricted cash in sinking fund should be classified as long-term investment.
- b. Investment in Subsidiary Company is long-term.
- c. Measurement basis of marketable securities should be disclosed.
- d. Preferable to show land and buildings separately, since land is not depreciable.
- e. Treasury stock should be deducted from stockholders' equity.
- f. Discount on bonds payable is a contra liability and should be classified as a deduction from bonds payable.
- g. Prepaid expenses should be classified as a current asset.
- h. For most industries, liabilities should be classified as current and long-term.
- i. Preferred and common stock should be separated, as should capital in excess of par.
- j. Net income and dividends are usually shown on a separate statement of retained earnings.

PROBLEM 3-5

- a. Heading date is wrong. It should read December 31, 2003.
- b. Disclose allowance for doubtful accounts.
- c. Treasury stock should be deducted from stockholders' equity.
- d. Land and building are disclosed net. Accumulated depreciation should be disclosed.
- e. Short-term U.S. Notes should be classified under current assets.
- f. Supplies should be classified under current assets.
- g. Bonds payable should be under long-term liabilities.
- h. Premium on bonds payable should be presented with bonds payable under long-term liabilities.
- i. Minority interest should be presented before stockholders' equity.
- j. Redeemable preferred stock should be presented before stockholders' equity.

PROBLEM 3-6

- a. Balance sheet should be in the heading.
- b. \$10,000 cash should be classified under "other assets" (restricted for payment of long-term note).
- c. Disclose accumulated depreciation related to building.
- d. Patent should be classified under intangibles.
- e. Organizational costs should be disclosed under intangibles.
- f. Prepaid insurance should be under current assets.
- g. Dividends payable should be classified as a current liability.
- h. Notes payable and bonds payable due in the years 2006 and 2013 respectively, should not be classified as a current liability.

PROBLEM 3-7

- a. The dividends would reduce retained earnings on the balance sheet.
- b. You would disclose a contingent liability in footnote format.
- c. No accounting recognition is given for possible general business risks for which losses cannot be estimated.
- d. This subsequent event requires a footnote.
- e. Restricted cash should be classified as a long-term asset.
- f. Securities held for control should be classified as long-term investments.
- g. Land must be listed at cost. It will have to be written back down.
- h. This would be disclosed in a footnote. (Also on the income statement, the loss will be disclosed as an extraordinary item.)

PROBLEM 3-8

- a. Minority interest will be 20% of the total equity of \$300,000, or \$60,000. Minority interest should be classified as a liability for purposes of financial analysis.
- b. The minority share of earnings will be 20% of \$50,000, or \$10,000.

PROBLEM 3-9

	<u>Preferred</u>	<u>Common</u>
a. Year 1	0	0
Year 2		
Preferred		
Cumulative from year 1		
10,000 shares x \$100 par value =		
\$1,000,000 x 10%	\$100,000	
Year 2 dividend		
10,000 shares x \$100 par value =		
\$1,000,000 x 10%	<u>\$100,000</u>	
Total	<u>\$200,000</u>	0
Year 3		
Preferred		
Year 3 dividend		
10,000 shares x \$100 par value =		
\$1,000,000 x 10%	\$100,000	
Common		
The common gets the remaining		
dividends because the preferred		
is nonparticipating		\$120,000
Total	<u>\$100,000</u>	<u>\$120,000</u>

	<u>Preferred</u>	<u>Common</u>
b.		
Year 1	0	0
Year 2		
Preferred		
Arrears (see computation in a.)	\$100,000	
Year 2 dividend		
(See computation in a.)	<u>\$100,000</u>	
Total	<u>\$200,000</u>	0
Year 3		
Preferred		
Year 3 dividend		
(See computation in a.)	\$100,000	
Common		
80,000 shares x \$5 = \$400,000		
x 10% = 40,000		40,000
2% to preferred		
(2% x \$1,000,000)	20,000	
2% to common		
(2% x \$400,000)		8,000
Remaining dividend to common		<u>52,000</u>
Total	<u>\$120,000</u>	<u>\$100,000</u>
c.		
Year 1	0	0
Year 2		
Preferred		
Arrears (see computation in a.)	\$100,000	
Year 2 Dividend		
(See computation in a.)	<u>\$100,000</u>	
Total	<u>\$200,000</u>	0
Year 3		
Preferred		
Year 3 dividend		
(See computation in a.)	\$100,000	
Common		
80,000 shares x \$5 = \$400,000		
x 10% = 40,000		40,000



Fully participating; therefore, the remaining dividend will be split between preferred and common in proportion to their outstanding stock at total par value.

Total par value of preferred	\$1,000,000	71.43%
Total par value of common	\$ 400,000	28.57%
Total	\$1,400,000	100.00%

Preferred 71.43% x \$80,000 =	\$ 57,144	
Common 28.57% x \$80,000 =		\$ 22,856
Total	<u>\$157,144</u>	<u>\$ 62,856</u>

d.

	<u>Preferred</u>	<u>Common</u>
Year 1	0	0
Year 2		
Preferred		
Year 2 dividend		
(See computation in a.)	\$100,000	
Common		
Remainder to common		<u>\$100,000</u>
Total	<u>\$100,000</u>	<u>\$100,000</u>
Year 3		
Preferred		
Year 3 dividend		
(See computation in a.)	\$100,000	
Common		
Remainder to common		<u>\$120,000</u>
Total	<u>\$100,000</u>	<u>\$120,000</u>

PROBLEM 3-10

a.

Year 1			
Preferred			
5,000 x \$100 x 9% = \$45,000		<u>\$ 40,000</u>	<u>0</u>
Year 2			
Preferred			
Cumulative		\$ 5,000	
5,000 x \$100 x 9% = \$45,000		45,000	
Common			
10,000 x \$10 x 9% = \$9,000			9,000

Fully participating; therefore, the remaining dividend will be split between preferred and common in proportion to their outstanding stock at total par value.

Total par value of preferred	\$ 500,000	83.3%
Total par value of common	\$ 100,000	16.7%
Total	<u>\$ 600,000</u>	<u>100.0%</u>

\$65,000 - \$5,000 - \$45,000 - \$9,000		
= \$6,000	<u>5,000</u>	<u>1,000</u>
	<u>\$55,000</u>	<u>\$10,000</u>

b.

	Preferred	Common
Year 1		
Preferred		
5,000 x \$100 x 9% = \$45,000	<u>\$ 40,000</u>	<u>0</u>
Year 2		
Preferred		
5,000 x \$100 x 9% = \$45,000	\$45,000	
Common		\$20,000
Remaining dividend to common		
(\$65,000 - \$45,000)		

c.

Year 1			
Preferred			
5,000 x \$100 x 9% = \$45,000	\$ 40,000	<u>0</u>	
Year 2			
Preferred			
Cumulative	\$ 5,000		
5,000 x \$100 x 9% = \$45,000	45,000		
Common			
10,000 x \$10 x 9% =			\$ 9,000

Additional % to preferred and common:

Preferred:	5,000 x \$100 x 1%	5,000	
Common :	10,000 x \$10 x 1%		1,000
		<u>\$ 55,000</u>	<u>\$ 10,000</u>

d.

Year 1			
Preferred			
5,000 x \$100 x 9% = \$45,000	\$ 40,000	<u>0</u>	
Year 2			
Preferred			
Cumulative	\$ 5,000		
5,000 x \$100 x 9% = \$45,000	45,000		
Remaining to common			\$ 15,000
	<u>\$ 50,000</u>		<u>\$ 15,000</u>

PROBLEM 3-11

a.

$$\text{Straight-line method} = \frac{\$100,000 - \$10,000}{10} = \$9,000 \text{ per year}$$

b.

Declining-balance method

Year 1		
$1/10 \times 2 \times \$100,000 =$		\$20,000
Year 2		
$1/10 \times 2 \times \$ 80,000 =$		\$16,000
Year 3		
$1/10 \times 2 \times \$ 64,000 =$		\$12,800

c.

Sum-of-the-years'-digits method

Year 1	$10/55 \times \$90,000$	=	\$16,363.63
Year 2	$9/55 \times \$90,000$	=	\$14,727.27
Year 3	$8/55 \times \$90,000$	=	\$13,090.91

PROBLEM 3-12

$$\frac{\$60,000 - \$10,000}{25,000 \text{ hrs.}} = \$2.00 \text{ per hour}$$

Year 1	$5,000 \times \$2.00$	=	\$10,000
Year 2	$6,000 \times \$2.00$	=	\$12,000
Year 3	$4,000 \times \$2.00$	=	\$ 8,000

PROBLEM 3-13

- a. The straight line method will result in the lowest depreciation in the first year. With the depreciation being the lowest for straight line, the income will be the highest using the straight-line method. The straight-line method should be used for the financial statements. The declining-balance method will result in the maximum depreciation in the first year. With the depreciation being the highest, the income will be the lowest. The declining-balance method should be used for taxes.

$$\text{Straight-line } (\$50,000 - \$10,000)/5 = \$8,000$$

$$\begin{aligned} \text{Declining-balance method} &= 1/5 \times 2 \times \$50,000 \\ &= \$20,000 \end{aligned}$$

$$\begin{aligned} \text{Sum-of-the-years'-digits} &= 5/15 \times (\$50,000 - \$10,000) \\ &= \$13,333 \end{aligned}$$

- b. It is permissible to use different depreciation methods in financial statements than in tax returns.



## CASES

### CASE 3-1 BALANCE SHEET REVIEW

(This case provides an opportunity to review a moderately complicated balance sheet.)

- a.
  1. The financial statements of the parent and the subsidiary are consolidated for all majority-owned subsidiaries, unless control is temporary or does not rest with the majority owner.
  2. No.  
For one or more of the subsidiaries there is less than 100% ownership. The minority interest is on the balance sheet, prior to stockholders' equity.
  3. No.  
These affiliates have been accounted for using the equity method. (See footnote 5.)
  4. No.  
These affiliates are included in other assets. The assets of the affiliates are not included on the consolidated balance of Merck.
- b.
  1. The gross receivables cannot be determined from the published balance sheet. (Allowance for doubtful accounts is not disclosed.)
  2. \$3,374,100,000
- c.
  1. \$2,623,900,000
  2. This cannot be determined.  
"The majority of domestic inventories are valued at the lower of last-in, first-out (LIFO) cost or market. Remaining inventories are valued at the lower of first-in, first-out (FIFO) cost or market.

3. Inventories at December 31 consisted of:

	<u>(In Millions)</u>		<u>(In Percentage)</u>	
	<u>1998</u>	<u>1997</u>	<u>1998</u>	<u>1997</u>
Finished goods	\$1,701.2	\$1,230.6	64.8%	57.4%
Raw materials and work in process	851.6	849.7	32.5	39.6
Supplies	71.1	64.8	<u>2.7</u>	<u>3.0</u>
	\$2,623.9	\$2,145.1	<u>100.0%</u>	<u>100.0%</u>

Potentially this is a negative trend. Inventory has increased in finished goods.

- d. 1. \$7,843,800,000
2. \$11,886,600,000
3. Depreciation is provided over the estimated useful lives of the assets, principally using the straight-line method.
4. For tax purposes, accelerated methods are used.
- 5.

Buildings	\$3,664,000,000
Machinery, equipment and office furnishings	<u>6,211,700,000</u>
	<u>\$9,875,700,000</u>
Allowance for depreciation	<u>\$4,042,800,000</u>

Allowance is approximately 41% of the total for buildings, machinery, equipment and office furnishings. Thus, property, plant, and equipment is moderately old.

There is \$1,782,100,000 in construction in progress. Thus, there appears to be substantial additions in progress.

- e. \$10,228,500,000
- f. 1. \$8,287,200,000, net  
1,123,900,000, accumulated amortization  
\$9,411,100,000
2. \$8,287,200,000
- g. 1. Treasury stock -- A firm creates treasury stock when it repurchases its own stock and does not retire it. Since

treasury stock lowers the stock outstanding, it is subtracted from stockholders' equity.

2. 607,399,428 shares
- h. 1. 2,967,851,980 shares
2. 2,967,851,980 shares issued  
( 607,399,428) treasury shares  
2,360,452,552
- i. 1. \$31,853,400,000
- 2, \$ 6,068,800,000  
3,220,800,000  
6,057,000,000  
3,705,000,000  
\$19,051,600,000
3. \$12,801,800,000
4. Assets = Liabilities + Stockholders' Equity  
\$31,853,400,000 = \$19,051,600,000 + \$12,801,800,000



### CASE 3-2 INSIGHT ON LIABILITIES

(This case provides the opportunity to review the presentation of liabilities and shareholders' equity of Florida Rock Industries.)

- a.
  1. The financial statements of the parent and the subsidiary are consolidated for all majority-owned subsidiaries, unless control is temporary or does not rest with the majority owner. Such statements reflect an economic rather than a legal concept of the entity.
  2. Yes. There is no minority interest disclosed on the consolidated balance sheet.
- b. Deferred taxes are caused by using different accounting methods for tax and reporting purposes. Any situation where revenue or expense is recognized in the financial statements in a different time period than for the tax return will create deferred tax situations.
- c.
  1. This describes a long-term liability for a borrowing due in a period exceeding one year or operating cycle, whichever is longer.
  2. The current part of long-term debt is disclosed under current liabilities because it is due within one year or operating cycle, whichever is longer. Thus it is part of current liabilities.

### CASE 3-3 INSIGHT ON SHAREHOLDERS' EQUITY

(This case provides the opportunity to review shareholders' investment in some detail.)

- a.
  1. Shareholders' equity represents the residual ownership interest in the assets of an entity after deducting liabilities.
  2. Capital in excess of par value represents the amount that the original stock was sold in excess of the par value.
  3. Retained earnings represent the undistributed earnings of the corporation that is, the net income for all past periods minus the dividends that have been declared.

4. Treasury stock represents the firm's stock that has been issued and repurchased but not retired. Treasury stock at cost represents the cost of the treasury stock.
  5. Deferred ESOP expense represents expense related to the ESOP that has not been expensed.
- b. Determine the number of shares
1. Common stock issued at December 29, 2001.  
320,400,000
  2. Common stock authorized at December 29, 1001.  
1,000,000,000
- c. 1. Dollar amount of shareholders' equity at December 29, 2001.  
\$6,119,000,000
2. No  
Dollar amount of shareholders' equity represents the book amount. The market value represents the value based on the stock market price.

#### CASE 3-4 INSIGHTS ON ASSETS

(This is a moderately complicated case. The major emphasis is on assets.)

- a. The financial statements of the parent and the subsidiary are consolidated for all majority-owned subsidiaries, unless control is temporary or does not rest with the majority owner.
- b. \$94,124,000
- c. 1. \$406,639,000
2. \$152,943,000
3. Accumulated depreciation represents the total depreciation taken for all prior periods for the depreciable assets on hand as of the balance sheet date.
4. None.  
Land is not depreciated.
5. Total cost - December 31, 2001 (\$406,639,000-\$4,046,000)

Accumulated depreciation - December 31, 2001 (A) \$35,488,000  
(B) \$14,650,000

B ÷ A

$$\frac{\$253,696,000}{\$402,593,000} = 63.02\%$$

Based on the accumulated depreciation in relation to the cost it appears that the property, plant and equipment is relatively old as of December 31, 2001.

- d. 1. \$636,505,000
- 2. \$256,535,000
- e. The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

CASE 3-5 OUR PRINCIPAL ASSET IS OUR PEOPLE

- a. It would be very subjective to identify which payments relating to people would be considered an asset and which would be considered an expense. Also, if considered an asset, the subsequent using up would be difficult to determine. The legal implications likely also have a bearing on not considering people as an asset; but it should be noted that accountants use an economic definition of an asset.
- b. They are using a broad definition of an asset, recognizing the importance of people to the firm.

CASE 3-6 BRANDS ARE DEAD?

a. SFAC No. 6:

"Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events."

- b. As a practical matter brands would represent a valuable asset. Brands also appear to fall within the definition of an asset presented in SFAC No. 6.
- c. Brands appear to fall within the definition of an asset presented in SFAC No. 6. But in practice, generally accepted accounting principles in the United States do not recognize brands as an asset when internally generated. This apparent inconsistent position is likely rationalized by conservatism.
- d. A brand purchased would be recognized as an asset. This would be considered to be objective.

CASE 3-7 ADVERTISING - ASSET?

a. SFAC No. 6:

"Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events."

- b. To be conservative, advertising is not usually recognized as an asset in the United States. Identifying the future benefits of advertising is usually considered to be too subjective. Examples of advertising being presented as an asset can be found in United States accounting. When it is recognized as an asset, it may be presented under other assets and possibly disclosed in a footnote.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a review of key balance sheet data for the Boeing Company. The trend will change as Thomson Analytics is updated.

## Income Statement

### TO THE NET

1. a. \$19,400,000  
Equity earnings (losses) are the investor's proportionate share of the investee's earnings (losses).
- b. \$20,100,000  
If a firm consolidate subsidiaries not wholly owned, the total revenues and expenses of the subsidiaries are included with those of the parent. However, to determine the income that would accrue to the parent, it is necessary to deduct the portion of income that would belong to the minority shares.
2. a. Net Sales  
\$3,122,433,000 (2001)  
\$2,761,983,000 (2000)  
\$1,639,839,000 (1999)
- b. Loss from Operations  
\$412,257,000 (2001)  
\$863,880,000 (2000)  
\$605,755,000 (1999)
- c. Interest Expense  
\$139,232,000 (2001)  
\$130,921,000 (2000)  
\$ 84,566,000 (1999)
- d. Material increase in sales, but this has not resulted in operating profits. In addition to the operating losses there has been material interest expense.

## QUESTIONS

- 4- 1. Extraordinary items are events or transactions that are distinguished by their unusual nature and infrequency of occurrence. They might include casualty losses or losses from expropriation or prohibition. They must be shown separately, net of tax, in order that trend analysis can be made of income before extraordinary items.
- 4- 2. d, f
- 4- 3. Examples include sales of securities, write-down of inventories, disposal of a product line not qualifying as a segment, gain or loss from a lawsuit, etc. They are shown separately because of their materiality and the desire to achieve full disclosure. They are not given net-of-tax treatment because they are included in income before the income tax is deducted. Also, net-of-tax treatment would infer that these items are extraordinary.
- 4- 4. Under the equity method, equity in earnings of nonconsolidated subsidiaries is a problem in profitability analysis because the income recognized is not a cash inflow. The cash inflow is only the amount of the investor share of dividends declared and paid. Further, equity earnings do not come directly from the operations of the business in question, but rather from a subsidiary.
- 4- 5. It would appear that this is the disposal of a product line that is specifically separate from the dairy products line. The disposal of the vitamin line should be identified as discontinued operations and be presented after income from continuing operations on the income statement.
- 4- 6. Unusual or infrequent items relate to operations. Examples are write-downs of receivables and write-downs of inventory.
- 4- 7. In 2003, the cumulative effect of the new change would be presented on the income statement as a reduction, net of tax, after any extraordinary items and just before net income.

- 4- 8. The declaration of a cash dividend reduces retained earnings and increases current liabilities. The payment of a cash dividend reduces current liabilities and cash.
- 4- 9. First, a stock split is usually for a larger number of shares. Secondly, a stock dividend reduces retained earnings and increases paid-in capital. A stock split merely increases the shares and reduces the par value, leaving the capital stock account intact. Both require restatement of any per share items.
- 4-10. If a firm consolidates subsidiaries that are not wholly owned, the total revenues and expenses of the subsidiaries are included with those of the parent. To determine the income that would accrue to the parent, however, it is necessary to deduct the portion of income that would belong to the minority owners.
- 4-11. The statement of retained earnings summarizes the changes to retained earnings. Retained earnings represents the undistributed earnings of the corporation. The income statement net income is added to retained earnings. A loss is deducted from retained earnings.
- 4-12. 1. Appropriations as a result of a legal requirement.  
2. Appropriations as a result of a contractual agreement.  
3. Appropriations as a result of management discretion.
- Appropriations as a result of management discretion are not likely a detriment to the payment of a dividend.
- 4-13. The balance sheet shows the account balances as of a particular point in time. The income statement shows the revenues and expenses resulting from transactions for the period of time.
- 4-14. a. Minority share of earnings is an income statement item that represents the minority owners' share of consolidated earnings.
- b. Equity in earnings is the proportionate share of the earnings of the investor that relate to the investor's investment.



4-15. The two traditional formats for presenting the income statement are the multiple-step and single-step. The multiple-step is preferable for analysis because it provides intermediate profit figures that are useful in analysis.

	<u>2004</u>	<u>2003</u>	<u>2002</u>
4-16. Earnings per share	<u>\$1.40</u>	<u>\$2.00</u>	<u>\$1.60</u>

4-17. Accountants have not accepted the role of disclosing the firms capacity to make distributions to stockholders. Therefore, the firms capacity to make distributions to stockholders cannot be determined using published financial statements.

4-18. Management does not usually like to tie comprehensive income closely with the income statement because the items within accumulated other comprehensive income have the potential to be volatile.

PROBLEMS

PROBLEM 4-1

a. Decher Automotives  
Income Statement  
For the Year Ended December 31, 2003

Sales		\$1,000,000
Cost of sales		
Beginning inventory	\$ 650,000	
Purchases	<u>460,000</u>	
Merchandise available for sale	\$1,110,000	
Less: Ending inventory	<u>440,000</u>	
Cost of sales		<u>670,000</u>
Gross profit		330,000
Operating expense:		
Selling expenses	\$ 43,000	
Administrative expenses	<u>62,000</u>	<u>105,000</u>
Operating income		225,000
Other income:		
Dividend income		<u>10,000</u>
		235,000
Other expense:		
Interest expense		<u>20,000</u>
Income before taxes and extraordinary items		215,000
Income taxes		<u>100,000</u>
Income before extraordinary items		115,000
Extraordinary items: flood loss, net of tax		<u>(30,000)</u>
Net income		<u>\$ 85,000</u>

b. Earnings per share:		
Before extraordinary items		\$ 1.15
Extraordinary items (loss)		<u>(.30)</u>
Net income		<u>\$ .85</u>

c. Decher Automotives  
Income Statement  
For the Year Ended December 31, 2003

Revenue:		
Sales		\$1,000,000
Other income		<u>10,000</u>
Total revenue		<u>1,010,000</u>

Expenses:		
Cost of sales	\$670,000	
Operating expenses	105,000	
Interest expense	<u>20,000</u>	<u>795,000</u>
Income before taxes and extraordinary items		215,000
Income taxes		<u>100,000</u>
Income before extraordinary items		115,000
Extraordinary items, flood loss, net of tax		<u>30,000</u>
Net income		<u>\$85,000</u>

PROBLEM 4-2

Lesky Corporation  
Income Statement  
For the Year Ended December 31, 2003

Revenue from sales		\$362,000
Cost of products sold		<u>242,000</u>
Gross profit	120,000	Operating expenses:
Selling expenses	\$47,000	
Administrative and general expenses	<u>11,400</u>	<u>58,400</u>
Operating income		61,600
Other items:		
Other income:		
Rental income	\$1,000	
Interest income	<u>2,400</u>	3,400
Other expense:		
Interest expense		<u>(2,200)</u>
Income before tax		62,800
Federal and state income taxes		<u>20,300</u>
Net income		<u>\$42,500</u>

PROBLEM 4-3

CONSOLIDATED CAN  
Income Statement

***For the Year Ended December 31, 2003***

Sales	\$480,000
Cost of products sold	<u>410,000</u>
Gross profit	70,000
Selling and administrative expenses	<u>42,000</u>
Operating income	28,000
Other income	<u>1,600</u>
	29,600
Interest expense	<u>8,700</u>
Income before tax and extraordinary items	20,900
Income tax	<u>9,300</u>
Income before extraordinary items	11,600
Extraordinary gain, net of tax	<u>1,000</u>
Net income	12,600
Retained earnings 1/1	<u>270,000</u>
	282,600
Less: dividends	<u>3,000</u>
Retained earnings	<u>\$279,600</u>

PROBLEM 4-4

a. Taperline Corporation  
Income Statement  
For the Year Ended December 31, 2003

Revenues:		
Sales		\$670,000
Rental income		<u>3,600</u>
Gain on the sale of fixed assets		<u>3,000</u>
Total revenues		676,600
Expenses:		
Cost of sales	\$300,000	
Selling expenses	97,000	
General and administrative expenses	110,000	
Depreciation	10,000	
Interest expense	<u>1,900</u>	<u>518,900</u>
Income before extraordinary items and taxes on income		157,700
Income tax		<u>63,080</u>
Earnings before extraordinary item		94,620
Casualty loss	\$ 30,000	
Less: Tax saving	<u>12,000</u>	<u>18,000</u>

Net income	<u>\$ 76,620</u>
	Earnings per

share on common stock:

(30,000 shares outstanding)	
Income before extraordinary items	\$3.15
Net income	\$2.55

b.

Taperline Corporation  
Income Statement  
For the Year Ended December 31, 2003

Sales		\$670,000
Cost of sales		<u>300,000</u>
Gross profit		370,000
Operating expenses		
Selling expenses	\$ 97,000	
General and administrative expenses	110,000	
Depreciation	<u>10,000</u>	<u>217,000</u>
Operating income		153,000
Other revenue:		
Rental income	\$ 3,600	
Gain on the sale of fixed assets	<u>3,000</u>	<u>6,600</u>
		159,600
Other expenses:		
Interest expense		<u>1,900</u>
Income before extraordinary items and taxes on income		157,700
Income tax		<u>63,080</u>
Income before extraordinary item		94,620
Casualty loss	\$ 30,000	
Less: Tax saving	<u>12,000</u>	<u>18,000</u>
Net income		<u>\$ 76,620</u>

Earnings per share on common stock:	
(30,000 shares outstanding)	
Income before extraordinary items	\$3.15
Net income	\$2.55

PROBLEM 4-5

$$\text{Tax Rate} = \frac{\text{Taxes}}{\text{Income Before Taxes}} = \frac{\$20,000}{\$40,000} = 50\%$$

Provision for unusual write-offs	\$50,000
Less: tax effects (50% x \$50,000)	<u>25,000</u>
Net item	<u>\$25,000</u>
<u>Extraordinary charge, net of tax of</u> \$10,000	<u>\$50,000</u>
Net earnings (loss)	<u>(30,000)</u>
<u>Net earnings with nonrecurring items</u> removed ([\$30,000)+\$25,000+\$50,000]	<u>\$45,000</u>

PROBLEM 4-6

Sales		\$4,000,000
Cost of sales		<u>2,000,000</u>
Gross profit		2,000,000
Operating expenses:		
Administrative expenses	\$400,000 <sup>1</sup>	
Selling expense	<u>600,000<sup>2</sup></u>	<u>1,000,000</u>
Operating income		1,000,000
Interest expense		<u>110,000<sup>3</sup></u>
Earnings before tax		890,000
Income tax (48%)		<u>427,200</u>
Net income		<u>\$ 462,800</u>
Earnings per share	<u>\$9.26</u>	

<sup>1</sup>Administrative expenses are 20% of \$2,000,000. This is 10% of sales. Therefore, sales are \$4,000,000.

<sup>2</sup>150% times \$400,000

<sup>3</sup>\$1,000,000 x 11% = \$110,000

PROBLEM 4-7

Total revenues from regular operations	\$832,000
Total expenses from regular operations	<u>776,000</u>
Income from operations	56,000
Extraordinary gain, net of tax	<u>30,000</u>
Net income	\$ 86,000



Earnings per share:		
Before extraordinary items	\$56,000/10,000	= \$5.60
Extraordinary gain	\$30,000/10,000	= \$3.00
Net income	\$86,000/10,000	= \$8.60

PROBLEM 4-8

Victor, Inc.  
 Partial Income Statement  
 For the Year Ended December 31, 2003

Income from continuing operations, unadjusted (a)		\$400,000
Adjustments:		
Settlement of lawsuit		(10,000)
Gain on sale of securities		<u>30,000</u>
Income from continuing operations, adjusted, before tax		420,000
Income tax (30%)		<u>126,000</u>
Income from continuing operations		294,000
Discontinued operations:		
Loss on operations of consumer products division	\$ 60,000	
Loss from disposal of assets	<u>90,000</u>	
	150,000	
Tax effect (30%)	<u>45,000</u>	
Loss from discontinued operations		<u>105,000</u>
Income before extraordinary item		189,000
Extraordinary item:		
Loss from hailstorm	\$ 20,000	
Tax effect (30%)	<u>6,000</u>	<u>14,000</u>
Income before cumulative change in accounting principle		175,000
Cumulative change in accounting principle from average cost to FIFO	\$ 30,000	
Tax effect (30%)	<u>9,000</u>	
Increase in income from change in accounting principle		<u>21,000</u>
Net income		<u><u>\$196,000</u></u>

Earnings per share:		
Income from continuing operations		\$ 2.94
Discontinued operations		( 1.05)
Extraordinary loss		( .14)
Cumulative change in accounting principle		<u>.21</u>
Net income		<u><u>\$ 1.96</u></u>



PROBLEM 4-9

- |    |   |    |   |    |   |
|----|---|----|---|----|---|
| a. | A | h. | B | p. | A |
| b. | A | i. | C | q. | A |
| c. | A | j. | B | r. | A |
| d. | B | k. | B | s. | A |
| e. | B | l. | B | t. | B |
| f. | A | m. | A | u. | B |
| g. | A | n. | B | v. | A |
|    |   | o. | B |    |   |

PROBLEM 4-10

- |    |   |    |    |    |   |
|----|---|----|----|----|---|
| a. | C | h. | i. | o. | A |
| b. | B | i. | B  | p. | B |
| c. | A | j. | A  | i. | A |
| d. | B | k. | i. | r. | B |
| e. | A | l. | A  | s. | B |
| f. | B | m. | B  |    |   |
| g. | C | n. | B  |    |   |

PROBLEM 4-11

- |    |                                     |                |
|----|-------------------------------------|----------------|
| a. | Net income                          | \$ 20,000      |
|    | Plus: Extraordinary loss from flood | <u>120,000</u> |
|    |                                     | \$140,000      |
| b. | \$60,000                            |                |
| c. | \$60,000                            |                |
| d. | \$40,000                            |                |
| e. | $\$100,000 - \$50,000 = \$50,000$   |                |

PROBLEM 4-12

- |    |                            |           |
|----|----------------------------|-----------|
| a. | Net income from operations | \$146,000 |
| b. | \$20,000 Loss              |           |
| c. | \$94,000                   |           |
|    | -30,000                    |           |
|    | -50,000                    |           |
|    | <u>+25,000</u>             |           |
|    | \$39,000                   |           |

PROBLEM 4-13

a. 1. Receipt of cash:

Sales, 210,000 ounces x \$300 = \$63,000,000

Cost of goods sold (1),  
210,000 ounces x \$250 = 52,500,000  
Gross profit \$10,500,000

Selling expenses 2,000,000  
Administrative expenses 1,250,000  
Profit before taxes 7,250,000  
Taxes 3,625,000  
Net income \$ 3,625,000

(1)  $\frac{\$50,000,000}{200,000} = \$250 \text{ ounce}$

2. Point of sale:

Sales, 230,000 ounces x \$300 = \$69,000,000

Cost of goods sold,  
230,000 ounces x \$250 = 57,500,000  
Gross profit \$11,500,000

Selling expenses 2,000,000  
Administrative expenses 1,250,000  
Profit before taxes 8,250,000  
Taxes 4,125,000  
Net income \$ 4,125,000

3. End of production:

Sales, 200,000 ounces x \$300 = \$60,000,000

Cost of goods sold,  
200,000 ounces x \$250 = 50,000,000  
Gross profit \$10,000,000

**Selling expenses 2,000,000**  
Administrative expenses 1,250,000  
Profit before taxes 6,750,000  
Taxes 3,375,000  
Net income \$ 3,375,000

4. Based on delivery:

Sales, 190,000 ounces x \$300 = \$57,000,000

Cost of goods sold,	
190,000 ounces x \$250	<u>47,500,000</u>
Gross profit	\$ 9,500,000
Selling expenses	2,000,000
Administrative expenses	<u>1,250,000</u>
Profit before taxes	6,250,000
Taxes	<u>3,125,000</u>
Net income	<u><u>\$ 3,125,000</u></u>

b. 1. Receipt of cash

This method should only be used when the prospects of collection are especially doubtful at the time of sale.

2. Point of sale

In practice, the point of realization usually is the point of sale. At this point, the earnings process is virtually complete and the exchange value can be determined.

3. End of production

The realization of revenue at the completion of the production process is acceptable when the price of the item is known and there is a ready market.

This method should receive strong consideration in this case. The question that needs to be resolved is how fixed is the price of uranium. Since the price has gone from \$150 per ounce in 1971 to \$300 per ounce in 2003, the price does not appear to be fixed.

4. Based on delivery

This is not usually an acceptable realization point. Delivery is an objective guideline, but delivery does not usually represent a significant event.

PROBLEM 4-14

- a. No. This loss does not relate to the cost of goods sold. It is likely an extraordinary loss meeting the criteria of being of unusual in nature and infrequent in occurrence.
- b. No. Land is carried at historical cost.
- c. Yes. The cost of machinery and equipment should be charged to a fixed asset account.
- d. No. Depreciation should be recognized over the period of use.
- e. Yes. Some loss to employees would be expected and it is immaterial in relation to the cost of goods sold.
- f. No. This car should not be recorded on the company's books, unless it is to be used for company business.

**PROBLEM 4-15**

- a. Comprehensive income will tend to be more volatile than net income because the items within other comprehensive income tend to be more volatile than net income.
- b. The standard directs that earnings per share be computed based on net income.
- c. 

\$30,000
5,000
<u>3,000</u>
<u>\$38,000</u>
- d. No.  
These items could net out as an addition to net income, or a deduction from net income.

CASES

CASE 4-1 UNDER THE ARCH

(This case provides the opportunity to review the statements of consolidated earnings of McDonald's Corporation.)

- a. Yes.  
The statement does not present minority interest in net income of subsidiaries.
- b. No.  
Using the equity method, income related to unconsolidated subsidiaries would be booked as income from unconsolidated subsidiaries (equity method).

c.

Tax rate		2001	2000	1999
Provision for income taxes (A)		693.1	905.0	936.2
Income before provision for				
Income taxes (B)		2,329.7	2,882.3	2,884.1
	A÷ B	29.75%	31.40%	32.46%
Special charge global				
Change initiatives removed				
1 - tax rate				
1 - 29.75 = 70.25				
(70.25) (200.0)	+	\$140.5		
Net income		1,636.6	<u>1,977.3</u>	<u>1,947.9</u>
		<u>\$1,777.1</u>	<u>\$1,977.3</u>	<u>\$1,947.9</u>

CASE 4-2 HIDDEN TREASURE

(This case provides the opportunity to review the consolidated statements of Denbury Resources for the year ended December 31, 2001, 2000, and 1999.)

- a. Financial statements of legally separate entities may be issued to show income as it would appear if the companies were a single entity (consolidated). Such statements reflect an economic, rather than a legal, concept of the entity. This is the usual case when the parent company has control.
- b. No.  
Minority income was not reported.

c. Tax rate		2001
Current income taxes		640
Deferred income taxes		<u>24,184</u>
Total tax	(A)	24,824
Income before income taxes	(B)	81,374
Tax rate	A ÷ B	30.51%
1 - 30.51 = 69.49		
(69.49) (25,164		\$17,486.46
Net income		<u>56,550.00</u>
Adjusted income		<u>\$74,036.46</u>

*CASE 4-3 TAKE MY PICTURE*

(This case provides the opportunity to review the consolidated statements of Eastman Kodak Company for the year ended December 31, 2001, 2000, and 1999).

- a. Financial statements of legally separate entities may be issued to show income as it would appear if the companies were a single entity (consolidated). Such statements reflect an economic, rather than a legal, concept of the entity. This is the usual case when the parent company has control.
- b. Yes.  
Minority interest not reported.

c.	Tax rate		2001
	Current income taxes	(A)	\$ 32
	Income before income taxes	(B)	108
	Tax rate A÷B		29.63%
	1 - 29.63 = 70.37		
	(70.37) (6.59) =		\$463.74
	Net earnings		<u>76.00</u>
			<u>\$539.47</u>

#### CASE 4-4 THE BIG ORDER

- United Airlines should record the purchase of these planes when a plane is delivered.
- In general, revenue recognition is being made at the completion of production. Under summary of significant accounting policies in the notes to the 1990 financial statements, Boeing describes its revenue recognition with this statement.

"Sales under commercial programs and U.S. Government and foreign military fixed-price type contracts are generally recorded as deliveries are made."

- The case indicates that the order was equally split between firm orders and options. This would lead us to believe that the firm orders were "firm" and that United Airlines would be committed to accept delivery of these planes.

In reality, the orders may not be firm in the sense that Boeing may be willing to negotiate a reduction if United Airlines were in financial trouble or if the need for the planes had substantially declines.

In the 1990 annual report of Boeing, in the section Management's Discussion and Analysis of Financial Condition And Results of Operations, a section on backlog had this comment:

"In evaluating the Company's firm backlog for commercial customers, certain risk factors should be considered. Approximately 55% of the firm backlog for commercial airplanes is scheduled to be delivered beyond 1992. An extended economic downturn could result in less than currently anticipated airline equipment requirements resulting in requests to negotiate the rescheduling, or possible cancellation, of firms orders."

- d. 1. There would not necessarily be disclosure in the financial statements and footnotes. This was not a transaction that was recorded.

There was disclosure of credit agreements in A footnote "long-term debt." This footnote did not specifically refer to this order.

- 2. Disclosure would likely be found in the president's letter and the section Management's Discussion and analysis. In fact extensive disclosure was located in these sections.
- e. 1. There would not necessarily be disclosure in the financial statements and footnotes. This was not a transaction that was recorded. A review of the financial statements and footnotes did not turn up disclosure.
- 2. Disclosure would likely be found in the president's letter and the section Management's Discussion and Analysis. In fact, extensive disclosure relating to orders was found. Some of this disclosure specifically commented on the United Airlines order, while some was general on orders.

#### CASE 4-5 CELTICS

(This case provides the opportunity to review the statements o income of the Boston Celtics.)

- a. Franchise and other intangible assets were recognized as intangible assets on the balance sheet.
- b. No.  
Since these operations were discontinued they would not be included in projecting the future.
- c. Apparently there was a new contract with players that called for substantial increases.
- d. Revenues from ticket sales and television and radio broadcast rights fee increased substantially between 1997 and 1998.
- e. Much of the income in 1996 came from discontinued operations. The board would typically not want to consider



the income from discontinued operations when setting the distribution.

CASE 4-6 ALWAYS LOW PRICES

(This case provides the opportunity to review the consolidated statements of income for Wal-Mart for the years 2002, 2001, and 2000.)

a. Minority Interest

If a firm consolidates subsidiaries not wholly owned, the total revenues and expenses of the subsidiaries are included with those of the parent. However, to determine the income that would accrue to the parent it is necessary to deduct the portion of income that would belong to the minority owners. This is labeled "minority share of earnings" or "minority interest."

b. Cumulative effect of accounting change

Some changes in accounting principles do not require retroactive adjustments to reflect the adoption of a new accounting principle. The reporting guide line directs that the income effect of the change on prior years be reported net of tax as a cumulative effect of a change in accounting principle on the income statement in the year of change.

c. By removing cumulative effect of accounting change in 2000 will result in a consistent basis.

	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net income	\$6,671,000,000	\$6,295,000,000	\$5,575,000,000

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a review of key income statement data for the Boeing Company. It also provides for a discussion of equity earnings. The trend will change as Thomson Analytics is updated.

# Chapter 5

## Basics of Analysis

### *To The Net*

1. Novel  
Partial Consolidated Statement of Operations  
**Horizontal Common-Size**

**Percent)**  
**Fiscal Year Ended**

---

<b>October 31</b>	<b>October 31</b>	<b>October 31</b>
2001	2000	1999

<b>Net sales</b>	<b>81.7</b>	91.3	100.0
Cost of sales	110.1	109.9	100.0
Gross profit	73.0	85.6	100.0
Operating expenses		114.0	100.0
Sales and marketing	102.2	97.4	100.0
Product development	81.9	113.4	100.0
General and administrative	140.3	N/A	--0--
Restructuring charges	N/A	115.2	100.0
Total operating expenses	110.8		

**Novell**  
**Partial Consolidated Statements of Operations**  
**Vertical Common-Size**

	Fiscal Year Ended		
	October 31	October 31	October 31
	2001	2000	1999
		100.0	100.0
	100.0	<u>28.2</u>	<u>23.1</u>
<b>Net sales</b>	<u>31.5</u>	71.8	76.6
Cost of sales	68.5		
Gross profit		42.6	34.1
Operating expenses	42.7	19.6	18.4
Sales and marketing	18.4	8.2	6.6
Product development	11.3	<u>4.1</u>	<u>--</u>
General and administrative	<u>7.7</u>	74.5	59.1
Restructuring charges	80.1		
Total operating expenses			

**Comments**

**A material decrease in revenue while cost of sales increased, resulting in a material decrease in gross profit.**

**Operating expenses were not reasonably controlled except for product development.**

2.

**Amazon**

	<b>(In thousands)</b>		
	<b>Years Ended December 31</b>		
	<b>2001</b>	<b>2000</b>	<b>1999</b>
Net sales			
Loss from operations			
Interest expense	<b>\$3,122,433</b>	<b>\$2,761,983</b>	<b>\$1,639,839</b>
	\$ 412,257	\$ 863,880	\$ 605,755
	\$ 139,232	\$ 130,921	\$ 84,566

Comment

**Material increase in sales**

**Loss from operations even with the material increase in sales.**



**Material increase in interest expense (note that interest expense was recognized after loss from operations.)**

**3.**

**Kroger**

**Consolidated Statement of Income**

**Horizontal Common Size Analysis with Change in Dollars**

**(In millions)**

			<b>Increase (Decrease)</b>		
	<b>2001</b>	<b>2000</b>			
	<u>52 weeks</u>	<u>53 weeks</u>	<b>Dollars</b>		<b>Percent</b>
					102.2
Sales	\$50,098	\$49,000	\$1,098		
Merchandise costs, including advertising, warehousing and transportation	<u>36,398</u>	<u>35,804</u>	<u>594</u>		103.8
Gross profit	13,700	13,196	504		103.6
Operating, general and administrative	9,483	9,152	331		100.5
Rent	650	647	3		107.3
Depreciation and amortization	973	907	66		102.0
Goodwill amortization	103	101	2		47.6
Asset impairment changes	91	191	(100)		N/A
Restructuring charges	37	--	37		26.7
Merger related costs	<u>4</u>	<u>15</u>	<u>(11)</u>		108.1
Operating profit	<u>\$2,359</u>	<u>\$2,183</u>	<u>\$ 176</u>		

## QUESTIONS

- 5- 1. A ratio is a fraction comparing two numbers. Ratios make the comparisons in relative, rather than absolute, terms, which helps alleviate the problem of size difference.
- 5- 2. a. Liquidity is the ability to meet current obligations. Short-term creditors such as banks or suppliers would be particularly interested in these ratios.
- b. Borrowing capacity measures the protection of long-term creditors. Long-term bond holders would be particularly interested.
- c. Profitability means earning ability. Investors would be particularly interested.
- 5- 3. Comparisons of historical data, industry average, earnings of competitors, etc.
- 5- 4. An absolute change would be  $\pm X$  dollars; a percentage change would be  $\pm X$  percent of the base. Percentage changes usually give better measures because they recognize the difference in the size of the base.
- 5- 5. Horizontal analysis expresses an item in relation to that same item for a previous base year. This analysis measures over time.

### Example

In 2003, sales were \$750,000; in 2000, they were \$500,000. Horizontal analysis shows 2003 sales as 150% of those in 2000.

Vertical analysis compares one item with another base item for that same year.

### Example

In 2003, selling expenses were \$75,000 and sales were \$750,000. Vertical analysis would show selling expenses as 10% of 2003 sales.

- 5- 6. Trend analysis involves comparing the past to the present. It can be used both for ratios and absolute figures.

5- 7. When comparing two firms of different size, relative figures are most meaningful. These include ratios and common-size analysis. The relative amounts of sales, assets, profits, or market share help evaluate relative size.

5- 8. While managers make great use of financial reports, investors, creditors, employers, suppliers, and consumers also use financial reports.

5- 9. Managers analyze data to study profitability and the overall financial position of the firm. Investors study profitability and the chance to earn on their investment. Creditors study the ability of the firm to handle debt.

5-10. a. Walgreen Co.

Property and equipment is the single largest asset followed by merchandise inventory. These would normally be very large assets for a merchandising firm.

The Interpublic Group of Companies

Accounts receivable represents the largest asset. This seems reasonable since, there is no inventory and a somewhat limited investment in fixed assets. This would be typical of this type of firm.

Cooper Tire & Rubber Company

The largest asset category is property, plant and equipment. This would be typical of a manufacturing firm.

b. Cooper Tire & Rubber Company

It would not be unusual that a manufacturing firm has a large amount in current assets in relation to current liabilities because of receivables and inventory.

5.11. A manufacturing firm will have raw materials, work in process, finished goods, and supplies. A retail firm will only have finished goods and supplies. It will not have raw materials and work in process.

5-12. Some types of products must be processed and immediately packaged for sale. They cannot be held in the processing state. Each night, all raw materials must be converted to finished goods. Cosmetics, such as nail polish, would dry up overnight. Foods might spoil. They, therefore, cannot be left in a semi-finished state.

5-13. Median 10.5%; upper quartile 13%; lower quartile 9.3%.

5-14. Reference Book of Corporate Managements

5-15. a. Eleven. (Not including zero assets.)

b. Manufacturing, wholesaling, construction, mining, utilities, financial institutions, insurance, and real estate.

5-16. a. Yes. The Department of Commerce Financial Reports includes industry sales. We could relate the sales of the firm in question to the total industry amount.

b. Yes. The Department of Commercial Financial Report includes total assets for the total industry. We could relate the total assets of the firm in question to the total in the industry.

5-17. a. The SIC is the Standard Industrial Classification. It was developed for use in the classification of establishments by type of activity in which they are engaged.

Determining a company's SIC is a good starting point in your search of a company, industry, or product. Many library sources use the SIC number as a method of classification. Thus, knowing a company's SIC will be necessary in order to use some library sources.

b. The North American Industry Classification system (NAICS) was created jointly by the United States, Canada, and Mexico. NAICS provides enhanced industry comparability among the three NAFTA trading partners.

NAIS divides the economy into twenty sectors. Industries within these sectors are grouped according to the production criterion. Four sectors are

largely goods producing and sixteen are entirely services-producing industries.

- 5-18. Standard & Poor's Register of Corporations, Directors and Executives, Volume 3, Section 5, lists the officer deaths that have been reported to the publisher
- 5-19. Standard & Poor's Analyst's Handbook.
- 5-20. Value Line Investment Survey.

- 5-21. The Securities Owner's Stock Guide.
- 5-22. The F & S Index of Corporations and Industries includes a comprehensive index to articles on a corporation.
- 5-23. A weekly newspaper, The Wall Street Transcript, provides access to corporate management presentations to financial analysts.
- 5-24. The Standard & Poor's Register of Corporations, Directors and Executives, Volume 2, contains information on principal business affiliations of officers.
- 5-25. 1. Standard & Poor's Industry Survey  
2. Value Line Investment Survey
- 5-26. The Wall Street Transcript contains brokerage house assessment reports.

PROBLEMS

PROBLEM 5-1

a.

Walgreen Co.  
Vertical Common-Size Balance Sheet  
August 31, 2001 and 2000

	(In Percentage)	
	August 31 2001	August 31 2000
Assets		
Current Assets	.2	.2
Cash and cash equivalents	9.0	8.7
Accounts receivable, net	39.4	39.8
Inventories	<u>1.1</u>	<u>1.3</u>
Other current assets	<u>49.7</u>	<u>50.0</u>
Total current assets		
Non-Current Assets		
Property and equipment, at cost, less accumulated depreciation and amortization	49.2	48.3
Other non-current assets	<u>1.1</u>	<u>1.8</u>
Total assets	<u>100.0</u>	<u>100.0</u>
Liabilities and Shareholders' Equity		
Current liabilities		
Short-term borrowings	5.0	--
Trade accounts payable	17.5	19.2
Accrued expenses and other liabilities	10.6	11.9
Income taxes	<u>1.0</u>	<u>1.3</u>
Total Current liabilities	<u>34.1</u>	<u>32.4</u>
Non-Current Liabilities		
Deferred income taxes	1.6	1.4
Other non-current liabilities	<u>5.4</u>	<u>6.5</u>
Total non-current liabilities	<u>7.0</u>	<u>7.9</u>
Shareholders' Equity		
Preferred stock	--	--
Common stock	.9	1.1
Paid-in capital	6.8	5.2
Retained earnings	<u>51.3</u>	<u>53.3</u>
Total shareholders' equity	<u>58.9</u>	<u>59.6</u>
Total liabilities and shareholders' equity	<u>100.0</u>	<u>100.0</u>

Problem 5-1 continued

b.

Walgreen Co.  
Horizontal Common-Size  
August 31, 2001 and 2000

	(In Percentage)	
	August 31 2001	August 31 2000
<b>Assets</b>		
<b>Current Assets</b>		
Cash and cash equivalents	132.0	100.0
Accounts receivable, net	129.9	100.0
Inventories	123.0	100.0
Other current assets	104.7	100.0
Total current assets	123.7	100.0
<b>Non-Current Assets</b>		
Property and equipment, at cost, less accumulated depreciation and amortization	126.8	100.0
Other non-current assets	75.4	100.0
Total assets	<u>124.4</u>	<u>100.0</u>
<b>Liabilities and Shareholders' Equity</b>		
<b>Current Liabilities</b>		
Short-term borrowings	N/A	--
Trade accounts payable	113.4	100.0
Accrued expenses and other liabilities	110.6	100.0
Income taxes	94.1	100.0
Total current liabilities	130.7	100.0
<b>Non-Current Liabilities</b>		
Deferred income taxes	134.8	100.0
Other non-current liabilities	102.9	100.0
Total non-current liabilities	108.7	100.0
<b>Shareholder's Equity</b>		
Preferred stock	--	--
Common stock	100.8	100.0
Paid-in capital	162.5	100.0
Retained earnings	119.6	100.0
Total shareholders' equity	123.0	100.0
Total liabilities and shareholders' equity	<u>124.4</u>	<u>100.0</u>



**Problem 5-1 continued**

**c. Vertical Common-Size**

## **Assets**

**No significant changes in assets**

## **Liabilities**

**Significant increase in short-term borrowings (from zero to 5.0% of total assets)**

## **Shareholders' Equity**

**Substantial increase in paid-in capital**

## **Horizontal Common-Size**

### **Assets**

**Material increase in cash and cash equivalents**

**Material increase in accounts receivable, net**

**Material increase in inventories**

**Material increase in total current assets**

**Material increase in property and equipment**

**Material decrease in other non-current assets**

**Material increase in total assets**

### **Liabilities**

**Material increase in trade accounts payable**

**Material increase in accrued expenses and other**

**liabilities**

**Material increase in deferred income taxes**

**Substantial increase in total non-current liabilities**

**Shareholders' Equity**

**Material increase in paid-in capital**

**Material increase in retained earnings**

**PROBLEM 5-2**

**a.**

**Walgreen Co. and Subsidiaries  
Vertical Common-Size Analysis  
Consolidated Statements of Earnings**

**2001**

**2000**

**1999**

Net sales	100.0	100.0	100.0
Cost of sales	73.3	72.9	72.8
Selling, occupancy and administration	21.0	21.3	21.6
	94.3	94.2	94.3
Total costs and deductions	.0	.0	.0
Interest income	.0	.0	.0
Interest expense	.0	.0	--
Other income	(.1)	(.2)	(.1)
Total other (income) expense	5.8	6.0	5.8
Earnings before income tax provision	2.2	2.3	2.3
Income tax provision	3.6	3.7	3.5
Net earnings			

**b.**

**Walgreen Co. and Subsidiaries**  
**Horizontal Common-Size Analysis**  
**Consolidated Statements of Earnings**

	<b>2001</b>	<b>2000</b>	<b>1999</b>
<b>Net sales</b>	138.0	118.9	100.0
Cost of sales	139.1	119.2	100.0
Selling, occupancy and administration	134.6	117.5	100.0
Total costs and deductions	138.0	118.8	100.0
Interest income	43.9	49.6	100.0
Interest expense	775.0	100.0	100.0
Other income	N/A	N/A	100.0
Total other (income) expense	214.0	343.9	100.0
Earnings before income tax	138.5	123.0	100.0
provision	133.2	120.6	100.0
Income tax provision	141.9	124.5	100.0
Net earnings			

**c. Vertical common-size analysis**

**An increase of .5% for cost of sales was offset by a decrease of .6% in selling, occupancy and administration.**

**Horizontal Common-size analysis**

- **Selling, occupancy and administration increased somewhat less than net sales.**
- **Material decrease in interest income.**
- **Material increase in interest expense.**
- **Material increase in total other (income) expense.**
- **Income tax provision increased somewhat less than net sales.**
- **Net earnings increased somewhat more than net sales.**



## PROBLEM 5-3

### a. The Interpublic Group of Companies

#### Vertical Common-Size

#### Consolidated Balance Sheet

	December 31	
	2001	2000
<b>Assets</b>		
Current assets		6.8
Cash and cash equivalents	8.1	46.4
Accounts receivable, net	41.5	3.5
Expenditures billable to clients	2.9	--
Deferred taxes on income	.7	<u>2.2</u>
Prepaid expenses and other current assets	<u>2.9</u>	<u>59.0</u>
Total current assets	<u>56.2</u>	
		1.4
Fixed assets, at cost	1.4	8.9
Land and buildings	9.4	<u>3.5</u>
Furniture and equipment	<u>4.0</u>	13.8
Leasehold improvements	14.8	<u>(7.1)</u>
Total gross fixed assets	<u>(7.5)</u>	<u>6.7</u>
Less: accumulated depreciation	<u>7.4</u>	
Total fixed assets		1.4
	1.4	3.1
Other assets	4.3	4.3
Investment in unconsolidated affiliates	3.8	<u>25.5</u>
Deferred taxes on income	<u>27.0</u>	<u>34.3</u>
Other assets and miscellaneous investments	<u>36.5</u>	<u>100.0</u>
Intangible assets, net	<u>100.0</u>	
Total other assets		
Total assets		

### Problem 5-3 a. continued

	December 31	
	2001	2000
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	39.3	46.5
Accrued expenses	11.4	8.8
Accrued income taxes	.9	1.7
Dividends payable	.3	.2
Short-term bank borrowings	3.6	3.9
Current portion of long-term debt	<u>.3</u>	<u>.5</u>
Total current liabilities	55.9	61.7
Non-current liabilities		
Long-term debt	11.8	8.1
Convertible subordinated notes	4.8	4.3
Zero-coupon convertible senior notes	5.0	--
Deferred compensation	3.3	3.8
Accrued postretirement benefits	.5	.4
Other non-current liabilities	.9	.9
Minority interests in consolidated subsidiaries	<u>.8</u>	<u>.8</u>
Total non-current liabilities	26.9	18.3
Stockholders' equity	--	--
Preferred stock	.3	.3
Common stock	15.5	12.3
Additional paid-in capital	8.8	13.5
Retained earnings	<u>&lt;3.9&gt;</u>	<u>&lt;3.3&gt;</u>
Accumulated other comprehensive loss, net of tax	20.7	22.7
	<2.5>	<1.6>
Less:	<u>&lt;1.07&gt;</u>	<u>&lt;1.1&gt;</u>
Treasury stock, at cost	17.2	20.1
Unamortized deferred compensation	100.0	100.0
Total stockholders' equity		
Total liabilities and stockholders' equity		



**Problem 5-3 continued**

- b.           The Interpublic Group of Companies**
  - Horizontal Common-Size**
  - Consolidated Balance Sheet**

	<b>December 31</b>	
	<b>2001</b>	<b>2000</b>
<b>Assets</b>		
Current assets		
Cash and cash equivalents	110.7	100.0
Accounts receivable, net	83.3	100.0
Expenditures billable to clients	N/A	<u>—</u>
Deferred taxes on income	76.0	100.0
Prepaid expenses and other current assets	88.6	100.0
Total current assets	92.5	100.0
Fixed assets, at cost	98.4	100.0
Land and buildings	107.9	100.0
Furniture and equipment	100.2	100.0
Leasehold improvements	97.6	100.0
Total gross fixed assets	102.9	100.0
Less: accumulated depreciation		
Total fixed assets	87.3	100.0
Other assets	129.6	100.0
Investment in unconsolidated affiliates	82.3	100.0
	<u>98.5</u>	100.0
Deferred taxes on income	97.0	100.0
Other assets and miscellaneous investments	93.1	100.0
Intangible assets, net		
Total other assets		
Total assets		

**Problem 5-3 b. continued**

	<b>December 31</b>	
	<b>2001</b>	<b>2000</b>
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	78.7	100.0
Accrued expenses	121.7	100.0
Accrued income taxes	49.0	100.0
Dividends payable	122.4	100.0
Short-term bank borrowings	86.5	100.0
Current portion of long-term debt	52.8	100.0
Total current liabilities	84.4	100.0
Non-current liabilities		
Long-term debt	135.9	100.0
Convertible subordinated notes	102.9	100.0
Zero-coupon convertible senior notes	N/A	--
Deferred compensation	81.1	100.0
Accrued postretirement benefits	98.6	100.0
Other non-current liabilities	95.1	100.0
Minority interests in consolidated subsidiaries	88.8	100.0
	137.4	100.0
Total non-current liabilities		
Stockholders' equity	--	--
Preferred stock	102.4	100.0
Common stock	117.9	100.0
Additional paid-in capital	60.6	100.0
Retained earnings	109.7	100.0
Accumulated other comprehensive loss, net of tax		
	149.0	100.0
Less:	87.0	100.0
Treasury stock, at cost	79.7	100.0
Unamortized deferred compensation	93.1	100.0
Total stockholders' equity		
Total liabilities and stockholders' equity		



## Problem 5-3 continued

### c. Vertical Common-Size

#### Assets

- Significant decrease in accounts receivable
- Significant increase in total fixed assets
- Significant increase in deferred taxes on income

#### Liabilities and stockholders' equity

- Significant decrease in accounts payable
- Significant decrease in total current liabilities
- Significant increase in long-term debt
- Significant increase in zero-coupon convertible senior notes
- Significant increase in additional paid-in capital
- Significant decrease in total stockholders' equity

### Horizontal Common-Size

#### Assets

- Significant increase in cash and cash equivalents
- Significant increase in deferred taxes on income
- Significant decrease in accounts receivable, net
- Significant decrease in prepaid expenses and other current assets
- Significant decrease in other assets and miscellaneous investments

#### Liabilities and stockholders' equity

- Significant changes in current liabilities
- Significant decreases in accounts payable, accrued income taxes, short-term bank borrowings, and current portion of long-term debt
- Significant increase in accrued expenses and dividends payable
- Significant changes in non-current liabilities
- Total non-current liabilities increased significantly (the major increase was the material increase in long-term debt)
- Significant decreases in deferred compensation
- Significant decrease in minority interests in consolidates subsidiaries
- Significant changes in stockholders' equity with total stockholders' equity decreasing a significant amount. (The major decrease was in retained earnings. Additional paid-in capital increase significantly. Treasury stock increased significantly unamortized deferred compensation .



PROBLEM 5-4

a.                                The Interpublic Group of Companies  
                                     Vertical Common-Size Statement  
                                     Consolidated Statement of Income

Year Ended December 31	(In Percentages)		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Revenue	100.0	100.0	100.0
Operating expenses:			
Salaries and related expenses	56.3	56.2	56.4
Office and general expenses	30.1	27.5	29.0
Amortization of intangible assets	2.6	2.0	2.0
Restructuring and other merger related costs	9.6	2.5	2.5
Goodwill impairment and other charges	<u>4.5</u>	<u>--</u>	<u>--</u>
Total operating expenses	103.1	88.2	89.9
Other income (loss)	<3.1>	11.8	10.1
Other income (expense)			
Interest expense	<2.4>	<1.87>	<1.6>
Interest income	.6	.8	.9
Other income	.2	.6	1.0
Investment impairment	<u>(3.1)</u>	<u>--</u>	<u>--</u>
Total other income (expense)	(4.7)	(.3)	.4
Income (loss) before provision for (benefit of) income taxes	<7.8>	11.5	10.5
Provision for (benefit of) income taxes	.7	<4.9>	<4.4>
Income (loss) of consolidated companies	7.0	6.7	6.0
Income applicable to minority interests	(.5)	(.6)	(.6)
Equity in net income (loss) of unconsolidated affiliates	<u>.1</u>	<u>(.2)</u>	<u>.2</u>
Net income (loss)	(7.5)	5.9	5.6

Problem 5-4 continued

b.

Year Ended December 31	(In Percentages)		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Revenue	104.8	111.9	100.0
Operating expenses:			
Salaries and related expenses	104.7	111.5	100.0
Office and general expenses	108.8	106.1	100.0
Amortization of intangible assets	134.7	112.4	100.0
Restructuring and other merger related costs	404.8	111.4	100.0
Goodwill impairment and other charges			--
Total operating expenses	N/A	N/A	100.0
Other income (loss)	120.2	109.8	100.0
Other income (expense)			
Interest expense	N/A	130.8	100.0
Interest income			100.0
Other income	165.4	126.9	100.0
Investment impairment	76.5	102.3	--
Total other income (expense)	20.8	70.2	N/A
Income (loss) before provision for (benefit of) income taxes	N/A	--	
Provision for (benefit of) income taxes	N/A	N/A	100.0
Income (loss) of consolidated companies	N/A	123.0	100.0
Income applicable to minority interests	N/A	122.3	100.0
Equity in net income (loss) of unconsolidated affiliates	N/A	123.6	100.0
Net income (loss)	79.3	112.0	100.0
	49.1	N/A	100.0
	N/A	116.9	

c. Vertical Common-Size

- Significant increase in total operating expenses. This increase was substantially caused by increase in restructuring and other merger related costs; and by goodwill impairment and other charges.
- Significant decrease in operating income
- Significant increase in investment impairment
- Significant decrease in income of consolidated company
- Significant decrease in net income

Horizontal Common-Size

- Significant increase in amortization of intangible assets
- Significant increase in restructuring and other merger related costs
- Significant increase in interest expense
- Significant decrease in interest income
- Significant decrease in income applicable to minority interest

### PROBLEM 5-5

<u>Item</u>	<b>Year 1</b>	<u>Year 2</u>	<u>Change Analysis</u>	
			<u>Amount</u>	<u>Percent</u>
1	—	3,000	3,000	—
2	6,000	(4,000)	(10,000)	
3	(7,000)	4,000	11,000	
4	4,000	—	(4,000)	(100%)
5	8,000	10,000	2,000	25%

### PROBLEM 5-6

<u>Item</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Change Analysis</u>	
			<u>Amount</u>	<u>Percent</u>
1	4,000	—	(4,000)	100
2	5,000	(3,000)	(8,000)	—
3	(9,000)	2,000	11,000	—
4	7,000	—	(7,000)	100
5	—	15,000	15,000	—

### PROBLEM 5-7

a.

	<u>December 31</u>		<u>Increase</u>	<u>Decrease</u>
	<u>2003</u>	<u>2002</u>	<u>Dollars</u>	<u>Percent</u>
Net sales	\$30,000	\$28,000	\$2,000	107.1
Cost of goods sold	<u>20,000</u>	<u>19,500</u>	<u>500</u>	<u>102.6</u>
Gross profit	10,000	8,500	1,500	117.6
Selling, general and administrative expense	<u>3,000</u>	<u>2,900</u>	<u>100</u>	<u>103.4</u>
Operating income	7,000	5,600	1,400	125.0
Interest expense	<u>100</u>	<u>80</u>	<u>20</u>	<u>125.0</u>
Income before taxes	6,900	5,520	1,380	125.0
Income tax expense	<u>2,000</u>	<u>1,600</u>	<u>400</u>	<u>125.0</u>
Net income	<u>\$ 4,900</u>	<u>\$ 3,920</u>	<u>\$ 980</u>	<u>125.0</u>

- b.
- Net sales increased substantially more than cost of goods sold.
  - Net sales increased substantially more than selling, general and administrative expense.

- Interest expense, income tax expense, and net income increased materiality faster than net sales.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a review of common-size balance sheet and income statement of the Boeing Company.
2. This Thomson Analytics exercise provides for a review of common-size balance sheet and income statement for Anheuser-Busch and Adolph Coors. It also calls for a comparison of the Anheuser-Busch and Adolph Coors common-size data.

**Chapter 6**  
**Liquidity of Short-term Assets:**  
**Related Debt-Paying Ability**

***TO THE NET***

1.

a. SIC Kroger Co.  
**Cooper Tire** 5411 Retail-Grocery Stores  
 3011 Tires & Inner Tubes

b. Cooper Tire will have a higher current ratio. The nature of Cooper's business will result in higher relative inventories and receivables than Kroger.

c. Cooper Tire  
December 31, 2001

Current assets	<u>\$952,097,000</u> = 1.47
Current liabilities	\$647,905,000

Kroger Co.  
 February 2, 2002

Current asset	<u>\$5,512,000,000</u> = 1.00
Current liabilities	\$5,485,000,000

Yes. Results agreed with speculation in part (b).

2. Eastman Kodak

a. Net receivables at December 31, 2001 \$2,337,000,000

b. Gross receivables at December 31, 2001 could not determine

c. Inventory method  
 LIFO, FIFO, and Average Cost method  
 Inventories are stated at the lower of cost or market. The cost of most inventories in the U.S. is determined by the "last-in, first-out" (LIFO) method. The cost of all of the company's remaining inventories in and outside the U.S. is determined by the "first-in, first-out" (FIFO) or average cost method, which approximates current cost. The company provides inventory reserves for excess, obsolete or slow-

moving inventory based on changes in customer demand, technology developments or other economic factors.

3. Sears, Roebuck & Co.

a. Inventory balance

December 31, 2001	\$4,912,000,000
December 30, 2000	\$5,618,000,000

- b. Approximately 80% of merchandise inventories are valued at the lower of cost or market, with cost determined using the retail inventory method ("RIM") under the last-in, first-out (LIFO) cost flow assumption.

Merchandise inventories of Sears Canada operations in Puerto Rico and NTB stores, which in total represent approximately 12% of merchandise inventories, are recorded at the lower of cost or market based on the FIFO method.

- c. If the first-in, first-out ("FIFO") method of inventory valuation had been used instead of the LIFO method, merchandise inventories would have been \$591 and \$566 million higher at December 29, 2001 and December 30, 2000, respectively.



## QUESTIONS

- 6- 1. In the very short run, the procedure of making more funds available by slowing the rate of payments on accounts payable would work and the firm would have more funds to purchase inventory, which would in turn enable the firm to generate more sales. This procedure would not work very long because creditors would demand payment and they may refuse to sell to our firm or demand cash upon delivery. In either case, the end result would be the opposite of what was intended.
- 6- 2. When a firm is growing fast, it needs a large amount of funds to expand its inventory and receivables. At the same time, payroll and payables require funds. Although Jones Wholesale Company has maintained an above average current ratio for the wholesale industry, it has probably built up inventory and receivables, which require funds. The inventory and the receivables are probably being carried for longer periods of time than the credit terms received on the payables.

Funds may have also been applied from current operations towards long-term assets in order to expand capacity.

Fast-growing firms typically do have a problem with a shortage of funds. It is important that they minimize this problem in order to avoid a bad credit rating and possible bankruptcy.

- 6- 3. Current assets are assets that are in the form of cash or that will be realized in cash or that conserve the use of cash within an operating cycle of a business, or one year, whichever is the longer period of time.
- The other assets are not expected to be realized in cash in the near future and should, therefore, be segregated from current assets.
- 6- 4. The operating cycle is the period of time elapsing between the acquisition of goods and the final cash realization resulting from sales and subsequent collections.
- 6- 5. Current assets are assets that are in the form of cash or that will be realized in cash or that conserve the use of cash within the operating cycle of a business, or one year, whichever is the longer period of time.

- 6- 6. The five major categories of items that are found in current assets are the following:
- a. cash
  - b. marketable securities
  - c. receivables
  - d. inventories
  - e. prepaids
- 6- 7. The cash frozen in a bank in Cuba should not be classified as a current asset because it is not readily available to be used in operations.
- 6- 8. This guaranteed note would not be recorded by A.B. Smith Company; therefore, it would not influence the liquidity ratios. The potential impact on the liquidity of A.B. Smith Company should be considered, because A.B. Smith Company could be called upon to pay the note.
- 6- 9. This investment would not be classified as a marketable security because there is no intent to sell the securities and use the funds in current operations.
- 6-10. a. Number of days' sales in receivables  
b. Accounts receivable turnover
- 6-11. a. Number of days' sales in inventory  
b. Inventory turnover
- 6-12. A company that uses a natural business year would tend to overstate the liquidity of its receivables. The two computations that are made to indicate the liquidity of receivables are the days' sales in receivables and the accounts receivable turnover. Because the receivables would be at or near their low point at the end of a natural business year, the days' sales in receivables would be low at the end of the year in comparison with usual days' sales in receivables during the year. The accounts receivable turnover would be high, based on the natural business year in relation to the turnover and the receivables figures during the year.
- 6-13. Since the receivables will be at their peak at the end of the year, the days' sales in receivables will be high and the accounts receivable turnover will be low; thus, the liquidity will be understated when a firm closes its year at or near the peak of its business.

- 6-14. This distortion can be eliminated by using the average monthly receivables figures in the liquidity computations. The average monthly receivables figure will eliminate the year's high or low in receivables.
- 6-15. The liquidity of the receivables will be overstated if the sales figure includes both cash sales and credit sales. The exact liquidity indicated by the days' sales in receivables and the accounts receivable turnover will be meaningless but the trend that can be determined from these computations will be meaningful.
- 6-16. Inventories of a trading concern, whether it is a wholesale or a retail concern, are usually classified in one inventory account called "merchandise inventory." Inventories of a manufacturing concern are normally classified in three inventory accounts. These inventory accounts distinguish between getting ready to produce - raw material inventory; inventory in production, work in process inventory; and inventory completed - finished goods inventory.
- 6-17. The most realistic valuation of inventory would be the FIFO method because the most recent cost would be in the inventory. The LIFO method would result in the least realistic valuation of inventory. This is the result of having old cost in inventory.
- 6-18. a. If the company uses a natural business year for its accounting period, the number of days' sales in inventory will tend to be understated. When the average daily cost of goods sold for the year is divided into the ending inventory, the resulting answer will be a lower number of days' sales in inventory than actually exists.
- b. If the company closes the year when the activities are at a peak, the number of days' sales in inventory would tend to be overstated and the liquidity would be understated. When the average daily cost of goods sold for the year is divided into the ending inventory, the resulting answer will be a higher number of days' sales in inventory than actually exists.
- c. If the company uses LIFO inventory, the number of days' sales in inventory would tend to be understated during inflation because the inventory would be at low

cost figures, while the cost of goods sold would be at higher current cost.

- 6-19. a. There is no ideal number of days' sales in inventory. The number that a company should have would be guided by company policy and industry averages.
- b. In general, a company wants to minimize the days' sales in inventory. Excess inventory is expensive to the company. Some of these costs are storage cost, additional funds required, and financing cost.
- c. Days' sales in inventory can be too low, resulting in lost sales, limited production runs, higher transportation costs, etc.
- 6-20. When the cost of goods sold is not available to compute days' sales in inventory, use net sales. The result will not be a realistic number of days' sales in inventory, but the result will be useful in comparing one period with another for the same firm and in comparing one firm with another firm, also using net sales.
- 6-21. The distortions from seasonal fluctuations or the use of a natural business year can be eliminated by using monthly inventory figures when computing the average inventory that will then be divided into cost of goods sold.
- 6-22. When prices are rising the use of LIFO inventory will result in a much higher inventory turnover because of the lower inventory and the higher cost of goods sold. Therefore, the inventory turnover of a firm that uses LIFO should not be compared with the inventory turnover of a firm that does not use LIFO.
- 6-23. Working capital is defined as current assets less current liabilities.
- 6-24. Current liabilities are obligations whose liquidation is reasonably expected to require the use of existing current assets or the creation of other current liabilities within a year or an operating cycle, whichever is longer.

- 6-25. (1) a. Working capital - The excess of current assets over current liabilities.
- b. Current ratio - The ratio of total current assets to total current liabilities.
- c. Acid-test ratio - The ratio of total current assets less inventory to total current liabilities.
- d. Cash ratio - The ratio of total current assets less inventory and receivables to total current liabilities.
- (2) a. Working capital - Working capital based on cost figures will tend to be understated because inventory will be stated at amounts that do not represent current value.
- b. Current ratio - The current ratio will tend to be understated because inventory will be stated at amounts that do not represent current value.
- c. Acid-test ratio - The acid-test ratio will tend to be accurate.
- d. Cash ratio - The cash ratio will tend to be accurate.
- (3) To avoid the understatements in working capital and the current ratio, use the replacement cost of inventory when it is disclosed.
- 6-26. The current working capital amount should be compared with past working capital amounts to determine if working capital is reasonable. Caution must be exercised because the relative size of the firm may be expanding or contracting. Comparing working capital of one firm with working capital of another firm will usually be meaningless because of the different sizes of the firms.

- 6-27. The current ratio is considered to be more indicative of the short-term debt-paying ability than the working capital because the current ratio takes into account the relative relation between the size of the current assets and the size of the current liabilities. Working capital only determines the absolute difference between the current assets and the current liabilities.
- 6-28. The acid-test ratio is considered to be a better guide to short-term liquidity than the current ratio when there are problems with the short-run liquidity of inventory. Some problems with inventory could be in determining a reasonable dollar amount in relation to the quantity on hand (LIFO inventory), the inventory has been pledged, or the inventory is held for a long period of time. The cash ratio would be preferred over the acid-test ratio when there is a problem with the liquidity of receivables. An example would be an entity that has a long collection period for receivables.
- 6-29. If a firm can reduce its operating cycle, it can benefit from having more funds available for operating or it could reduce the funds that it uses in operations. Since funds cost the firm money, it can increase profits by operating at a more efficient operating cycle. An improved operating cycle will enable the firm to operate with less plant and equipment and still maintain the present level of sales, thereby increasing profits. Or, the firm could expand the level of sales with the improved operating cycle without expanding plant and equipment. This expansion in sales could also mean greater profits. Opportunities to improve the operating cycle will be found in the management of the inventory and the accounts receivable.
- 6-30. Some industries naturally need a longer operating cycle than others because of the nature of the industry. For example, we could not expect the car manufacturer to have an operating cycle that compares with that of a food store because it takes much longer to manufacture cars and collect the receivables from the sales than it does for the food store to buy its inventory and sell it for cash. Thus, comparing the operating cycles of a car manufacturer and a food store would not be a fair comparison.
- 6-31. Because funds to operate the business are costly to the firm, a firm with a longer operating cycle usually charges a high mark-up on its inventory cost when selling than does a firm

with a short operating cycle. This enables the firm to recover the cost for the funds that are used to operate the business. A food store usually has a very low mark-up, while a car manufacturer would have a higher mark-up.

Within the same industry, it is difficult to have a different mark-up from firm to firm, unless different services are provided or a different quality is supplied, due to competitive forces in price.

- 6-32. Profitability is often not of major importance in determining the short-term debt-paying ability of a firm. One of the reasons for this is that many revenue items and many expense items do not directly affect cash flow during the same period.
- 6-33. The use of the allowance for doubtful accounts approach results in the bad debt expense being charged to the period of sale, thus matching this expense in the period of sale. It also results in the recognition of the impairment of the asset.
- 6-34. This is true because the most recent purchases end up in cost of goods sold on the income statement.
- 6-35. This type of a current asset would not be a normal recurring current asset. The firm's liquidity would be overstated in terms of normal sources.
- 6-36. Accounts receivable and inventory are often major segments of current assets. Therefore, they can have a material influence on the current ratio. Accounts receivable turnover and the merchandise inventory turnover are ratios that will aid the analyst in forming an opinion as to the quality of receivables and inventory. Poor quality in receivables and/or inventory will increase the current ratio, which indicates better liquidity than is the case.
- 6-37. Receivables can have a material influence on the acid-test ratio. Accounts receivable turnover will give some indication as to the quality of receivables. Poor quality in receivables will increase the acid-test ratio, which will result in the acid-test ratio appearing to be more favorable than it actually is.
- 6-38. FIFO represents the highest inventory balance under inflationary conditions.

6-39. Under inflationary conditions the cash flow under LIFO is greater than the cash flow under the other inventory methods by the difference in the resulting tax between the alternative cost methods.

6-40. No, a low sale to working capital ratio is an indication of an unprofitable use of working capital. It indicates that low amounts of sales are being generated for each dollar of working capital.

Yes, a high ratio is a tentative indication that the firm is undercapitalized. This firm will likely have a high inventory turnover and a low current ratio.

6-41. (1) Unused bank credit lines.

(2) Long-term assets that have the potential to be converted to cash quickly.

(3) Capability to issue debt or stock.

6-42. There are many situations where the liquidity position of the firm may not be as good as that indicated by the liquidity ratios. Some of the situations are the following:

(1) Notes discounted in which the other party has full recourse against the firm.

(2) Guarantee of a bank note for another firm.

(3) Major pending lawsuits against the firm.

(4) A major portion of the inventory is obsolete.

(5) A major portion of the receivables are uncollectible.

6-43. The sales to working capital ratio give an indication of whether working capital is used unprofitably or is possibly overworked.

6-44. Because the higher costs are reflected in the cost of sales (last in, first out), leaving old costs (lower) in inventory.



6-45. FIFO inventory - reported profit

Reported profit under LIFO	\$100,000
Increase in ending inventory	<u>10,000</u>
Reported profit under FIFO	<u>\$110,000</u>

Reported profit under LIFO	\$100,000
Increase in ending inventory	<u>5,000</u>
Reported profit under average cost	<u>\$105,000</u>

Yes, the inventory costing market should be disclosed.

PROBLEMS

PROBLEM 6-1

$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \text{Ratio}$        $\frac{\text{Current Assets}-\text{Inventory}}{\text{Current Liabilities}} = \text{Acid-Test Ratio}$

$$\frac{\text{Current Assets}}{400,000} = 2.5 \qquad \frac{\$1,000,000-\text{Inventory}}{\$400,000} = 2.0$$

$$\begin{aligned} \text{Current Assets} &= \$1,000,000 & \$1,000,000-\text{Inventory} &= 800,000 \\ & & \$1,000,000-\$800,000 &= \text{Inventory} \\ & & \$200,000 &= \text{Inventory} \end{aligned}$$

$$\frac{\text{Cost of Sales}}{\text{Inventory}} = 3$$

Note: In order to work this problem, it must be assumed that the acid-test ratio is computed as follows:

$$\frac{\text{Cost of Sales}}{\$200,000} = 3 \qquad \frac{\text{Current Assets}-\text{Inventory}}{\text{Current Liabilities}}$$

$$\text{Cost of Sales} = \$600,000$$

PROBLEM 6-2

a.  $\text{Days' sales in receivables} = \frac{\text{Gross Receivables}}{\text{Net Sales}/365}$

$$2003: \frac{\$220,385 + \$11,180}{\$1,180,178/365} = 71.62 \text{ days}$$

$$2002: \frac{\$240,360 + \$12,300}{\$2,200,000/365} = 41.92 \text{ days}$$

b.  $\text{Accounts receivable turnover} = \frac{\text{Net Sales}}{\text{Average Gross Receivables}}$

$$2003: \frac{\$1,180,178}{(\$240,360 + \$12,300 + \$220,385 + \$11,180) / 2} = 4.87 \text{ times per year}$$

$$2002: \frac{\$2,200,000}{(\$230,180 + \$7,180 + \$240,360 + \$12,300) / 2} = 8.98 \text{ times per year}$$

- c. The Hawk Company receivables have been much less liquid in 2003 in comparison with 2002. The days' sales in receivables at the end of the year have increased from 41.92 days in 2002 to 71.62 days in 2003. The accounts receivable turnover declined in 2003 to 4.87 from a turnover of 8.98 in 2002. These figures represent a major deterioration in the liquidation of receivables. The reasons for this deterioration should be determined. Some possible reasons are a major customer not paying its bills, a general deterioration of all receivable accounts, or a change in the Hawk Company credit terms.

**PROBLEM 6-3**

a. Days' sales in receivables =  $\frac{\text{Gross Receivables}}{\text{Net Sales}/365}$

December 31, 2003:  $\frac{\$55,400 + \$3,500}{\$800,000/365} = 26.87$  days

July 31, 2003:  $\frac{\$90,150 + \$4,100}{\$790,000/365} = 43.55$  days

b. Accounts receivable turnover =  $\frac{\text{Net Sales}}{\text{Average Gross Receivables}}$

December 31, 2003:  $\frac{\$800,000}{(\$50,000 + \$3,000 + \$55,400 + \$3,500)/2}$   
14.30 times per year

July 31, 2003:  $\frac{\$790,000}{(\$89,000 + \$4,000 + \$90,150 + \$4,100)/2}$   
8.44 times per year

- c. This company appears to have a seasonal business because of the materially different days' sales in receivables and accounts receivable turnover when computed at the two different dates. The ratios computed will not be meaningful in an absolute sense, but they would be meaningful in a comparative sense when comparing the same dates from year to year. They would not be meaningful when comparing different dates.

PROBLEM 6-4

$$\text{a. Days' sales in receivables} = \frac{\text{Gross Receivables}}{\text{Net Sales}/365}$$

$$\text{L. Solomon Company days' sales in receivables} = \frac{\$110,000 + \$8,000}{\$1,800,000/365} = 23.93 \text{ days}$$

$$\text{L. Konrath Company days' sales in receivables} = \frac{\$60,000 + \$4,000}{\$1,850,000/365} = 12.63 \text{ days}$$

- b. It appears that the L. Konrath Company manages receivables better than does L. Solomon Company. They have 12.6 days' sales in receivables while the L. Solomon Company has 23.9 days' sales in receivables. Actually, we cannot make a fair comparison between these two companies because the L. Solomon Company is using the calendar year while the L. Konrath Company appears to be using a natural business year. By using a natural business year, the L. Konrath Company has its receivables at a low point at the end of the year. This would make its liquidity overstated at the end of the year.

PROBLEM 6-5

$$\text{a. } \frac{\text{365 days}}{\text{Accounts receivable turnover in days}} = \frac{365}{36} = 10.14 \text{ times per year}$$

$$\text{b. } \frac{\text{365 days}}{12.0 \text{ times per year}} = 30.42 \text{ days}$$

$$\text{c. } \frac{\text{Gross Receivables}}{\text{Net Sales}/365} = \frac{\$280,000}{\$2,158,000/365} = 47.36 \text{ days}$$

$$\text{d. } \frac{\text{Net Sales}}{\text{Average Gross Receivables}} = \frac{\$3,500,000}{\$324,000} = 10.80 \text{ times per year}$$

PROBLEM 6-6

$$\text{a. } \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365} = \text{Days' Sales In Inventory}$$

$$\frac{\$360,500}{\$2,100,000/365} = 62.66 \text{ days}$$

- b. No. Since J. Shaffer Company uses LIFO inventory, the ending inventory is computed using costs that are not

representative of the current cost. The cost of goods sold is representative of the approximate current cost and, therefore, the average daily cost of goods sold is representative of current cost. When the average daily cost of goods sold is divided into the inventory, the result is an unrealistically low number of days' sales in inventory. Thus, the liquidity is overstated.

- c. The number of days' sales in inventory would be a helpful guide when compared with prior periods. The actual computed number of days' sales in inventory would not be meaningful because of the LIFO inventory.

PROBLEM 6-7

a. 
$$\frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365} = \text{Inventory Turnover In Days}$$

$$= \frac{\$280,000}{\$1,250,000/365} = 81.76 \text{ Days}$$

b. 
$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \text{Merchandise Inventory Turnover}$$

$$\frac{\$1,250,000}{\$280,000} = 4.46 \text{ times per year}$$

or

$$\frac{365}{\text{Inventory Turnover in days}} = \text{Merchandise Inventory Turnover}$$

$$\frac{365}{81.8} = 4.46 \text{ times per year}$$

PROBLEM 6-8

a. 
$$\text{Accounts Receivable Turnover (in days)} = \frac{\text{Average Gross Receivable}}{\text{Net Sales}/365}$$

$$\frac{(\$180,000 + \$160,000)/2}{\$3,150,000/365} = 19.70 \text{ days}$$

b. Inventory Turnover In Days =  $\frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365}$

$\frac{(\$480,000 + \$390,000)/2}{\$2,250,000/365} = \frac{\$435,000}{\$2,250,000/365} = 70.57$   
days

c. Operating = Accounts Receivable + Inventory Turnover  
Cycle Turnover In Days In Days  
= 19.70 days + 70.57 days = 90.27  
days

### PROBLEM 6-9

Days' Sales In + Days Sales In = Estimated days to  
realize  
Receivables Inventory cash from ending  
inventory

$$\text{Days' Sales in Receivables} = \frac{\text{Gross Receivables}}{\text{Net Sales}/365}$$

$$\frac{\$560,000 + \$30,000}{\$4,350,000/365} = \frac{\$590,000}{\$4,350,000/365} = 49.51 \text{ days}$$

$$\text{Days' Sales In Inventory} = \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365} = \frac{\$680,000}{\$3,600,000/365} = 68.94 \text{ days}$$

$$49.51 \text{ Days} + 68.94 \text{ Days} = 118.45 \text{ days}$$

### PROBLEM 6-10

a. Days' Sales In =  $\frac{\text{Gross Receivables}}{\text{Net Sales}/365} = \frac{\$480,000 + \$25,000}{\$3,650,000/365} = 50.5$   
Receivables days

b. Days' Sales In  $\frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365} = \frac{\$570,000}{\$2,850,000/365}$   
Inventory Using =  
The Cost Figure = 73.00 days

c. Days' sales in inventory using the replacement cost for the inventory and the cost of goods sold.

$$\frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365} = \frac{\$ 900,000}{\$3,150,000/365} = 104.29 \text{ days}$$

- d. The replacement cost data should be used for inventory and cost of goods sold when it is disclosed. Replacement cost places inventory and cost of goods sold on a comparable basis. When the historical cost figures are used and the company uses LIFO, then the cost of goods sold and the inventory are not on a comparable basis. This is because the inventory has rather old cost and the cost of goods sold has recent cost. For Laura Badora Company, the actual days' sales in inventory based on replacement cost are over 30 days more than was indicated by using the cost figures.

PROBLEM 6-11

$$\begin{aligned} \text{a. Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ &= \$1,052,820 - \$459,842 = \$592,978 \end{aligned}$$

$$\text{b. Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$1,052,820}{\$459,842} = 2.29$$

$$\text{c. Acid-Test Ratio} = \frac{\text{Cash \& Equivalents} + \text{Net Receivables} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

$$\frac{\$33,493 + \$215,147 + \$255,000}{\$459,842} = \frac{\$503,640}{\$459,842} = 1.10$$

$$\text{d. Cash Ratio} = \frac{\text{Cash \& Equivalents} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

$$\frac{\$33,493 + \$215,147}{\$459,842} = \frac{\$248,640}{\$459,842} = .54$$

$$\text{e. Days' Sales In Receivables} = \frac{\text{Gross Receivables}}{\text{Net Sales}/365}$$

$$\frac{\$255,000 + \$6,000}{\$3,050,600/365} = \frac{\$261,000}{\$3,050,600/365} = 31.23 \text{ days}$$

$$\text{f. Accounts Receivable Turnover (in days)} = \frac{\text{Average Gross Receivables}}{\text{Net Sales}/365}$$

$$\frac{(\$255,000 + \$6,000 + \$288,000)/2}{\$3,050,600/365} = \frac{\$274,500}{\$3,050,600/365}$$



$$\$3,050,600/365$$

$$\$3,050,600/365 = 32.84 \text{ days}$$

$$\text{g. Days' Sales In Inventory} = \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365} = \frac{\$523,000}{\$2,185,100/365} = 87.36 \text{ days}$$

$$\text{h. Inventory Turnover In Days} = \frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365}$$

$$\frac{(\$523,000 + \$565,000)/2}{\$2,185,100/365} = \frac{\$544,000}{\$2,185,100/365} = 90.87 \text{ days}$$

$$\text{i. Operating Cycle} = \text{Accounts Receivable Turnover In Days} + \text{Inventory Turnover In Days}$$

$$123.71 \text{ days} = 32.84 \text{ days} + 90.87 \text{ days}$$

#### PROBLEM 6-12

	Total Current <u>Assets</u>	Total Current <u>Liabilities</u>	Net Working <u>Capital</u>	Current <u>Ratio</u>
a.	+	0	+	+
b.	+	0	+	+
c.	+	0	+	+
d.	-	-	0	+
e.	-	0	-	-
f.	0	0	0	0
g.	+	0	+	+
h.	0	0	0	0
i.	-	0	-	-
j.	0	-	+	+
k.	0	0	0	0
l.	0	+	-	-
m.	+	+	0	-
n.	0	+	-	-
o.	-	0	-	-

#### PROBLEM 6-13

Company E and Company D have the same amount of working capital. Company D has a current ratio of 2 to 1, while Company E has a current ratio of 1.29 to 1. Company D is in a better short-term financial position than Company E because its liabilities are covered better with a higher current ratio. Working capital is not very significant because the amount of working capital does not indicate the relative size of the companies and the amount needed.

PROBLEM 6-14

Company T has twice the working capital of Company R. Both companies have a current ratio of 2 to 1. In general, both companies are in the same relative position because of the same current ratio. The greater amount of working capital in Company T is not very significant because the amount of working capital does not indicate the relative size of the companies and the amount needed.

PROBLEM 6-15

a. (1) Working Capital:

$$2004: \$500,000 - \$340,000 = \$160,000$$

$$2003: \$400,000 - \$300,000 = \$100,000$$

(2) Current Ratio:

$$2004: \$500,000 / \$340,000 = 1.47 \text{ to } 1$$

$$2003: \$400,000 / \$300,000 = 1.33 \text{ to } 1$$

(3) Acid-Test Ratio:

$$2004: \frac{\$500,000 - \$250,000}{\$340,000} = .74 \text{ to } 1$$

$$2003: \frac{\$400,000 - \$200,000}{\$300,000} = .67 \text{ to } 1$$

(4) Accounts Receivable Turnover:

$$2004: \frac{\$1,400,000}{(\$110,000 + \$105,000)/2} = 13.02 \text{ times per year}$$

$$2003: \frac{\$1,500,000}{(\$120,000 + \$110,000)/2} = 13.04 \text{ times per year}$$

(5) Inventory Turnover:

$$2004: \frac{\$1,120,000}{(\$200,000 + \$250,000)/2} = 4.98 \text{ times per year}$$

$$2003: \frac{\$1,020,000}{(\$280,000 + \$200,000)/2} = 4.25 \text{ times per year}$$

(6) Inventory Turnover In Days:

$$2004: 365 / 4.98 = 73.29 \text{ days}$$

$$2003: 365 / 4.25 = 85.88 \text{ days}$$

- b. The short-term liquidity of the firm has improved between 2003 and 2004. The working capital increased by \$60,000, while the current ratio increased from 1.33 to 1.47. The acid-test ratio increased from .67 to .74. Using a rule of thumb of two for the current ratio and one for the acid-test, this firm needs to improve its current liquidity position.

The accounts receivable turnover stayed the same, while the inventory improved from 4.25 to 4.98. The days' sales in inventory improved from 85.88 to 73.29 days.

Much of the improvement in the current position can be attributed to the improved control of the inventory.

#### PROBLEM 6-16

a. Based on the year-end figures

(1) Accounts Receivable Turnover in Days:

$$\frac{\text{Average Gross Receivables}}{\text{Net Sales} / 365} = \frac{(\$75,000 + 450,000) / 2}{\$4,000,000} = \frac{5.70}{\text{Days}}$$

(2) Accounts Receivable Turnover Per Year:

$$\frac{\text{Net Sales}}{\text{Gross Receivables}} = \frac{\$4,000,000}{(\$75,000 + \$50,000) / 2} = 64 \text{ Average times per year}$$

(3) Inventory Turnover in Days:

$$\frac{\text{Average Inventory}}{\text{Cost of Goods Sold} / 365} = \frac{(\$350,000 + \$400,000) / 2}{\$1,800,000 / 365} = 76.04 \text{ days}$$

(4) Inventory Turnover per Year

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$1,800,000}{(\$350,000 + \$400,000) / 2} = 4.80 \text{ times per year}$$

b. Using average figures:

Total monthly Gross Receivables	\$6,360,000
Average	\$ 530,000
Total monthly Inventory	\$5,875,000
Average	\$ 489,583

(1) Accounts Receivable Turnover in Days:

$$\frac{\text{Average Gross Receivables}}{\text{Net Sales}/365} = \frac{\$ 530,000}{\$4,000,000/365} = 48.36 \text{ days}$$

(2) Accounts Receivable Turnover Per Year:

$$\frac{\text{Net Sales}}{\text{Average Gross Receivables}} = \frac{\$4,000,000}{\$530,000} = 7.55 \text{ times per year}$$

(3) Inventory Turnover in Days:

$$\frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365} = \frac{\$ 489,583}{\$1,800,000/365} = 99.28 \text{ days}$$

(4) Inventory Turnover per Year:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$1,800,000}{\$ 489,583} = 3.68 \text{ times per year}$$

c. Based on the year-end averages, the liquidity of the receivables and inventory are overstated and, therefore, they are unrealistic. The table shows the overstatement of liquidity in comparison with monthly averages.

	Based on Year- <b>End Figures</b>	Based on Monthly <b>Figures</b>
Accounts Receivable Turnover in Days	5.70 days	48.36 days
Accounts Receivable Turnover Per Year	64 times per year	7.55 times per year
Inventory Turnover In Days	76.04 days	99.28 days

Inventory Turnover                      4.80 times per year    3.68 times per year  
Per Year

d. Days' Sales In Receivables:

$$\frac{\text{Gross Receivables}}{\text{Net Sales}/365} = \frac{\$ 50,000}{\$4,000,000/365} = 4.56 \text{ days}$$

e. Days' Sales In Inventory:

$$\frac{\text{Ending Inventory}}{\text{Cost of Goods sold}/365} = \frac{\$ 400,000}{\$1,800,000/365} = 81.11 \text{ days}$$

f. The days' sales in receivables and the days' sales in inventory are understated based on the year-end figures because the receivables and inventory numbers are abnormally low at this time. Therefore, the liquidity of the receivables and the inventory is overstated.

Anne Elizabeth Corporation is using a natural business year and, therefore, at the year-end the receivables and the inventory are below average for the year.

PROBLEM 6-17

a. First-In, First-Out (FIFO):

		<u>Inventory</u>	<u>Cost of Goods Sold</u>
August 1	Purchase 200 @ \$7.00	\$1,400	
November 1	Purchase 200 @ \$7.50	<u>\$1,500</u>	
		<u>\$2,900</u>	
Remaining cost in cost of goods sold (\$10,900-\$2,900)			<u>\$8,000</u>

b. Last-In, First-Out (LIFO):

		<u>Inventory</u>	<u>Cost of Goods Sold</u>
January 1	Inventory 400 x \$5.00		<u>\$2000</u>
Remaining cost in cost of goods sold (\$10,900-\$2,000)			<u>\$8,900</u>

c. Average Cost (Weighted Average):

		<u>Inventory</u>	<u>Cost of Goods Sold</u>
Total cost	<u>\$10,900</u> = \$6.06		
Total Units	1,800		

Inventory (400 x \$6.06) = \$2,424

Remaining cost in cost of goods sold (\$10,900-\$2,424) \$8,476

d. Specific Identification:

	<u>Inventory</u>	<u>Cost of Goods Sold</u>
March 1, Purchase cost \$6.00		
Inventory 400 x \$6.00	\$2,400	

Remaining cost in cost of goods sold (\$10,900-\$2,400) \$8,500

PROBLEM 6-18

a. First-In, First-Out (FIFO):

	<u>Inventory</u>	<u>Cost of Goods Sold</u>
December 10 Purchase		
500 x \$5.00	\$2,500	
October 22 Purchase		
100 x \$4.90	<u>490</u>	
	<u>\$2,990</u>	

Remaining cost in cost of goods sold (\$20,325-\$2,990) \$17,335

b. Last-In, First-Out (LIFO):

	<u>Inventory</u>	<u>Cost of Goods Sold</u>
January 1 Beginning inventory		
(600 x \$4.00)	<u>\$2,400</u>	

Remaining cost in cost of goods sold (\$20,325-\$2,400) \$17,925

c. Average Cost:

Total Cost	<u>\$20,325</u>	= \$4.619
Total Units	4,400	
Inventory (600 x \$4.62)	= \$2,772	
Cost of Goods Sold (\$20,325-\$2,772)	= <u>\$17,553</u>	

d. Specific Identification:

Inventory (600 x \$5.00)	= <u>\$ 3,000</u>
Cost of Goods Sold (\$20,325-\$3,000)	= <u>\$17,325</u>

**PROBLEM 6-19**

a. Sales to Working Capital:

$$\frac{\text{2004}}{\$650,000} = 2.41 \quad \frac{\text{2003}}{\$600,000} = 2.31 \quad \frac{\text{2002}}{\$500,000} = 2.08$$

$\frac{\$270,000}{\$260,000}$

b. The sales to working capital ratio for J.A. Appliance Company was substantially below the industry average for all three years. This tentatively indicates that working capital is not efficient in relation to the sales. There was some improvement in the ratio each year.

**PROBLEM 6-20**

- a. 3 A payment of a trade account payable would reduce both current assets and current liabilities. This would have the effect of increasing both the current and quick ratios since total quick assets exceeded total current liabilities both before and after the transactions.
- b. 2 This would increase current assets and current liabilities by the same amount. This would have the effect of decreasing the current ratio because total quick assets exceeded total current liabilities both before and after the transaction.
- c. 5 The collection of a current account receivable would not change the numerator or the denominator in either the current or quick ratios.
- d. 4 A write-off of inventory would decrease the numerator in the current ratio.
- e. 2 The liquidation of a long-term note would reduce the numerator in both the quick ratio and the current ratio, but it would reduce the numerator of the quick ratio proportionately more than the numerator of the current ratio.

$$(\$8,000 + \$72,000 + \$10,000 + \$60,$$

PROBLEM 6-21

a. 2 
$$\frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$
$$\frac{\$2,100,000 + \$7,200,000 + \$50,500,000}{\$34,000,000} = 1.76$$

b. 1 The collection of accounts receivable does not change the total numerator or the denominator of the current ratio formula, nor does the collection change total current assets or total current liabilities.

PROBLEM 6-22

a. 1 
$$\frac{\text{Net Sales}}{\text{Average Gross Receivables}} =$$
$$\frac{\$1,500,000}{(\$8,000 + \$72,000 + \$10,000 + \$60,000) / 2} = \frac{20.0 \text{ times}}{\text{per year}}$$

$$(\$8,000 + \$72,000 + \$10,000 + \$60,000) / 2$$

per year

b. 2 December 31 represents a date when the accounts receivable would be low and unrepresentative; thus the accounts receivable turnover computed on December 31 will be overstated.



PROBLEM 6-23

a.   3   
$$\frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$

$$\frac{\$8,000 + \$32,000 + \$40,000}{\$60,000 + \$30,000} = \frac{\$80,000}{\$90,000} = .89$$

b.   1   Net Sales (use only credit sales when available)  
Average Gross Receivables (only net receivables available in this problem)

$$\frac{\text{Net Sales}}{\text{Average Gross Receivables}}$$

Note: Use only credit sales when available.

$$\frac{\$600,000}{(\$40,000 + \$110,000) / 2} = \frac{\$600,000}{\$75,000} = 8.00 \text{ times}$$

c.   1   
$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\frac{\$1,260,000}{(\$80,000 + \$140,000) / 2} = \frac{\$1,260,000}{\$110,000} = 11.45 \text{ times}$$

d.   4   
$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\frac{\$8,000 + \$32,000 + \$40,000 + \$80,000}{\$60,000 + \$30,000} = \frac{\$160,000}{\$90,000} = 1.78 \text{ times}$$

e.   2   As long as the current ratio is greater than 1 to 1, any payment will increase the current ratio because the current liabilities go down more in proportion than do the current assets.

PROBLEM 6-24

a. 1 An increase in inventory would increase the current ratio. To the extent that the increase in inventory used current funds available, this would decrease the acid-test.

b. 4 LIFO would result in a lower inventory figure. This would decrease the current ratio and increase inventory turnover.

c. 3 
$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{X}{\$600,000} = 3.0$$

$$X = \$1,800,000$$

$$\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}} = \frac{\$1,800,000 - Y}{\$600,000} = 2.5$$

$$Y = \$300,000$$

$$\frac{\text{Cost of Sales}}{\text{Inventory}} = \frac{\$500,000}{\$300,000} = 1.67$$

d. 2 The most logical reason for the current ratio to be high and the quick ratio low is that the firm has a large investment in inventory.

e. 5 Low default risk, readily marketable, and a short-term to maturity is a proper description of investment instruments used to invest temporarily idle cash balances.

f. 1 A proper management of accounts receivable should achieve a combination of sales volume, bad debt experience, and receivables turnover that maximizes the profits of the corporation.

g. 5 Any of the four items could be used to cover payroll expenses.

PROBLEM 6-25

Revenue:

10,000 x 4 x \$15 =	\$ 600,000	
20,000 x 3 x \$15 =	900,000	
30,000 x 2 x \$15 =	900,000	
40,000 x 1 x \$15 =	<u>600,000</u>	\$3,000,000

Expenses:

Cost of goods sold:

120,000 x \$11 =	1,320,000	
80,000 x \$10 =	<u>800,000</u>	2,120,000
Selling and administrative		<u>270,000</u>
		<u>\$2,390,000</u>

Earnings before taxes	610,000
Taxes, 40%	<u>244,000</u>
Net income	<u>\$ 366,000</u>

PROBLEM 6-26

a. 1. Days' Sales In Receivables =  $\frac{\text{Gross Receivables}}{\text{Net Sales}/365}$

$$2005: \frac{\$131,000 + \$1,000}{\$880,000/365} = 54.75 \text{ days}$$

$$2004: \frac{\$128,000 + \$900}{\$910,000/365} = 51.70 \text{ days}$$

$$2003: \frac{\$127,000 + \$900}{\$840,000/365} = 55.58 \text{ days}$$

$$2002: \frac{\$126,000 + \$800}{\$825,000/365} = 56.10 \text{ days}$$

$$2001: \frac{\$125,000 + \$1,200}{\$820,000/365} = 56.17 \text{ days}$$

2. Accounts Receivable Turnover =  $\frac{\text{Net Sales}}{\text{Gross Receivables}}$

$$2005: \frac{\$880,000}{\$131,000 + \$1,000} = 6.67 \text{ times per year}$$

$$2004: \frac{\$910,000}{\$128,000 + \$900} = 7.06 \text{ times per year}$$

$$2003: \frac{\$840,000}{\$127,000 + \$900} = 6.57 \text{ times per year}$$

$$2002: \frac{\$825,000}{\$126,000 + \$800} = 6.51 \text{ times per year}$$

$$2001: \frac{\$820,000}{\$125,000 + \$1,200} = 6.50 \text{ times per year}$$

3. Accounts Receivable Turnover in Days =

$\frac{\text{Average Gross Receivables}}{\text{Net Sales}/365}$

$$2005: \frac{\$131,000 + \$1,000}{\$880,000/365} = 54.75 \text{ days}$$

$$2004: \frac{\$128,000 + \$900}{\$910,000/365} = 51.70 \text{ days}$$

$$2003: \frac{\$127,000 + \$900}{\$840,000/365} = 55.58 \text{ days}$$

$$2002: \frac{\$126,000 + \$800}{\$825,000/365} = 56.10 \text{ days}$$

$$2001: \frac{\$125,000 + \$1,200}{\$820,000/365} = 56.17 \text{ days}$$

4. Days' Sales in Inventory =  $\frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365}$

2005:  $\frac{\$122,000}{\$740,000/365} = 60.18$  days

2004:  $\frac{\$124,000}{\$760,000/365} = 59.55$  days

2003:  $\frac{\$126,000}{\$704,000/365} = 65.33$  days

2002:  $\frac{\$127,000}{\$695,000/365} = 66.70$  days

2001:  $\frac{\$125,000}{\$692,000/365} = 65.93$  days

5. Merchandise Inventory Turnover =

$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$

2005:  $\frac{\$740,000}{\$122,000} = 6.07$  times per year

2004:  $\frac{\$760,000}{\$124,000} = 6.13$  times per year

2003:  $\frac{\$704,000}{\$126,000} = 5.59$  times per year

2002:  $\frac{\$695,000}{\$127,000} = 5.47$  times per year

2001:  $\frac{\$692,000}{\$125,000} = 5.54$  times per year

6. Inventory Turnover in Days =

$$\frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365}$$

2005:	$\frac{\$122,000}{\$740,000/365}$	= 60.18 days
2004:	$\frac{\$124,000}{\$760,000/365}$	= 59.55 days
2003:	$\frac{\$126,000}{\$704,000/365}$	= 65.33 days
2002:	$\frac{\$127,000}{\$695,000/365}$	= 66.70 days
2001:	$\frac{\$125,000}{\$692,000/365}$	= 65.93 days

7. Operating Cycle =

$$\text{Accounts Receivable Turnover In Days} + \text{Inventory Turnover In Days}$$

2005:	54.75 + 60.18	= 114.93
2004:	51.70 + 59.55	= 111.25
2003:	55.58 + 65.33	= 120.91
2002:	56.10 + 66.70	= 122.80
2001:	56.17 + 65.93	= 122.10

8. Working Capital = Current Assets - Current Liabilities

2005:	$\$305,200 - \$109,500$	= \$195,700
2004:	$\$303,000 - \$110,000$	= \$193,000
2003:	$\$303,000 - \$113,500$	= \$189,500
2002:	$\$301,000 - \$114,500$	= \$186,500

$$2001: \quad \$297,000 - \$115,500 = \$181,500$$

$$9. \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2005: \quad \frac{\$305,200}{\$109,500} = 2.79$$

$$2004: \quad \frac{\$303,000}{\$110,000} = 2.75$$

$$2003: \quad \frac{\$303,000}{\$113,500} = 2.67$$

$$2002: \quad \frac{\$301,000}{\$114,500} = 2.63$$

$$2001: \quad \frac{\$297,000}{\$115,500} = 2.57$$

$$10. \text{ Acid-Test Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$

$$2005: \quad \frac{\$47,200 + \$2,000 + \$131,000}{\$109,500} = 1.65$$

$$2004: \quad \frac{\$46,000 + \$2,500 + \$128,000}{\$110,000} = 1.60$$

$$2003: \quad \frac{\$45,000 + \$3,000 + \$127,000}{\$113,500} = 1.54$$

$$2002: \quad \frac{\$44,000 + \$3,000 + \$126,000}{\$114,500} = 1.51$$

$$2001: \quad \frac{\$43,000 + \$3,000 + \$125,000}{\$115,500} = 1.48$$

$$11. \text{ Cash Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

$$2005: \quad \frac{\$47,200 + \$2,000}{\$109,500} = .45$$

2004:	$\frac{\$46,000 + \$2,500}{\$110,000}$	= .44
2003:	$\frac{\$45,000 + \$3,000}{\$113,500}$	= .42
2002:	$\frac{\$44,000 + \$3,000}{\$114,500}$	= .41
2001:	$\frac{\$43,000 + \$3,000}{\$115,500}$	= .40

12. Sales to Working Capital =  $\frac{\text{Net Sales}}{\text{Average Working Capital}}$

2005:	$\frac{\$880,000}{\$195,700}$	= 4.50
2004:	$\frac{\$910,000}{\$193,000}$	= 4.72
2003:	$\frac{\$840,000}{\$189,500}$	= 4.43
2002:	$\frac{\$825,000}{\$186,500}$	= 4.42
2001:	$\frac{\$820,000}{\$181,500}$	= 4.52



b. 1. Days' Sales in Receivables =  $\frac{\text{Gross Receivables}}{\text{Net Sales}/365}$

2005:	Same as part a	54.75 days
2004:	Same as part a	51.70 days
2003:	Same as part a	55.58 days
2002:	Same as part a	56.10 days
2001:	Same as part a	56.17 days

2. Accounts Receivable Turnover =  $\frac{\text{Net Sales}}{\text{Gross Receivables}}$

2005:	Same as part a	6.67 times per year
2004:	Same as part a	7.06 times per year
2003:	Same as part a	6.57 times per year
2002:	Same as part a	6.51 times per year
2001:	Same as part a	6.50 times per year

3. Accounts Receivable Turnover In Days =

$\frac{\text{Average Gross Receivables}}{\text{Net Sales}/365}$

2005:	$\frac{(\$131,000 + \$1,000 + \$128,000 + \$900)/2}{\$880,000/365}$	= 54.11 days
2004:	$\frac{\$128,000 + \$900 + \$127,000 + \$900/2}{\$910,000/365}$	= 51.50 days
2003:	$\frac{(\$127,000 + \$900 + \$126,000 + \$800)/2}{\$840,000/365}$	= 55.34 days
2002:	$\frac{(\$126,000 + \$800 + \$125,000 + \$1,200)/2}{\$825,000/365}$	= 55.97 days
2001:	Not sufficient data to compute using average gross receivables	

$$4. \text{ Days' Sales In Inventory} = \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365}$$

2005: Same as part a 60.18 days

2004: Same as part a 59.55 days

2003: Same as part a 65.33 days

2002: Same as part a 66.70 days

2001: Same as part a 65.93 days

$$5. \text{ Merchandise Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

2005:  $\frac{\$740,000}{(\$122,000 + \$124,000)/2} = 6.02$  times per year

2004:  $\frac{\$760,000}{(\$124,000 + \$126,000)/2} = 6.08$  times per year

2003:  $\frac{\$704,000}{(\$126,000 + \$127,000)/2} = 5.57$  times per year

2002:  $\frac{\$695,000}{(\$127,000 + \$125,000)/2} = 5.52$  times per year

2001: Not sufficient data to compute using average inventory.

$$6. \text{ Inventory Turnover In Days} = \frac{\text{Average Inventory}}{\text{Cost of Goods Sold}/365}$$

2005:  $\frac{(\$122,000 + \$124,000)/2}{\$740,000/365} = 60.67$  days

2004:	$\frac{(\$124,000 + \$126,000)/2}{\$760,000/365}$	= 60.03 days
2003:	$\frac{(\$126,000 + \$127,000)/2}{\$704,000/365}$	= 65.59 days
2002:	$\frac{(\$127,000 + \$125,000)/2}{\$695,000/365}$	= 66.17 days
2001:	Not sufficient data to compute using average inventory.	

7. Operating Cycle =

	Accounts Receivable Turnover In Days	+ Inventory Turnover In Days	=
2005:	54.11	+ 60.67	= 114.78
2004:	51.50	+ 60.03	= 111.53
2003:	55.34	+ 65.59	= 120.93
2002:	55.97	+ 66.17	= 122.14
2001:	Not sufficient data to compute.		

8. Working Capital = Current Assets - Current Liabilities

2005:	Same as part a	= \$195,700
2004:	Same as part a	= \$193,000
2003:	Same as part a	= \$189,500
2002:	Same as part a	= \$186,500
2001:	Same as part a	= \$181,500

9. Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

2005:	Same as part a	= 2.79
2004:	Same as part a	= 2.75

2003: Same as part a = 2.67  
 2002: Same as part a = 2.63  
 2001: Same as part a = 2.57

10. Acid-Test =  $\frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$

2005: Same as part a = 1.65  
 2004: Same as part a = 1.60  
 2003: Same as part a = 1.54  
 2002: Same as part a = 1.51  
 2001: Same as part a = 1.48

11. Cash Ratio =  $\frac{\text{Cash Equivalents} + \text{Marketable Securities}}{\text{Current Liabilities}}$

2005: Same as part a = .45  
 2004: Same as part a = .44  
 2003: Same as part a = .42  
 2002: Same as part a = .41  
 2001: Same as part a = .40

12. Sales to Working Capital =  $\frac{\text{Net Sales}}{\text{Average Working Capital}}$

2005:  $\frac{\$880,000}{(\$305,200 - \$109,500 + \$303,000 - \$110,000)/2} = 4.53$   
 2004:  $\frac{\$910,000}{(\$303,000 - \$110,000 + \$303,000 - \$113,500)/2} = 4.76$

$$2003: \frac{\$840,000}{(\$303,000 - \$113,500 + \$301,000 - \$114,500)/2} = 4.47$$

$$2002: \frac{\$825,000}{(\$301,000 - \$114,500 + \$297,000 - \$115,500)/2} = 4.48$$

2001: Not sufficient data to compute.

- c. Days' Sales in Receivables, Accounts Receivable Turnover, and Accounts Receivable Turnover in Days improved between 2001 and 2004 and slipped somewhat in 2005.

In general, the inventory ratios of Days' Sales in Inventory, Merchandise Inventory Turnover, and Inventory Turnover in Days improved between 2001 and 2004. There was somewhat of a deterioration in these ratios in 2005.

The operating cycle improved substantially between 2001 and 2004 and slipped somewhat in 2005. This is consistent with what we found with the Accounts Receivable Turnover in Days and the Inventory Turnover in Days.

The Working Capital and the Current Ratio improved each year. This indicates that current assets improved in relation to current liabilities. The Acid Test improved each year. The most liquid ratio, Cash Ratio, improved slightly each year.

The Sales to Working Capital was inconsistent with decline years and increase years. It ended with 2005 being approximately the same as 2004.

Seven of the twelve ratios were the same between part a and part b because no average was in the formula. For those with differences, the differences appear to be immaterial between part a and part b. It should be noted that one less year could be computed when an average was required.

## CASES

### CASE 6-1 LIFO-FIFO

(This case provides an opportunity to compare LIFO and FIFO.)

a. Working Capital = Current Assets - Current Liabilities

$$(\$154,600,000) = \$703,200,000 - \$548,600,000$$

b. The LIFO reserve account is the amount needed to reduce the FIFO cost inventory to a LIFO cost inventory. The balance at the end of 1998 was \$10,800,000.

c. Inventory	\$ 356,200,000
LIFO Reserve	<u>10,800,000</u>
	<u>\$ 367,000,000</u>

The inventory amount with the LIFO Reserve added back would be more realistic.

d. (1) Price increases:

LIFO results in lower income

(2) Price decreases:

LIFO results in higher income

(3) Constant Cost:

If prices remain constant, then the same profit will result with both LIFO and FIFO.

e. (1) Price Increases:

(a) Pre-Tax Cash Flows:

No difference in cash flow

(b) After-Tax Cash Flows:

Because of the lower income under LIFO, there will be less tax. This will result in higher cash flow.

(2) Price Decreases:

(a) Pre-Tax Cash Flows:

No difference in cash flow

(b) After-Tax Cash Flows:

Because of the higher income under LIFO, there will be more tax under LIFO.

(3) Constant cost:

(a) Pre-Tax Cash Flows:

No difference in cash flow

(b) After-Tax Cash Flows:

There will be no difference in cash flow because the tax will be the same.

- f. Using LIFO, the purchase on the last day of the year would be included in cost of goods sold, thus influencing the income statement.

CASE 6-2 RISING PRICES, A TIME TO SWITCH OFF LIFO?

(This case helps demonstrate that the individual investor must read comments from the company in a critical manner. The reasons given for a change in accounting principle may not appear to be the reasons stated when the data are analyzed critically.)

- a. Matching current costs against current revenue is usually considered to result in more realistic earnings, just the opposite of the claim of the anonymous corporation.
- b. Taxes on past earnings of \$6,150,000 will need to be paid if the company switches from LIFO. The corporation will seek permission to pay these taxes over a ten-year period.

Taxes in the future will be higher because of the increased profits resulting from the switch from LIFO.

- c. This year's profits will be higher because of the lower cost of goods sold.

- d. Future profits will be higher because of the matching of older costs against current revenue.
- e. This year's cash flow will be lower to the extent that there are higher taxes paid.
- f. Future cash flow will be lower by the amount of the increase in taxes.
- g. The profit picture has declined; it appears that the corporation wants to report higher profits. It will be able to achieve higher profits because of the switch from LIFO.

The results will probably not be worth the price of higher taxes and, therefore, reduced cash flow.

CASE 6-3 MOMENTS TO REMEMBERS

(This case provides an opportunity to review the liquidity of the Eastman Kodak Company.)

- a. 1. days' sales in receivables (use trade receivables

$$\frac{\text{2001}}{\$1,966 + \$109 *}{\$13,234 / 365}$$

$$\frac{\text{2000}}{\$2,245 + \$89 *}{\$13,994 / 365}$$

$$\frac{\$2,075}{\$38.26} = 57.23 \text{ Days}$$

$$\frac{\$2,334}{\$38.34} = 60.88 \text{ Days}$$

\*Assumption made that all of the allowance related to trade receivables

- 2. Accounts receivable turnover

$$\frac{\$13,234}{\$2,075} = 6.38 \text{ Times}$$

$$\frac{\$13,994}{\$2,334} = 6.00 \text{ Times}$$



3. days' sales in inventory

$$\frac{\frac{2001}{\$1,137}}{\$8,670 / 365}$$

$$\frac{\$1,137}{23.75} = 47.87 \text{ Days}$$

$$\frac{\frac{2000}{\$1,718}}{\$8,375 / 365}$$

$$\frac{\$1,718}{22.95} = 74.86 \text{ Days}$$

4. Inventory turnover

$$\frac{\frac{2001}{\$8,670}}{\$1,137} = 7.63 \text{ Times}$$

$$\frac{\frac{2000}{\$8,375}}{\$1,718} = 4.87 \text{ Times}$$

5. Working capital

<u>2001</u>	<u>2000</u>
\$4,683	\$5,491
<u>-5,354</u>	<u>-6,215</u>
<u><u>-\$ 671</u></u>	<u><u>-\$ 724</u></u>

6. Current ratio

$$\frac{\frac{2001}{\$4,683}}{\$5,354} = .82$$

$$\frac{\frac{2000}{\$5,491}}{\$6,215} = .88$$

7. Acid-test ratio

$$\frac{\frac{2001}{\$448 + \$2,337}}{\$5,354} =$$

$$\frac{\$2,785}{\$5,354} = .52$$

$$\frac{\frac{2000}{\$246 + \$2,653}}{\$6,215} =$$

$$\frac{\$2,899}{\$6,215} = .47$$

b. 1. days' sales in receivables

This ratio improved in 2001 declining from 60.88 days to 57.23 days.

2. accounts receivable turnover  
This ratio improved in 2001 increasing from 6.00 times to 6.398 times.
3. days' sales in inventory  
This ratio improved materially decreasing from 74.86 days to 47.87 days.
4. inventory turnover  
This ratio improved materially increasing from 4.87 times to 7.63 times.
5. working capital  
Working capital improved but likely needs substantial additional improvement.
6. current ratio  
The current ratio improved but likely needs substantial additional improvement.
7. acid-test ratio  
The acid-test ratio improved but likely need substantial additional improvement.

c.

Eastman Kodak Company  
Vertical Common-Size  
Consolidated Statement of Financial Position

	At December 31	
	2001	2000
Assets		
Current Assets		
Cash and cash equivalents	3.4	1.7
Receivables, net	17.5	18.7
Inventories, net	8.5	12.1
Deferred income taxes	3.9	4.0
Other current assets	<u>1.8</u>	<u>2.1</u>
Total current assets	35.0	38.6
Property, plant and equipment, net	42.4	41.6
Goodwill, net	7.1	6.7
Other long-term assets	<u>15.5</u>	<u>13.1</u>
Total assets	<u>100.0</u>	<u>100.0</u>
Liabilities and Shareholders' Equity		
Current Liabilities		
Accounts payable and other current liabilities	24.5	23.9
Short-term borrowings	10.3	14.5
Current portion of long-term debt	1.2	1.0
Accrued income taxes	<u>4.1</u>	<u>4.3</u>
Total current liabilities	40.1	43.7
Long-term debt, net of current portion	12.5	8.2
Post employment liabilities	20.4	19.2
Other long-term liabilities	<u>5.4</u>	<u>4.8</u>
Total liabilities	78.3	75.9
Commitments and Contingencies	--	--
Shareholders' Equity		
Common stock	7.3	6.9
Additional paid in capital	6.4	6.1
Retained earnings	55.6	55.4
Accumulated other comprehensive loss	<u>( 4.5)</u>	<u>(3.4)</u>
Shareholders' equity prior to treasury stock	64.8	65.0
Treasury stock	<u>(43.2)</u>	<u>(40.9)</u>
Total shareholders' equity	<u>21.7</u>	<u>24.1</u>
total liabilities and shareholders' equity	<u>100.0</u>	<u>100.0</u>

d. Vertical common-size

Total current assets declined moderately. This decline substantially resulted from a decline in inventories.

Total current liabilities declined moderately. This decline substantially resulted from a decline in short-term borrowings.

Significant increase in long-term debt substantial increase in treasury stock.

e. Accounts receivable liquidity improved material improvement in inventory liquidity.

Current ratio and acid-test ratio likely should be improved. Working capital likely should be improved. To improve these areas short-term borrowings should likely be reduced.

CASE 6-4 THE OTHER SIDE OF LIFO

The Significance of LIFO Liquidation

(This case provides a forum to discuss the effects of LIFO liquidation. The basis of this case is an article that appeared in the Professional Notes section of the Journal of Accountancy, May 1983, pages 120-121.)

- a. The use of historical cost for inventory can result in distorted profits because the costs matched against revenue are not based upon the cost to replace the inventory. For a going concern, the inventory typically will be replaced.

LIFO usually does the best job of matching inventory cost against revenue. But since LIFO does not provide for replacement costs, a distorted profit picture exists even when LIFO is used. When the inventory is reduced, the use of LIFO can result in a material distortion of profit, since old inventory costs become cost of sales.

- b. The steel industry saw the strike as a temporary event. Since the industry was using LIFO inventory, a reduction in the inventory would trigger old cost to be matched against revenue. Assuming the cost of production had increased over the years, the old cost would be lower than current production costs.

If inventories would have been reduced, then profits would have been high during the strike period, resulting in high taxes. When the strike was over, the inventory would have to be replaced. The taxes and the replacement of the inventory would cause a drain on cash flow.

- c. (1) Profits - Profits would be distorted on the high side because of the matching of old cost against the revenue. In some cases, this would be a reduction in a loss to a firm.
- (2) Taxes paid - The distorted profits on the high side would result in higher taxes being paid if the firm is profitable. If the firm has an overall loss, the loss would be reduced, which could reduce a possible tax refund from a loss carryback.
- (3) Cash flow - Cash flow would be reduced because of the effect on taxes explained in (2). Cash flow would also be reduced if the inventory is replenished at a later date.
- d. The reduction in inventories brought out old cost against current revenue. This resulted in distorted profits on the high side. Thus, the quality of earnings was low.
- e. The case indicates that the major reasons inventory was voluntarily reduced during 1980 and 1981 were as follows:

- (1) "Decreased expected demand associated with a recessionary economy."

This would mean that the reduced demand was not anticipated to be temporary. In some cases, the demand may never return for the product.

- (2) "High interest rates resulting in high inventory carrying costs. These high rates also present alternative economic opportunities for funds invested in inventories if there is a belief that the inflation rate will increase in relation to interest rates."

In general, this statement indicates that the high interest rates made it desirable to turn the inventory into cash so that a high interest rate could be earned

on the funds or the firm could avoid paying a high interest rate on needed funds.

- (3) "A sluggish economy that could lead management to minimize losses or improve reported profit."

In general, this statement is indicating that management could prop up earnings by reducing inventories and reporting the resulting high profit.

CASE 6-5 NETWORK SUPREME

(This case provides an opportunity to review the liquidity of a firm that stalled as far as revenue growth. Notice that the firm has immaterial inventory.)

a. 1. Days' Sales in Receivables

$$\frac{\$246,577 + \$47,921}{\$1,083,877/365}$$

99.17 Days

$$\frac{\$211,531 + 33,053}{\$1,007,317/365}$$

88.63 Days

2. Accounts Receivable Turnover

$$\frac{\$1,083,887}{\$246,577 + \$47,921} = 3.68 \text{ Times}$$

$$\frac{\$1,007,311}{\$211,531 + \$33,053} = 4.12 \text{ Times}$$

3. Days' Sales in Inventory

$$\frac{\$3,562}{\$238,649 / 365} = 5.45 \text{ Days}$$

$$\frac{\$10,656}{\$277,446 / 365} = 14.02 \text{ Days}$$

4. Inventory Turnover

<u>1998</u>	<u>1997</u>
$\frac{\$238,649}{\$3,562} =$	$\frac{\$277,446}{\$10,656} =$
6.700 Times	26.04 Times

5. Working Capital

<u>1998</u>	<u>1997</u>
\$1,435,700,000	\$1,470,382,000
(414,695,000)	(321,956,000)
\$1,021,016,000	\$1,148,426,000

6. Current Ratio

<u>1998</u>	<u>1997</u>
$\frac{\$1,435,700,000}{\$414,695,000} = 3.46$	$\frac{\$1,470,382,000}{\$321,956,000} = 4.57$

7. Acid Test Ratio

<u>1998</u>	<u>1997</u>
$\frac{\$1,007,167 + \$246,577}{\$414,695}$	$\frac{\$1,033,473 + 211,531}{\$321,956}$
3.01	3.87

b.

Novell  
Vertical Common-Size  
Balance Sheets

(In Percentage  
October 31)

	1998	1997
ASSETS		
Current assets:		
Cash and short-term investments	53.34%	54.09%
Receivables, less allowances	12.82	11.07
Inventories	.19	.56
Prepaid expenses	3.28	3.02
Deferred and refundable income taxes	4.96	7.02
Other current assets	1.03	1.19
Total current assets	74.62	76.96
Property, plant, and equipment, net	18.00	19.57
Long-term investments	5.97	1.00
Other assets	1.42	2.48
Total assets	100.00	100.00
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	4.05	4.33
Accrued compensation	2.72	2.69
Accrued marketing liabilities	.85	1.45
Other accrued liabilities	3.23	4.46
Income taxes payable	3.33	-
Deferred revenue	7.37	3.92
Total current liabilities	21.55	16.85
Minority interests	.83	1.22
Shareholders' equity (detail omitted)	77.63	81.93
Total liabilities and shareholder's equity	100.00	100.00

c. 1. Days' Sales in Receivables



There appears to be a major problem with the collection of receivables and the problem appears to be getting worse.

2. Accounts Receivable Turnover

There appears to be a major problem with the turnover of accounts receivable and the problem appears to be getting worse.

3. Days' Sales in Inventory

Very few days' sales in inventory and the number of days declined substantially. A substantial decline in inventory.

Apparently with this being a software network company inventory is not substantial. What appears to be a very positive situation may not be. There apparently is a problem with demand.

#### 4. Inventory Turnover

Inventory turnover was very good in 1997 and substantially improved in 1998. This appears to be very positive, but there appears to be a problem with demand.

#### 5. Working Capital

Working capital declined substantially in 1998. This would normally appear to be negative.

This company appears to have too much in working capital. Working capital is over \$1 billion in a company with total assets less than \$2 billion.

#### 6. Current Ratio

The current ratio declined substantially in 1998. This would normally appear to be negative, but this company has more than adequate liquidity.

## 7. Acid Test Ratio

The acid test ratio declined substantially in 1998. This would normally appear to be negative, but this company has more than adequate liquidity.

### d. Vertical Common-Size

Over half of the assets are in cash and short-term investments. This is much more liquidity than required for an efficient operation.

Apparently there is a problem with what to do with the substantial liquidity. Substantial amounts have been used for long-term investments and repurchases of common stock. Neither of these uses grow the company from an operating perspective.

- e. The company has substantial more liquidity than needed for an efficient operation. At the same time there appears to be a problem with the liquidity of receivables.

CASE 6-6 BOOMING RETAIL

(The data for this case relate to W.T. Grant for the years ended January 3, 1966 - 1970. This relatively short case provides insight into why W.T. Grant went bankrupt.)

a.

	Year				
	5	4	3	2	1
Sales	136.2%	131.5%	119.0%	106.4%	100.0%
Net accounts receivable	182.2%	159.8%	135.7%	118.2%	100.0%

b.

$$\text{Accounts Receivable Turnover} = \frac{\text{Net Sales}}{\text{Average Gross Receivables}}$$

$$\text{Year 5: } \frac{\$1,254,131}{(\$419,731 + \$368,267) / 2} = \frac{\$1,254,131}{\$393,999} = 3.18 \text{ times per year}$$

$$\text{Year 4: } \frac{\$1,210,918}{(\$368,267 + \$312,776) / 2} = \frac{\$1,210,918}{\$340,521} = 3.56 \text{ times per year}$$

$$\text{Year 3: } \frac{\$1,096,152}{(\$312,776 + \$272,450) / 2} = \frac{\$1,096,152}{\$292,613} = 3.75 \text{ times per year}$$

$$\text{Year 2: } \frac{\$979,458}{(\$272,450 + \$230,427) / 2} = \frac{\$979,458}{\$251,438} = 3.90 \text{ times per year}$$

c. Yes. With installment sales, the period to pay is relatively long. Thus, it is important that the firms have good credit controls.

d. It appears that the Grand has a problem with credit controls and subsequent collection of the receivables. Net accounts receivable has been increasing much faster than sales. This could result in substantial write-offs of receivables and recognition of losses.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a comment on the trend in selected liquidity ratios for the Boeing Company.
2. This Thomson Analytics exercise provides for a comment on the trend in selected liquidity ratios for Anheuser-Busch and Adolph Coors. It also requires a comparison between the liquidity ratios of Anheuser-Busch and Adolph Coors.
3. This Thomson Analytics exercise provides for a comment on the trend in selected liquidity ratios for Gateway Computer, Apple Computer, Dell Computer, and Hewlett-Packard. It also requires a comparison of the liquidity ratios of these four firms.

# Chapter 7

## Long-Term Debt-Paying Ability

### TO THE NET

1. Walt Disney  
Fiscal Year Ended September 30, 2001
  - a. SIC 7990 Services - Miscellaneous Amusement & Recreation
  - b. Footnote 13 Commitments and Contingencies  
"Management believes that it is not currently possible to estimate the impact, if any, that the ultimate resolution of these matters will have on the Company's results of operations, financial position or cash flows."
  
2. Goodyear Tire & Rubber
  - a. Net periodic pension cost for the year ended December 31, 2001 (A) \$ 138,200,000  
Net Sales (B) \$14,147,200,000  
(A÷B)
  
  - b. Projected benefit obligation \$ 5,215,000,000  
Plan assets 4,176,200,000  
Projected benefit obligation in excess of plan assets \$ 1,038,800,000
  
  - c. Accumulated benefit obligation \$ 3,959,000,000  
Plan assets 3,183,900,000  
Accumulated benefit obligation in excess of plan assets \$ 775,100,000

### 3. Flowers Foods

Ratios for the 52 weeks ended December 29, 2001

#### 1. Times interest earned

$$\frac{(\$26,380,000) + \$36,466,000}{\$36,466,000} = \frac{\$10,086,000}{\$36,466,000} = .28$$

#### 2. Debt Ratio

$$\frac{\$186,214,000 + \$242,057,000 + \$49,783,000}{\$1,099,691,000} = \frac{\$478,054,000}{\$1,099,691,000} = 43.47\%$$

#### 3. Operating Cash Flow/Total Debt

$$\frac{\$79,923,00}{\$186,214,00 + \$242,057,00 + \$49,783,00} = 16.72\%$$

4. Times interest earned and operating cash flow/total debt are relatively low.  
Debt ratio appears to be in a better position than the other two ratios.

## QUESTIONS

7- 1. Yes, profitability is important to a firm's long-term debt-paying ability. Although the reported income does not agree with cash available in the short run, eventually the revenue and expense items do result in cash movements. Because there is a close relationship between the reported income and the ability of the entity to meet its long-run obligations, the major emphasis when determining the long-term debt-paying ability is on the profitability of the entity.

7- 2. (1) Income statement.

(2) Balance sheet.

The income statement approach is important because in the long run, there is usually a relationship between the reported income that is the result of accrual accounting and the ability of the firm to meet its long-term obligations. The balance sheet indicates the amount of funds provided by outsiders in relation to those provided by owners of the firm. If a high proportion of the resources have been provided by outsiders, then this indicates that the risks of the business have been shifted to outsiders.

7- 3. A relatively high, stable coverage of interest over the years is desirable. A relatively low, fluctuating coverage of interest over the years is not desirable.

7- 4. No. The auto manufacturing business is known for its cyclical nature. The times interest expense, therefore, would fluctuate materially. We would expect the auto manufacturer to finance a relatively small proportion of its long-term funds from debt.

7- 5. A telephone company has its rate of return and, therefore, profits controlled by public utility commissions. We would expect the times interest earned to be moderate and relatively stable, which should be a relatively favorable times interest earned ratio. This stability allows for carrying a high portion of debt financing.

7- 6. A firm must pay for the interest capitalized; therefore, this interest should be included along with interest expense in order to obtain total interest.





- 7- 7. To get a better indication of a firm's ability to cover interest payments in the short run, the non-cash charges for depreciation, depletion, and amortization can be added back to the times interest earned numerator. The resulting income can be related to interest earned on a cash basis for a short-run indication of the firm's ability to cover interest.
- 7- 8. The financial statements are predominately prepared based upon historical cost. Seldom is the market value or liquidation value disclosed.
- 7- 9. No, the determination of the current value of the long-term assets is very subjective. The best that can be achieved is a reasonable relationship of long-term assets to long-term debt, based on historical cost or estimates of current value.
- 7-10. The intent of this ratio is to indicate the percentage of the assets that were financed by creditors. The ratio should indicate a reasonably accurate picture of how the assets were financed, but it will not be precise because all of the liabilities have been included, while the assets are at book value, which may be less than or more than their liquidation value.
- 7-11. No, the debt ratio would not be as high as the debt/equity ratio because the debt ratio relates total liabilities to total assets, while the debt/equity ratio relates total liabilities to shareholders' equity. The total asset figure is equal to both the liabilities and the shareholders' equity.
- 7-12. The balance sheet equation has assets = liabilities + shareholders' equity. Given any set of figures that agree with the basic balance sheet equation, the liabilities are the same, whether they are related to assets or shareholders' equity.

For example, assets (\$100,000) = liabilities (\$40,000) + shareholders' equity (\$60,000).

$$\text{Debt Ratio} = \frac{\$40,000}{\$100,000} = 40\%$$

$$\text{Debt/Equity Ratio} = \frac{\$40,000}{\$60,000} = 66 \frac{2}{3}\%$$

- 7-13. Industry averages tend to indicate the degree of debt that is considered to be acceptable for an industry. The industry average does not necessarily indicate the degree of debt that

an individual firm should have, but it is the best indication of a reasonable amount outside of the individual firm.

- 7-14. Operating leases simply require recording rent expense in the income statement accounts. Under a capital lease, the asset and related lease obligations are recorded on the balance sheet of the lessee. The lessee then records depreciation expense and interest expense as would be done if the asset had been acquired with a loan.
- 7-15. If a firm has not capitalized, its leases, then its debt ratios will be lower than those of a firm that has capitalized leases. Also, its times interest earned will be higher. These two factors overstate the debt position.
- 7-16. If leases are capitalized, then more interest expense must be covered. This causes a decline in times interest earned.
- 7-17. Pension claims have the status of tax liens, which gives them senior claim over other creditors.
- 7-18. When an employee is vested in the pension plan, she/he is eligible to receive some pension benefits at retirement regardless of whether they continue working for the employer. ERISA has had a major impact on reducing the vesting time.
- 7-19. Under the Employee Retirement Income Security Act, a contributor to a multiemployer pension plan may be liable, upon withdrawal from or upon termination of such plan, for its share of any unfunded liability.
- 7-20. An operating lease for a relatively long term is a type of long-term financing. Therefore, a part of the lease payment, in reality, is a financing charge called interest. When a portion of operating lease payments is included in fixed charges, it is an effort to recognize the true total interest that the firm is paying.
- 7-21. The Employee Retirement Income Security Act contains a feature that a company can be liable for its pension plan up to 30% of its net worth. Also, the pension claims have the same status as tax liens, which gives them senior claim over other creditors.
- 7-22. Short-term funds in total become part of the total sources of outside funds in the long run. Thus, short-term funds should be included in the debt ratio. Another view is that the debt ratio is intended to relate long-term outside sources of funds to total assets, and short-term funds are not a valid part of

long-term funds. The approach that includes short-term liabilities is the more conservative.

- 7-23. The bond payable account would represent a definite commitment that must be paid at some date in the future. This would be considered to be a "firm" liability. The reserve for rebuilding furnaces does not represent a "firm" commitment to pay out funds in the future, and when funds are used for rebuilding furnaces, this will be at the discretion of management. The reserve for rebuilding furnaces could be considered to be a "soft" liability account.
- 7-24. The specific assets that caused the deferred tax will likely be replaced by similar specific assets in the future and also the firm may expand. The replacement assets are likely to cost more than the original items. This would result in an additional deferred tax. This is the total firm view of deferred taxes and this view indicates that the deferred tax amount may not result in actual cash outlays in the future. In any specific year, there may be a cash outlay because the firm may not have acquired sufficient assets in that year in relation to the assets being expensed.
- 7-25. This tentatively indicates that this firm has higher risk in terms of paying commitments than it did in prior periods and in relation to competitors and the industry.
- 7-26. This would indicate an increase in risk as management will more frequently be faced with debt coming due. It also indicates that short-term debt is becoming a more permanent part of the financial structure of the firm.
- 7-27. This statement would be correct. A footnote will disclose the guaranteed bank loan. The overall potential debt position will not be obvious from the face of the balance sheet.
- 7-28. True. Significant potential liabilities may be described in the contingency footnote. If a contingency loss meets one, but not both, of the criteria for recording, and as a result is not accrued, disclosure by footnote is made when it is at least reasonably possible that there has been an impairment of assets or that a liability has been incurred.
- 7-29. Instead of having a potential additional liability from a pension plan, the plan may be overfunded. This may present an opportunity for the company to cancel the pension plan by paying off the pension obligations and transferring the remaining money in the pension plan to the company.

- 7-30. Most firms must accrue or set a reserve for postretirement benefits other than pensions. Firms can usually spread the catch-up accrual costs over twenty years or take the charge in one lump sum. This choice can represent a major problem when comparing financial results of two or more firms.
- 7-31. Concentration of credit risk (lack of diversification) is perceived as indicative of greater credit risk. Disclosure in this area allows investors, creditors, and other users to make their own assessments of credit risk related to concentration.
- 7-32. Off-balance-sheet means that the risk has not been recorded. There is a potential accounting loss from these obligations that is not apparent from the face of the balance sheet.
- 7-33. The disclosure of the fair value of financial instruments could possibly indicate significant opportunity or additional risk to the company.

PROBLEMS

PROBLEM 7-1

$$\text{Times Interest Earned} = \frac{\text{Recurring Earnings Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$$

Earnings before interest and tax:

Net sales	\$1,079,143
Cost of sales	( 792,755)
Selling and administration	( <u>264,566</u> )
<u>\$ 21,822</u>	

a.  $\text{Times Interest Earned} = \frac{\$21,822}{\$4,311} = 5.06 \text{ times per year}$

b. Cash basis times interest earned:

$$\frac{\$21,822 + \$40,000}{\$4,311} = \frac{\$61,822}{\$4,311} = 14.34 \text{ times per year}$$

PROBLEM 7-2

a.  $\text{Times Interest Earned} = \frac{\text{Recurring Earnings Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$

Income before income taxes	\$675
Plus interest	<u>60</u>
Adjusted income	<u>\$735</u>
Interest expense	<u>\$ 60</u>

$\text{Times Interest Earned} = \frac{\$735}{\$60} = 12.25 \text{ times per year}$

b.  $\text{Fixed Charge Coverage} = \frac{\text{Recurring Earnings Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings, Plus Interest Expense, and Portion of Rentals}}{\text{Interest Expense, Including Capitalized Interest, and Portion of Rentals}}$

Adjusted income from (part a)	\$735
1/3 of operating lease payments (1/3 x \$150)	<u>50</u>
Adjusted income, including rentals	<u>\$785</u>

Interest expense	\$ 60
1/3 of operating lease payments	<u>50</u>
	<u>\$110</u>

Fixed Charge Coverage =  $\frac{\$785}{\$110} = 7.14$  times per year

PROBLEM 7-3

Recurring Earnings, Excluding Interest  
Expense, Tax Expense, Equity Earning,  
a. Times Interest Earned =  $\frac{\text{and Minority Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$

Income before income taxes and extraordinary charges	\$36
Plus interest	<u>16</u>
(1) Adjusted income	<u>52</u>
(2) Interest expense	\$16

Times Interest Earned: (1) divided by (2) = 3.25 times per year

Recurring Earnings, Excluding Interest  
Expense, Tax Expense, Equity Earnings,  
and Minority Earnings + Interest Portion  
b. Fixed Charge Coverage =  $\frac{\text{Of Rentals}}{\text{Interest Expense, Including Capitalized Interest + Interest Portion of Rentals}}$

Adjusted income (part a)	\$ 52
1/3 of operating lease payments (1/3 x \$60)	<u>20</u>
(1) Adjusted income, including rentals	<u>\$72</u>
Interest expense	\$16
1/3 of operating lease payments	<u>20</u>
(2) Adjusted interest expense	<u>\$36</u>

Fixed charge coverage: (1) divided by (2) = 2.00 times per year



PROBLEM 7-4

a. Debt Ratio =  $\frac{\text{TotalLiabilitise}}{\text{TotalAssets}} = \frac{\$174,979}{\$424,201} = 41.2\%$

b. Debt/Equity Ratio =  $\frac{\text{TotalLiabilitise}}{\text{Stockholders' Equity}} = \frac{\$174,979}{\$249,222} = 70.2\%$

c. Ratio of Total Debt to Tangible Net Worth =

$\frac{\text{Total Liabilities}}{\text{Tangible Net Worth}} = \frac{\$174,979}{\$249,222 - \$2,324} = \frac{\$174,979}{\$246,898} = 70.9\%$

d. Kaufman Company has financed over 41% of its assets by the use of funds from outside creditors. The Debt/Equity Ratio and the Debt to Tangible Net Worth Ratio are over 70%. Whether these ratios are reasonable depends upon the stability of earnings.

PROBLEM 7-5

<u>Transaction</u>	<u>Ratio</u>		
	<u>Times</u>	<u>Debt</u>	<u>Total Debt/</u>
	<u>t</u>	<u>Rati</u>	<u>Tangible</u>
	<u>Earned</u>	<u>o</u>	<u>Net Worth</u>

a. Purchase of buildings financed by mortgage	-	+	+	+
b. Purchase inventory on short-term loan	-	+	+	+
c. Declaration and payment of cash dividend	0	+	+	+
d. Declaration and payment of stock dividend	0	0	0	0
e. Firm increases profits by cutting cost of sales	+	-	-	-
f. Appropriation of retained earnings	0	-	-	-
g. Sale of common stock	+	-	-	-
h. Repayment of long-term bank loan	+	-	-	-
i. Conversion of bonds to common stock	+	-	-	-
j. Sale of inventory at greater than cost				

## PROBLEM 7-6

### a. Times Interest Earned:

Times interest earned relates earnings before interest expense, tax, minority earnings, and equity income to interest expense. The higher this ratio, the better the interest coverage. The times interest earned has improved materially in strengthening the long-term debt position. Considering that the debt ratio and the debt to tangible net worth have remained fairly constant, the probable reason for the improvement is an increase in profits.

The times interest earned only indicates the interest coverage. It is limited in that it does not consider other possible fixed charges, and it does not indicate the proportion of the firms resources that have come from debt.

### Debt Ratio:

The debt ratio relates the total liabilities to the total assets.

The lower this ratio, the lower the proportion of assets that have been financed by creditors.

For Arodex Company, this ratio has been steady for the past three years. This ratio indicates that about 40% of the total assets have been financed by creditors. For most firms, a 40% debt ratio would be considered to be reasonable.

The debt ratio is limited in that it relates liabilities to the book value of total assets. Many assets would have a value greater than book value. This tends to overstate the debt ratio and, therefore, usually results in a conservative ratio. The debt ratio does not consider immediate profitability and, therefore, can be misleading as to the firm's ability to handle long-term debt.

### Debt to Tangible Net Worth:

The debt to tangible net worth relates total liabilities to shareholders' equity less intangible assets. The lower this ratio, the lower the proportion of tangible assets that has been financed by creditors.

Arodex Company has had a stable ratio of approximately 81% for the past three years. This indicates that creditors have financed 81% as much as the shareholders after eliminating intangibles from the shareholders contribution--for most firms, this would be considered to be reasonable. The debt to tangible net worth ratio is more conservative than the debt ratio because of the elimination of intangible items. It is also conservative for the

same reason that the debt ratio was conservative, in that book value is used for the assets and many assets have a value greater than book value. The debt to tangible net worth ratio also does not consider immediate profitability and, therefore, can be misleading as to the firm's ability to handle long-term debt.

Collective inferences one may draw from the ratios of Arodex, Company:

Overall it appears that Arodex Company has a reasonable and improving long-term debt position. The debt ratio and the debt to tangible net worth ratios indicate that the proportion of debt appears to be reasonable. The times interest earned appears to be reasonable and improving.

The stability of earnings and comparison with industry ratios will be important in reaching a conclusion on the long-term debt position of Arodex Company.

- b. Ratios are based on past data. The future is what is important, and uncertainties of the future cannot be accurately determined by ratios based upon past data.

Ratios provide only one aspect of a firm's long-term debt-paying ability. Other information, such as information about management and products, is also important.

A comparison of this firm's ratios with ratios of other firms in the same industry would be helpful in order to decide if the ratios are reasonable.

#### PROBLEM 7-7

$$\begin{array}{l} \text{a. 1. Times Interest} \\ \text{Earned} \end{array} = \frac{\text{Recurring Earnings, Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$$

$$\frac{\$162,000}{\$20,000} = 8.1 \text{ times per year}$$

$$\text{2. Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\frac{\$193,000}{\$600,000} = 32.2\%$$

3. Debt/Equity Ratio =  $\frac{\text{Total Liabilities}}{\text{Stockholders' Equity}}$

$$\frac{\$193,000}{\$407,000} = 47.4\%$$

4. Debt to Tangible Net Worth Ratio =  $\frac{\text{Total Liabilities}}{\text{Tangible Net Worth}}$

$$\frac{\$193,000}{\$407,000 - \$20,000} = 49.9\%$$

b. New asset structure for all plans:

Assets	
Current assets	\$226,000
Property, plant, and equipment	554,000
Intangibles	<u>20,000</u>
Total assets	<u>\$800,000</u>

Liabilities and Equity

Plan A

Current Liabilities	\$ 93,000	\$200,000,000/100 =
Long-term debt	100,000	2,000,000 shares
Preferred stock	250,000	
Common equity	<u>357,000</u>	No change in net income
	<u>\$800,000</u>	

Plan B

Current liabilities	\$ 93,000	\$200,000,000/10 =
Long-term debt	100,000	20,000,000 shares
Preferred stock	50,000	
Common stock	120,000	
Premium on common stock	300,000	
Retained earnings	<u>137,000</u>	No change in net income
	<u>\$800,000</u>	

Plan C

Current liabilities	\$ 93,000	Operating Income	\$162,000
Long-term debt	300,000	Interest expense	<u>52,000*</u>
Preferred stock	50,000		110,000
Common equity	<u>357,000</u>	Taxes (40%)	<u>44,000</u>
	<u>\$800,000</u>	Net Income	<u>\$ 66,000</u>

\* \$20,000 + 16% (\$200,000) = \$52,000

1.  $\frac{\text{Recurring Earnings, Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$

Plan A

Plan B

Plan C

$$\frac{\$162,000}{\$20,000} = 8.1 \text{ times}$$

$$\frac{\$162,000}{\$20,000} = 8.1 \text{ times}$$

$$\frac{\$162,000}{\$52,000} = 3.1 \text{ times}$$

2. Debt Ratio =  $\frac{\text{Total Liabilities}}{\text{Total Assets}}$

Plan A

$$\frac{\$193,000}{\$800,000} = 24.1\%$$

Plan B

$$\frac{\$193,000}{\$800,000} = 24.1\%$$

Plan C

$$\frac{\$393,000}{\$800,000} = 49.1\%$$

3. Debt/Equity Ratio =  $\frac{\text{Total Liabilities}}{\text{Stockholders' Equity}}$

Plan A

$$\frac{\$193,000}{\$607,000} = 31.8\%$$

Plan B

$$\frac{\$193,000}{\$607,000} = 31.8\%$$

Plan C

$$\frac{\$393,000}{\$407,000} = 96.6\%$$

4. Debt to Tangible Net Worth =  $\frac{\text{Total Liabilities}}{\text{Tangible Net Worth}}$

Plan A

$$\frac{\$193,000}{\$607,000 - \$20,000} = 32.9\%$$

Plan B

$$\frac{\$193,000}{\$607,000 - \$20,000} = 32.9\%$$

Plan C

$$\frac{\$393,000}{\$407,000 - \$20,000} = 101.6\%$$

c. Preferred Stock Alternative:

Advantages:

1. Lesser drop in earnings per share than under the common stock alternative.
2. Not the absolute reduction in earnings that accompanied the debt alternative.
3. There would be an improvement in the Debt Ratio, Debt/Equity Ratio, and Total Debt to Tangible Net Worth Ratio.
4. Does not have the reduced times interest earned that accompanied alternative of issuing long-term debt.

Disadvantages:

1. An increase in the fixed preferred dividend charge that the firm must pay before any dividends can be paid to common stockholders.





Common Stock Alternative:

Advantages:

1. No increase in fixed obligations.
2. There would be an improvement in the Debt Ratio, Debt/Equity Ratio, and the Total Debt to Tangible Net Worth Ratio.
3. Not the absolute reduction in earnings that accompanied the debt alternative.
4. Does not have the reduced times interest earned that accompanied alternative of issuing long-term debt.

Disadvantages:

1. Maximum dilution in earnings per share of the three alternatives.

Long-Term Bonds Alternative:

Advantages:

1. Higher earnings per share than with common stock.

Disadvantages:

1. Material decline in Times Interest Earned.
2. A material increase in the Debt Ratio, Debt/Equity Ratio, and Total Debt to Tangible Net Worth Ratio.
3. Absolute reduction in earnings.
4. Increase in the interest fixed charge that must be paid.
- d. The 10% preferred stock increased the preferred dividends which are not tax deductible; therefore, the cost of these funds is the 10% amount. The 16% bonds are tax deductible and, therefore, the after-tax cost is 9.6% ( $16\% \times (1-.40)$ ).

Note to Instructor: You may want to take this opportunity to point out to the students that the alternative that should be selected is greatly influenced by the change in earnings and the specific debt structure. The conclusions in this problem would not necessarily be true with changed assumptions.

PROBLEM 7-8

$$a. \text{ Times Interest Earned} = \frac{\text{Earnings before Interest Expense and Tax Expense} + \text{Interest Expense Capitalized} + \text{Minority Earnings} + \text{Equity Earnings}}{\text{Interest Expense Including Capitalized Interest}}$$

Earnings from continuing operations before income taxes and equity earnings

(1) Add back interest expense	(1)	\$ 74,780,000
(2) Adjusted earnings	(2)	<u>\$ 37,646,000</u>
		\$112,426,000

Times interest earned: [(2) divided by (1)] 1.99 times per year

b. Earnings from continuing operations  
Plus:

(1) Interest	\$ 65,135,000
Income taxes	<u>37,394,000</u>
(2) Adjusted earnings	\$140,175,000

Times interest earned: [(2) divided by (1)] 3.72 times per year

c. Removing equity earnings gives a more conservative times interest earned ratio. The equity income is usually substantially more than the cash dividend received from the related investments. Therefore, the firm cannot depend on this income to cover interest payments.

PROBLEM 7-9

$$a. \text{ 1. Times Interest Earned} = \frac{\text{Recurring Earnings} + \text{Interest Expense} + \text{Tax Expense} + \text{Equity Earnings} + \text{Minority Earnings}}{\text{Interest Expense Including Capitalized Interest}}$$

$$\frac{\$95,000}{\$10,000} = 9.5 \text{ times}$$

$$\frac{\$170,000}{\$32,000} = 5.3 \text{ times}$$

$$2. \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}} = \frac{\$160,000}{\$356,000} = 44.9\% \quad \frac{\$575,000}{\$985,000} = 58.4\%$$

$$3. \text{ Debt Equity} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}} = \frac{\$160,000}{\$196,000} = 81.6\% \quad \frac{\$575,000}{\$410,000} = 140.2\%$$

4. Debt to Tangible Net Worth =

$$\frac{\text{Total Liabilities}}{\text{Shareholders' Equity} - \text{Intangible Assets}} = \frac{\$160,000}{\$196,000 - \$11,000} = 86.5\%$$

$$\frac{\$575,000}{\$410,000 - \$20,000} = 147.4\%$$

- b. No, Barker Company has a times interest earned of 5.3 times while the industry average is 7.2 times. This indicates that Barker Company has less than average coverage of its interest. Also, Barker Company has a much higher than average debt/equity, and debt to tangible net worth ratio.
- c. Allen Company has a better times interest earned, debt ratio, debt/equity, and debt to tangible net worth.

PROBLEM 7-10

a. 1. Times Interest Earned =

$$2004: \frac{\$280,000 - \$156,000}{\$17,000} = 7.29 \text{ times per year}$$

$$2003: \frac{\$302,000 - \$157,000}{\$16,000} = 9.06 \text{ times per year}$$

$$2002: \frac{\$286,000 - \$154,000}{\$15,000} = 8.80 \text{ times per year}$$

$$2001: \frac{\$270,000 - \$150,000}{\$14,500} = 8.28 \text{ times per year}$$

$$2000: \frac{\$248,000 - \$147,000}{\$23,000} = 4.39 \text{ times per year}$$

Recurring Earnings, Excluding  
Interest, Tax Expense, Equity  
Earnings, and Minority Earnings +

2. Fixed Charge Coverage =  $\frac{\text{Interest Portion of Rentals}}{\text{Interest Expense, Including Capitalized Interest} + \text{Interest Portion of Rentals}}$

2004:  $\frac{\$280,000 - \$156,000 + \$10,000}{\$17,000 + \$10,000} = 4.96$  times per year

2003:  $\frac{\$302,000 - \$157,000 + \$9,000}{\$16,000 + \$9,000} = 6.16$  times per year

2002:  $\frac{\$286,000 - \$154,000 + \$9,500}{\$15,000 + \$9,500} = 5.78$  times per year

2001:  $\frac{\$270,000 - \$150,000 + \$10,000}{\$14,500 + \$10,000} = 5.31$  times per year

2000:  $\frac{\$248,000 - \$147,000 + \$9,000}{\$23,000 + \$9,000} = 3.44$  times per year

3. Debt Ratio =  $\frac{\text{Total Liabilities}}{\text{Total Assets}}$

2004:  $\frac{\$88,000 + \$170,000}{\$560,000} = 46.07\%$

2003:  $\frac{\$89,500 + \$168,000}{\$554,000} = 46.48\%$

2002:  $\frac{\$90,500 + \$165,000}{\$553,800} = 46.14\%$

2001:  $\frac{\$90,000 + \$164,000}{\$548,500} = 46.31\%$

2000:  $\frac{\$91,500 + \$262,000}{\$537,000} = 65.83\%$

$$4. \text{ Debt/Equity} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}}$$

$$2004: \frac{\$88,000 + \$170,000}{\$302,000} = 85.43\%$$

$$2003: \frac{\$89,500 + \$168,000}{\$296,500} = 86.85\%$$

$$2002: \frac{\$90,500 + \$165,000}{\$298,300} = 85.65\%$$

$$2001: \frac{\$90,000 + \$164,000}{\$294,500} = 86.25\%$$

$$2000: \frac{\$91,500 + \$262,000}{\$183,500} = 192.64\%$$

$$5. \text{ Debt to Tangible Net Worth} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity} - \text{Intangible Assets}}$$

$$2004: \frac{\$88,000 + \$170,000}{\$302,000 - \$20,000} = 91.49\%$$

$$2003: \frac{\$89,500 + \$168,000}{\$296,500 - \$18,000} = 92.46\%$$

$$2002: \frac{\$90,500 + \$165,000}{\$298,300 - \$17,000} = 90.83\%$$

$$2001: \frac{\$90,000 + \$164,000}{\$294,500 - \$16,000} = 91.20\%$$

$$2000: \frac{\$91,500 + \$262,000}{\$183,500 - \$15,000} = 209.79\%$$

- b. Both the times interest earned and the fixed charge coverage are good. The times interest earned is substantially better than the fixed charge coverage because of the operating leases. Both of these ratios materially declined in 2004.

The debt ratio, debt/equity, and debt to tangible net worth materially improved between 2000 and 2001. During the period 2001-2004, these ratios were relatively steady and appeared to be good. The debt to tangible net worth ratio is not as good as the debt/equity ratio because of the influence of intangibles.



CASES

CASE 7-1 EXPENSING INTEREST NOW AND LATER

(This case provides an opportunity to review capitalized interest.)

a.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Income statement interest expense	\$153,000,00	\$204,000,00	\$255,000,00
Capitalized interest	00	00	00
Total interest	<u>95,000,00</u>	<u>97,000,00</u>	<u>\$</u>
	<u>00</u>	<u>00</u>	<u>84,000,000</u>
	<u>\$248,000,00</u>	<u>\$301,000,00</u>	<u>\$339,000,00</u>
	<u>00</u>	<u>00</u>	<u>00</u>

b.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Interest expense on income statement	<u>\$153,000,00</u>	<u>\$204,000,00</u>	<u>\$255,000,00</u>
	<u>00</u>	<u>00</u>	<u>00</u>

c.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Interest added to the cost of property plant, and equipment	<u>\$</u> <u>95,000,000</u>	<u>\$</u> <u>97,000,000</u>	<u>\$</u> <u>84,000,000</u>

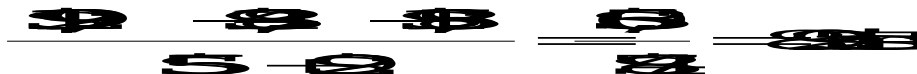
d. It is capitalized in fixed assets and becomes part of the depreciation expense when the fixed asset is depreciated.

e. In the period when interest is capitalized, income is increased. Income is later decreased when the asset is depreciated.

CASE 7-2 CONSIDERATION OF LEASES

(This case provides the opportunity to review the influence of operating and capital leases.)

a.1. Times Interest Earned



2. Fixed Charge Coverage

$$\frac{\$100 - \$10 - \$10 - \$10}{\$100 - \$10 - \$10} = \frac{\$60}{\$80} = 0.75$$

3. Debt Ratio

$$\frac{\$28}{\$54} = 52\%$$

4. Debt/Equity

$$\frac{\$28}{\$36} = 78\%$$

b. Debt ratio considering operating leases

$$\frac{\$32 - \$20}{\$32 - \$20} = \frac{\$12}{\$12} = 1.00$$

- c. Debt ratio without operating leases 59.23%.  
Debt ratio considering operating leases 61.72%.  
The influence of operating leases on the debt ratio was less than 5%. Many would consider this to be immaterial.

- d. The amounts would be the same at the time of the initial entry. Subsequent to the initial entry the asset is depreciated, while the liability is reduced as payments are made.

CASE 7-3 LOCKOUT

(This case provides an opportunity to review an interesting commitments and contingencies footnote of the Boston Celtics.)

The footnote must be subjectively incorporated into the analysis. This is part of the art of analysis.

To quote from the footnote:



"Although the ultimate outcome of this matter cannot be determined at this time, any loss of games as a result of the absence of a collective bargaining agreement or the continuation of the lockout will have a material advance effect on the partnership's financial condition and its results of operations."

In the long run the lockout may be positive as aggregate salaries may be reduced .

CASE 7-4 MANY EMPLOYERS

(This case provides an opportunity to review a multi-employer pension plan. Consider assigning the related case "Play It Safe.")

a.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Contributions (a)	\$ 158,000,000	\$ 154,000,000	\$ 144,000,000
Sales (b)	\$34,301,000,000	\$31,976,900,000	\$28,859,900,000
Contributions/Sales (a÷b)	.46%	.48%	.50%

Contributions appear to be immaterial in relation to sales, but it should be noted that Safeway is in an industry that has relatively low profit margins.

b. The total liability cannot be determined. To quote from the case:

"These plans are generally defined benefit plans; however, in many cases, specific benefit levels are not negotiated with or known by the employer - contributors." ...

"The information required to determine the total amount of this contingent obligation, as well as the total amount of accumulated benefits and net assets of such plans, is not readily available. During 1988 and 1987, the Company sold certain operations. In most cases, the party acquiring the operation agreed to continue making contributions to the plans. Safeway is relieved of the obligations related to these sold operations to the extent that the acquiring parties continue to make contributions."

CASE 7-5 PLAY IT SAFE

(This case provides an opportunity to review a pension footnote. In this case the fair value of plan assets is materially more than the benefit obligation. Consider assigning the related case "Many Employers". The related case indicates that significant pensions were under multi-employer plans.)

a.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Pension expense (A)	Net pension income	Net pension income	Net pension income
Operating revenue (B)	\$34,301,000, 000	\$31,976,000, 000	\$28,859,900,0 00
Pension expense/ Operating revenue (A÷B)			

There was a net pension income of \$27,300,000 in 2001, \$77,300,000 in 2000 and \$35,100,000 in 1999.

b.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Pension expense (A)	Net pension income	Net pension income	Net pension income
Income before income taxes (B)	\$2,095,000,0 00	\$1,866,500,0 00	\$1,674,000,0 00
Pension expense/ Income before income taxes (A÷B)			

There was a net pension income of \$27,300,000 in 2001; \$77,300,000 in 2000 and \$35,100,000 in 1999.

c. Benefit obligation	\$1,286,900,000
Fair value of plan assets	<u>\$1,782,800,000</u>
Overfunded	<u>\$ 495,900,000</u>

There is significant overfunding. The overfunding has resulted in net pension income in 2001, 2000, and 1999.

d. Discount rate used to determine the projected benefit obligation.

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Combined weighted average rate	7.4%	7.6%	7.7%

The discount rate was approximately the same as the rate cited by Accounting Trends & Techniques in this chapter. (A lower discount rate results in a higher benefit obligation.

The lowering of the discount rate results in a higher benefit obligation.)

Expected return on plan assets

	<u>2001</u>	<u>2000</u>	<u>1999</u>
United States Plans	9.0%	9.0%	9.0%
Canadian Plans	8.0%	8.0%	8.0%

These rates are slightly lower than the rate cited by Accounting Trends & Techniques cited in this chapter.

Note that there was no change in the rate between 1999 and 2001.

Rate of compensation increase

	<u>2001</u>	<u>2000</u>	<u>1999</u>
United States Plans	5.0%	5.0%	5.0%
Canadian Plans	5.0%	5.0%	5.0%

The rates used were reasonable in relation to the rates cited in Accounting Trends & Techniques, as cited in the chapter. (Safeway rates are slightly higher.)

A decrease in the rate of compensation projected would decrease the projected benefit obligation. An increase in the rate of compensation projected would increase the projected benefit obligation.

CASE 7-6 RETIREMENT PLANS REVISITED

(This case provides an opportunity to review the influence of pension plans.)

a. Defined contribution

b. 1. Pension expense to operating revenue.

<u>1996</u>	<u>1995</u>	<u>1994</u>
$\frac{\$ 3,200,000}{\$ 1,031,600}$	$\frac{\$ 3,500,000}{\$ 992,100}$	$\frac{\$ 3,700,000}{\$ 869,900}$
.31%	.35%	.43%

2. Pension expense to income before income taxes.

	1996	1995	1994
Pension expense (A)	<u>\$3,200,000</u>	<u>\$3,500,000</u>	<u>\$3,700,000</u>
Income before income taxes (B)	<u>\$50,925,000</u>	<u>\$59,663,000</u>	<u>\$69,870,000</u>
[A÷B]	6.28%	5.87%	5.30%

Opinion: The pension costs do not appear to be material in relation to operating revenue. Pension costs would possibly be considered to be material in relation to income before income taxes.

- c. "The company has a retirement plan which covers most regular employees and provides for annual contributions at the discretion of the board of directors."

The board appears to be exercising its discretion, since pension expense has declined in 1995 and 1996.

#### CASE 7-7 FAIR VALUE OF FINANCIAL INSTRUMENTS

(This case provides an opportunity to review fair value of financial instruments.)

Two of the financial instrument liabilities have an estimated fair value greater than the carrying value.

	<u>Carrying Amount</u>	<u>Estimated Fair Value</u>
Notes payable to shareholders	\$24,178,000	\$24,442,000
Subordinated notes payable, including current portion	\$ 9,185,000	\$11,867,000

Based on estimated fair value the liabilities are more than the booked amount.

CASE 7-8 COMMUNICATIONS

(This case provides an opportunity to view a five year period using vertical common-size.)

a. 1.

Andrew<sub>R</sub> Corporation  
Consolidated Balance Sheet  
Vertical Common-Size (In Part)

	September 30				
	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Liabilities and Stockholders Equity					
Current Liabilities					
Notes payable	5.1	5.6	.5	2.0	2.1
Accounts payable	6.9	7.2	6.5	4.8	5.4
Restructuring reserve	--	--	1.8	.0	.3
Accrued expenses and other liabilities	2.9	2.3	3.2	2.5	2.7
Compensation and related expenses	3.0	3.7	3.3	4.7	4.2
Income taxes	--	.7	--	2.3	2.4
Liabilities and related to discontinued operations	--	--	--	--	.5
Current portion of long-term debt	<u>3.0</u>	<u>1.9</u>	<u>1.2</u>	<u>.7</u>	<u>.7</u>
Total current liabilities	20.9	21.3	16.5	17.1	18.4
Long-term Debt, less current position	4.4	3.1	2.8	2.1	1.5
Minority interest	4.7	8.1	7.3	5.6	5.2
Stockholders' equity	0	1.1	.8	.8	1.3
Common stock	.1	.1	.2	.2	.1
Additional paid-in capital	7.7	7.8	8.4	7.8	7.5
Accumulated other comprehensive income	<5.2>	( 4.4)	( 3.3)	( 1.1)	( .7)
Retained earnings	95.9	93.1	102.3	95.3	79.2
Treasury stock at cost	<u>&lt;28.5&gt;</u>	<u>&lt;30.3&gt;</u>	<u>&lt;34.9&gt;</u>	<u>&lt;27.7&gt;</u>	<u>&lt;12.5&gt;</u>
Total stockholders' equity	<u>70.0</u>	<u>66.4</u>	<u>72.7</u>	<u>74.5</u>	<u>73.7</u>
Total liabilities and stockholders' equity	100.0	100.0	100.0	100.0	100.0

2. - Notes payable increased materially  
 - Current portion of long-term debt increased materially  
 - Deferred liabilities increased materially  
 - Minority interest was eliminated  
 - Accumulated other comprehensive income increased materially

b. 1. Debt ratio

	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Total liabilities	<u>\$257,082</u>	<u>\$274,252</u>	<u>\$182,000</u>	<u>\$174,125</u>	<u>\$182,031</u>
Total assets	\$857,732	\$817,197	\$666,090	\$682,903	\$691,154
	30.0%	33.6%	27.3%	25.5%	26.3%

2. Debt/Equity

	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Total liabilities	<u>\$257,082</u>	<u>\$274,252</u>	<u>\$182,000</u>	<u>\$174,125</u>	<u>\$182,031</u>
Total assets	\$600,650	\$542,945	\$484,010	\$508,778	\$509,123
	42.8%	50.5%	37.6%	34.2%	35.8%



- c. The Andrew<sub>R</sub> Corporation has relatively low debt. The relative debt increased 1997 and 2000, and then declined somewhat in 2001.

### **THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a comment on the trend in selected debt ratios for the Boeing Company.
2. This Thomson Analytics exercise provides for a comment on the trend in selected debt ratios for Anheuser-Busch and Adolph Coors. It also requires a comparison between the debt ratios of Anheuser-Busch and Adolph Coors.
3. This Thomson Analytics exercise provides for a comment on the trend in selected debt ratios for Gateway Computer, Apple Computer, Dell Computer, and Hewlett-Packard. It also requires a comparison of the debt ratios of these four firms.

**TO THE NET**

1. a. Hershey Foods

This information cannot be obtained from the 10-K of Hershey Foods. They incorporate this information by reference.

"The audited consolidated financial statements of the corporation and its subsidiaries and the Report of Independent Public Accountants thereon, as required to be filed with this report, are set forth in item 8 of this report and are incorporated therein by reference to specific pages of the corporation's Annual Report to Stockholders included as Appendix A to the Proxy statement and filed as Exhibit 13 hereto."

b. Same answer as (a) incorporated by reference.

Note: Hershey Foods Corporation released a combined proxy statement and annual report. It was titled "Proxy Statement and 2001 Annual Report to Stockholders."

Using this document the answer to (a) is:

\$207,156,000 (2001)  
\$334,543,000 (2000)  
\$460,310,000 (1999)

Using this document the answer to (b) is:

\$1.165 (2001)  
\$1.08 (2000)  
\$1.00 (1999)

Using the SEC cite ([www.sec.gov](http://www.sec.gov)), select DEF14A, filed March 15, 2002, "other definitive proxy statements." The required information can be located with this proxy statement.

2. General Electric

a. SIC 3600 - Electronic & Other Electrical Equipment

b. \$14,128,000,000 (2001)  
\$12,735,000,000 (2000)  
\$10,717,000,000 (1999)

c. 1. Under Note 1

Accounting changes at January 1, 2001, GE and GECs adopted Statement of Financial Accounting Standards (SFAS) 133, Accounting for Derivative Instruments and Hedging Activities, as amended.

2. The year 2001 has been reported using the new standard, while prior years have been reported using the prior standard. The net effect related to the prior years is reported in the year of change (2001).

3.

a. Wal\*Mart

	<u>Fiscal</u> <u>January 31,</u> <u>2002</u>	<u>Fiscal</u> <u>January 31,</u> <u>2001</u>
	(In Millions)	
Net sales	\$217,799	\$191,329
Cost of sales	<u>171,562</u>	<u>150,255</u>
Gross profit	<u>\$ 46,237</u>	<u>\$41,074</u>

b. K-Mart

	<u>Year Ended*</u> <u>January 31,</u> <u>2002</u>	<u>Year Ended**</u> <u>January 31,</u> <u>2001</u>
	(In Millions)	
Net sales	\$36,151	\$37,028
Cost of sales	<u>29,936</u>	<u>29,658</u>
Gross profit	<u>\$ 6,215</u>	<u>\$ 7,370</u>

\* Included 52 weeks

\*\* Included 53 weeks

c. Wal\*Mart

	(In Millions)	
<u>Gross Profit</u>	<u>\$ 46,237</u>	<u>\$ 41,074</u>
Net Sales	\$217,799	\$191,329
	21.23%	21.47%

K-Mart

	(In Millions)	
<u>Gross Profit</u>	<u>\$ 6,215</u>	<u>\$ 7,370</u>
Net Sales	\$36,151	\$37,028
	17.19%	19.90%

Wal\*Mart has a materially better gross profit than does K-Mart. This gives Wal\*Mart a material profitability advantage.

## QUESTIONS

- 8- 1. Profits can be compared to the sales from which they are the residual. They can be compared to the assets that generate sales. Or, they can be viewed as return to the owner. Each measure looks at profits differently. The trends might move in different directions, depending on the base.
- 8- 2. Extraordinary items are by nature nonrecurring. They should be segregated in order to concentrate on profit that will be expected again the next period. Recurring earnings should be used in trend analysis of profitability.
- 8- 3. Expenses as a percent of sales must have increased if profits as a percent of sales declined.
- 8- 4. Profit margin in jewelry is usually much higher than in groceries. Groceries generate total profits based on volume of sales rather than high markup.
- 8- 5. A drop in profits or a rise in the asset base could cause a decline in the ratio. For example, higher cost of sales could cause a decline; or, a substantial investment in fixed assets that are not yet fully utilized could cause a decline.
- 8- 6. DuPont analysis relates return on assets to turnover and margin. It allows for further analysis of return on assets by this breakdown.
- 8- 7. Operating income is sales minus cost of sales and operating expenses. It does not include non-operating items, such as other income, interest, and taxes. Operating assets are basically current assets plus plant, property, and equipment. They do not include investments, intangibles, and other assets.
- Removing non-operating items from the DuPont analysis gives a clearer picture of productive operations.
- 8- 8. Equity earnings are the owner's proportionate share of the non-consolidated subsidiary.
- 8- 9. Return on assets is a function of net profit margin and total asset turnover. Return on assets could decline, given an increase in net profit margin, if the total asset turnover declined sufficiently.

8-10. Return on investment measures return to all long-term suppliers of funds. It includes net income plus tax-adjusted interest in the numerator and all long-term funds in the denominator. Return on total equity is just return to shareholders.

Return on common equity is return only to common shareholders. Net income is reduced by preferred dividends in the numerator, and only common equity is in the denominator.

8-11. Return on investment is a profitability measure comparing income to capital utilized by the firm. Some measures are return on assets, return on equity, or income available to all capital sources, divided by capital. The given ratio is preferred, since it measures the profit available to all long-term sources of capital against that capital. The interest is multiplied by the tax adjustment factor to put interest on an after-tax basis.

8-12. This cannot be determined based only upon the absolute measures. It is necessary to compare these dollar figures to a base, such as investment or sales. Also, it is necessary to know if nonrecurring items are part of the firm's income picture.

8-13. Interim reports are less reliable because they are not audited, but they can be very meaningful in indicating trends before the end of the year.

8-14. An objective of this opinion is timeliness rather than completeness. Full statements would take too long and involve too much cost to produce.

8-15. Comprehensive income includes net changes in (a) foreign currency translation adjustments, (b) unrealized holding gains and losses on available-for-sale marketable securities, and (c) changes to stockholders equity resulting from additional minimum pension liability adjustment.

8-16. Pro forma financial information is hypothetical or projected amount. Used improperly pro forma financial information can be a negative contribution to financial reporting.

PROBLEMS

PROBLEM 8-1

$$\text{Net Profit Margin} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Net Sales}}$$

	<u>2004</u>	<u>2003</u>
	$\frac{\$52,500}{\$1,050,000}$	$\frac{\$40,000}{\$1,000,000}$
	5.00%	4.00%

$$\text{Return on Assets} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$$

	<u>2004</u>	<u>2003</u>
	$\frac{\$52,500}{\$230,000}$	$\frac{\$40,000}{\$200,000}$
	22.83%	20.00%

$$\text{Total Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

	<u>2004</u>	<u>2003</u>
	$\frac{\$1,050,000}{\$230,000}$	$\frac{\$1,000,000}{\$200,000}$
	4.57 times per year	5.00 times per year

$$= \text{Return on Common Equity} = \frac{\text{Net Income Before Noncurring Items Minus Preferred Dividends}}{\text{Average Common Equity}}$$

	<u>2004</u>	<u>2003</u>
	\$52,500	\$40,000
	<u>\$170,000</u>	<u>\$160,000</u>
	30.88%	25.00%

Ahl Enterprise has had a substantial rise in profit to sales. This is somewhat tempered by a reduction in asset turnover. Given a slight rise in common equity, there is a substantial rise in return on common equity.

PROBLEM 8-2

a.

	<u>2004</u>	<u>2003</u>
Sales	100.0%	100.0%
Cost of goods sold	<u>60.7</u>	<u>60.8</u>
Gross profit	39.3	39.2
Selling expense	14.6	20.0
General expense	<u>10.0</u>	<u>8.3</u>
Operating income	<u>14.7</u>	10.9
Income tax	<u>5.9</u>	<u>4.2</u>
Net income	<u><u>8.8%</u></u>	<u><u>6.7%</u></u>

b. Starr Canning has had a sharp decrease in selling expense coupled with only a modest rise in general expenses giving an overall rise in the net profit margin.

PROBLEM 8-3

Earnings Before interest and tax	\$245,000
Interest (750,000 x 6%)	<u>45,000</u>
Earnings before tax	\$200,000
Tax	<u>80,000</u>
Net income	\$120,000
Preferred dividends	<u>15,000</u>
Income available to common	<u><u>\$105,000</u></u>



$$a. \quad \text{Return on Assets} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}} = \frac{\$120,000}{\$3,000,000} = 4.00\%$$

$$b. \quad \text{Return on Total Equity} = \frac{\text{Net Income Before Nonrecurring Items - Dividends on Redeemable Preferred Stock}}{\text{Average Total Equity}} = \frac{\$120,000}{\$3,000,000} = 4.00\%$$

$$c. \quad \text{Return on Common Equity} = \frac{\text{Net Income Before Nonrecurring Items - Average Common Equity}}{\text{Average Common Equity}} = \frac{\$200,000 - \$80,000 - \$15,000}{\$1,500,000} = 7.00\%$$

$$d. \quad \text{Times Interest Earned} = \frac{\text{Recurring Earnings, Excluding Interest Expense, Tax Expense, Equity Earnings, and Minority Earnings}}{\text{Interest Expense Including Capitalized Interest}} = \frac{\$245,000}{\$45,000} = 5.44 \text{ times per year}$$

PROBLEM 8-4

	Vent Molded Plastics	Vent Molded Plastics
Sales	101.0%	100.3%
Sales returns	7.0	.3
Cost of goods sold	72.1	67.1
Selling expense	9.4	10.1
General expense	7.0	7.9
Other income	.4	.4
Other expense	1.5	1.3
Income tax	4.8	5.5
Net income	5.6%	8.5%

Sales returns are higher than the industry. Cost of sales is much higher, offset some by lower operating expenses. Other expense (perhaps interest) is somewhat higher. Lower taxes are perhaps caused by lower income. Overall profit is less, primarily due to cost of sales.

PROBLEM 8-5

a.  $\frac{\$1,589,150}{\$1,294,966} = 122.72\%$

2004 sales were 122.72% of those in 2003.

b.  $\frac{\$138,204}{\$137,110} = 100.80\%$

2004 net earnings were 100.80% of those in 2003.

c. 1. Net Profit Margin =  $\frac{\text{Net Profit Before Minority Share of Earnings and Nonrecurring Items}}{\text{Net Sales}}$

2004

2003

$\frac{\$149,260}{\$1,589,150} = 9.39\%$

$\frac{\$149,760}{\$1,294,966} = 11.56\%$

2. Return on Assets =  $\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$

2004

2003

$\frac{\$149,260}{\$1,437,636} = 10.38\%$

$\frac{\$149,760}{\$1,182,110} = 12.67\%$

3. Total Asset Turnover =  $\frac{\text{Net Sales}}{\text{Average Total Assets}}$

2004

2003

$\frac{\$1,589,150}{\$1,437,636}$

$\frac{\$1,294,966}{\$1,182,110}$

4. DuPont Analysis: Return on Assets = Net Profit Margin x Total Asset Turnover

2004	10.42*	=	9.39%	x	1.11
2003	12.72*	=	11.56%	x	1.10

\*Rounded causes the difference from the 10.38% and 12.67% computed in part 2.

5.

	<u>2004</u>	<u>2003</u>
Operating income		
Net sales	<u>\$1,589,150</u>	<u>\$1,294,966</u>
Less: Cost of product sold	651,390	466,250
Research and develop-		
ment expenses	135,314	113,100
General and selling	<u>526,680</u>	<u>446,110</u>
Operating income	\$ 275,766	\$ 269,506

$$\text{Operating Income Margin} = \frac{\text{Operating Income}}{\text{Net Sales}}$$

<u>2004</u>	<u>2003</u>
<u>\$275,766</u>	<u>\$269,506</u>
\$1,589,150	\$1,294,966

$$6. \text{ Return on Operating Assets} = \frac{\text{Operating Income}}{\text{Average Operating Assets}}$$

<u>2004</u>	<u>2003</u>
<u>\$1,589,150</u>	<u>\$269,506</u>
\$1,411,686	\$1,159,666
= 19.53%	= 23.24%

$$7. \text{ Operating Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Operating Assets}}$$

<u>2004</u>	<u>2003</u>
<u>\$1,589,150</u>	<u>\$1,294,966</u>
\$1,411,686	\$1,159,666
= 1.13 times	= 1.12 times
per year	per year

8. DuPont Analysis:	Return on Assets	=	Net Profit Margin	x	Total Asset Turnover
	2004		19.61%*	=	17.35% x 1.13
	2003		23.31%*	=	20.81% x 1.12

\*Rounding causes the difference from the 19.53% and 23.24% computed in part 6.

9.		<u>2004</u>	<u>2003</u>
	Net earnings before minority share	\$ 149,260	\$ 149,760
	Interest expense	18,768	11,522
	Earnings before tax	263,762	271,500
	Provision for income tax	114,502	121,740
	Tax rate	43.4%	44.8%
	1 - tax rate	56.6%	55.2%
	(interest expense x (1 - tax rate))	10,623	6,360
	Net earnings before minority share + (interest expense) x (1 - tax rate)		
	Long-term debt + equity	159,883	156,120
	Return on investment	1,019,420	933,232
		15.7%	16.7%

$$10. \text{ Return on Common Equity} = \frac{\text{Net Sales}}{\text{Average Operating Assets}}$$

	<u>2004</u>	<u>2003</u>
	<u>\$138,204</u>	<u>\$137,110</u>
	\$810,292	\$720,530
	= 17.06%	= 19.03%

- d. Profits in relation to sales, assets, and equity have all declined. Turnover has remained stable. Overall, although absolute profits have increased in 2004, compared with 2003, the profitability ratios show a decline.

PROBLEM 8-6

a. 1. Net Profit Margin = 
$$\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Item}}{\text{Net Sales}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$97,051}{\$1,600,000}$	$\frac{\$51,419}{\$1,300,000}$	$\frac{\$45,101}{\$1,200,000}$
= 6.07%	= 3.96%	= 3.76%

2. Return on Assets = 
$$\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Item}}{\text{Average Total Assets}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$97,051}{\$1,440,600}$	$\frac{\$51,419}{\$1,220,000}$	$\frac{\$45,101}{\$1,180,000}$
= 6.04%	= 4.21%	= 3.82%

3. Total Asset Turnover = 
$$\frac{\text{Net Sales}}{\text{Average Total Assets}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$1,600,000}{\$1,440,600}$	$\frac{\$1,300,000}{\$1,220,000}$	$\frac{\$1,200,000}{\$1,180,000}$
= 1.11 times per year	= 1.07 times per year	= 1.02 times per year

4. DuPont Analysis

Return on Assets	=	Net Profit Margin	x	Total Asset Turnover
2004: 6.74%	=	6.07%	x	1.11 times
2003: 4.24%	=	3.96%*	x	1.07 times
2002: 3.84%	=	3.76%*	x	1.02 times

\*Rounding difference from the 4.21% and 3.82% computed in 2.

$$5. \text{ Operating Income Margin} = \frac{\text{Operating Income}}{\text{Net Sales}}$$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
(2) Net sales	\$1,600,000	\$1,300,000	\$1,200,000
Less:			
Material and manufacturing costs of products sold	740,000	624,000	576,000
Research and development	90,000	78,000	71,400
General and selling	<u>600,000</u>	<u>500,500</u>	<u>465,000</u>
(1) Operating income	<u>1,430,000</u>	<u>1,202,500</u>	<u>1,112,400</u>
(1) Dividend by (20)	170,000	97,500	87,600
	10.63%	7.50%	7.30%

$$6. \text{ Return on Operating Assets} = \frac{\text{Operating Income}}{\text{Average Operating Assets}}$$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>Operating Income</u>	<u>\$ 170,000</u>	<u>\$ 97,500</u>	<u>\$ 87,000</u>
<u>Average Operating Assets</u>	<u>\$1,390,200</u>	<u>\$1,160,000</u>	<u>\$1,090,000</u>
	12.23%	8.41%	7.98%

$$7. \text{ Operating Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Operating Assets}}$$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>Net Sales</u>	<u>\$1,600,000</u>	<u>\$1,300,000</u>	<u>\$1,200,000</u>
<u>Average Operating Assets</u>	<u>\$1,390,200</u>	<u>\$1,160,000</u>	<u>\$1,090,000</u>
	1.15 times	1.12 times	1.10 times

8. DuPont Analysis with operating ratios

Return on Assets	=	Net Profit Margin	x	Total Asset Turnover
2004: 12.22%*	=	10.63%	x	1.15
2003: 8.40%*	=	7.50%	x	1.12
2002: 8.03%	=	7.30%	x	1.10

\*Rounding difference from the 12.23%, 8.41%, and 8.04% computed in 6.

$$9. \text{ Return on Investment} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items} - [(\text{Interest Expense})(1 - \text{Tax Rate})]}{\text{Average Long Term Liabilities + Equity}}$$

Estimated tax rate:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
(1) Provision for income taxes	\$ 62,049	\$ 35,731	\$ 32,659
(2) Earnings before income taxes and Minority equity	\$ 159,100	\$ 87,150	\$ 77,760
(1) divided by (2)	39.00%	41.00%	42.00%
1 - tax rate	61.00%	59.00%	58.00%
(3) Interest expense x (1-tax rate)			
\$19,000 x 6.00%	11,590		
\$18,200 x 59.00%		10,738	
\$17,040 x 58.00%			9,883
(4) Earnings before minority equity	97,051	51,419	45,101
(3) plus (4) (A)	108,641	62,157	54,984
(5) Total long-term debt	211,100	212,800	214,000
(6) Total stockholders' equity	811,200	790,100	770,000
(5) plus (6) (B)	1,022,300	1,002,900	984,000
(A) divided by (B)	10.63%	6.20%	5.59%

$$10. \text{ Return on Total Equity} = \frac{\text{Net Income Before Nonrecurring Items} - \text{Dividends on Redeemable Preferred Stock}}{\text{Average Total Equity}}$$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net income etc.	<u>\$ 86,851</u>	<u>\$ 42,919</u>	<u>\$ 37,001</u>
Average total equity	\$811,200	\$790,100	\$770,000

b. All ratios computed indicate a significant improvement in profitability.

PROBLEM 8-7

a. 1. 
$$\text{Net Profit Margin} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Net Sales}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$ 171,115}{\$1,002,100}$	$\frac{\$163,497}{\$980,500}$	$\frac{\$143,990}{\$900,000}$
= 17.08%	= 16.67%	= 16.00%

2. 
$$\text{Return on Assets} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$171,115}{\$839,000}$	$\frac{\$163,497}{\$770,000}$	$\frac{\$143,990}{\$765,000}$
= 20.40%	= 21.23%	= 18.82%

3. 
$$\text{Total Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$1,002,100}{\$ 839,000}$	$\frac{\$980,500}{\$770,000}$	$\frac{\$900,000}{\$765,000}$
= 1.19 times per year	= 1.27 times per year	= 1.18 times per year

4. DuPont Analysis

Return on Assets	=	Operating Income Margin	x	Total Asset Turnover
2004: 20.88%*	=	17.08%	x	1.19 times per year
2003: 21.17%*	=	16.67%	x	1.27 times per year
2002: 18.88%*	=	16.00%	x	1.18 times per year

\*Rounding difference from the 20.40%, 21.23%, and 18.82% computed in 2.



$$5. \text{ Return on Investment} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items} - [(\text{Interest Expense}) \times (\text{Tax Rate})]}{\text{Average Long Term Liabilities + Equity}}$$

Estimated tax rate:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
(1) Provision for income taxes	\$116,473	\$113,616	\$105,560
(2) Earnings before income taxes	\$287,588	\$277,113	\$249,550
tax rate [(1) divided by (2)]	40.50%	41.00%	42.30%
1 - tax rate	59.50%	59.00%	57.70%
(3) Interest expense x (1-tax rate)			
\$14,620 x 59.50%	8,699		
\$12,100 x 59.00%		7,139	
\$11,250 x 57.70%			6,491
(4) Net earnings	171,115	163,497	143,990
(3) plus (4) (A)	179,814	170,636	150,481
(5) Average long-term debt	120,000	112,000	101,000
(6) Average shareholders' equity	406,000	369,500	342,000
(5) plus (6) (B)	526,000	481,500	443,000
(A) divided by (B)	34.19%	35.44%	33.97%

$$6. \text{ Return on Equity} = \frac{\text{Net Income Before Nonrecurring Items} - \text{Dividends on Redeemable Preferred Stock}}{\text{Average Total Equity}}$$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net earnings	<u>\$171,115</u>	<u>\$163,497</u>	<u>\$143,990</u>
Average total equity	\$406,000	\$369,500	\$342,000

$$7. \text{ Sales to Fixed Assets} = \frac{\text{Net Sales}}{\text{Average Net Fixed Assets}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$1,002,100</u>	<u>\$980,500</u>	<u>\$900,000</u>
\$ 302,500	\$281,000	\$173,000
= 3.31	= 3.49	= 5.20

- b. The ratios computed indicate a very profitable firm. Most ratios indicate A very slight reduction in profitability in 2003.

Sales to fixed assets has declined materially, but this is the only ratio for which the trend appears to be negative.

PROBLEM 8-8

a.	1.	Net Profit Margin	$\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Net Sales}}$		
		<u>2004</u>	<u>2003</u>	<u>2002</u>	
		$\frac{\$20,070-\$8,028}{\$297,580}$	$\frac{\$16,660-\$6,830}{\$256,360}$	$\frac{\$15,380-\$6,229}{\$242,150}$	
		= 4.05%	= 3.83%	= 3.78%	
	2.	Return on Assets	$\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$		
		<u>2004</u>	<u>2003</u>	<u>2002</u>	
		$\frac{\$20,070-\$8,028}{\$145,760}$	$\frac{\$16,660-\$6,830}{\$137,000}$	$\frac{\$15,380-\$6,229}{\$136,000}$	
		= 8.26%	= 7.18%	= 6.73%	
	3.	Total Asset Turnover	$\frac{\text{Net Sales}}{\text{Average Total Assets}}$		
		<u>2004</u>	<u>2003</u>	<u>2002</u>	
		$\frac{\$297,580}{\$145,760}$	$\frac{\$256,360}{\$137,000}$	$\frac{\$242,150}{\$136,000}$	
		= 2.04 times per year	= 1.87 times per year	= 1.78 times per year	

4. DuPont Analysis

Return on Assets	=	Operating Income Margin	x	Total Asset Turnover
2004: 8.26%	=	4.05%	x	2.04 times
2003: 7.16%*	=	3.83%	x	1.87 times
2002: 6.73%	=	3.78%	x	1.78 times

\*Rounding difference from the 7.18% computed in 2.

5. Operating Income Margin =  $\frac{\text{Operating Income}}{\text{Net Sales}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$ 26,380}{\$297,580}$	$\frac{\$ 22,860}{\$256,360}$	$\frac{\$ 20,180}{\$242,150}$
= 8.86%	= 8.92%	= 8.33%

6. Return on Operating Assets =  $\frac{\text{Operating Income}}{\text{Average Operating Assets}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$26,380}{\$89,800 + \$45,850}$	$\frac{\$ 22,860}{\$84,500 + \$40,300}$	$\frac{\$ 20,180}{\$83,100 + \$39,800}$
= 19.45%	= 28.32%	= 16.42%

7. Operating Asset Turnover =  $\frac{\text{Net Sales}}{\text{Average Operating Assets}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$297,580}{\$89,800 + \$45,850}$	$\frac{\$256,360}{\$84,500 + \$40,300}$	$\frac{\$242,150}{\$83,100 + \$39,800}$
= 2.19 times per year	= 2.05 times per year	= 1.97 times per year

8. DuPont Analysis with Operating Ratios

Return on Assets	=	Operating Income Margin	x	Total Asset Turnover
2004: 19.40%*	=	8.86%	x	2.19 times
2003: 18.29%*	=	8.92%	x	2.05 times
2002: 16.41%*	=	8.33%	x	1.97 times

\*Rounding difference from the 19.45%, 18.32%, and 16.42% computed in 6.

9.  $\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$ 91,580}{\$297,580}$	$\frac{\$ 80,060}{\$256,360}$	$\frac{\$ 76,180}{\$242,150}$
= 30.77%	= 31.23%	= 31.46%

- b. Net profit margin and total asset turnover both improved. This resulted in a substantial improvement to return on assets.

Operating income margin declined slightly in 2003 after a substantial improvement in 2002. Operating asset turnover improved each year. The result of the improvement in operating income margin and operating asset turnover was a substantial improvement in return on operating assets.

Gross profit margin declined slightly each year.

Overall profitability improved substantially over the three-year period.

PROBLEM 8-9

a. 1.  $\text{Return on Assets} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$

	<u>2004</u>	<u>2003</u>	<u>2002</u>
(A)	$\frac{\$ 2,100,000}{\$ 2,600,000}$	$\frac{\$ 1,950,000}{\$ 2,300,000}$	$\frac{\$ 1,700,000}{\$ 2,200,000}$
	7,000,000	6,200,000	5,800,000
	100,000	100,000	100,000
	<u>10,000,000</u>	<u>9,000,000</u>	<u>8,300,000</u>
(B)	\$19,700,000	\$17,600,000	\$16,400,000

$$2. \text{ Return on Investment} = \frac{\text{Net Income Before Minorities Share of Earnings and Nonrecurring Items} - [(\text{Interest Expense}) \times (\text{Tax Rate})]}{\text{Average (Long Term Liabilities + Equity)}}$$

Estimated tax rate:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
(1) Provision for income taxes	\$ 1,500,000	\$ 1,450,000	\$ 1,050,000
(2) Income before tax	3,600,000	3,400,000	2,750,000
tax rate = (1) divided by (2)	41.67%	42.65%	38.18%
1 - tax rate	58.33%	57.35%	61.82%
(3) Interest expense x (1-tax rate)			
\$80,000 x 58.33%	\$ 466,640		
\$600,000 x 57.35%		\$ 344,100	
\$550,000 x 61.82%			\$ 340,000
(4) Net income	\$ 2,100,000	\$ 1,950,000	\$ 1,700,000
(3) plus (4) (A)	\$ 2,566,640	\$ 2,294,100	\$ 2,040,010
Long-term debt	\$ 7,000,000	\$ 6,200,000	\$ 5,800,000
Preferred stock	100,000	100,000	100,000
Common equity (B)	<u>10,000,000</u>	<u>9,000,000</u>	<u>8,300,000</u>
(A) divided by (B)	15.01%	14.99%	14.37%

$$3. \text{ Return on Total Equity} = \frac{\text{Net Income Before Nonrecurring Items} - \text{Dividends on Redeemable Preferred Stock}}{\text{Average Total Equity}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$2,100,000</u>	<u>\$1,950,000</u>	<u>\$1,700,000</u>
\$100,000 + \$10,000,000	\$100,000 + \$9,000,000	\$100,000 + \$8,300,000
= 20.79%	= 21.43%	= 29.24%

$$4. \text{ Return on Common Equity} = \frac{\text{Net Income Before Nonrecurring Items} - \text{Preferred Dividends}}{\text{Average Common Equity}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$2,100,000 - \$14,000</u>	<u>\$1,950,000 - \$14,000</u>	<u>\$1,700,000 - \$14,000</u>
\$10,000,000	\$9,000,000	\$8,300,000
= 20.86%	= 21.51%	= 20.31%



- b. Return on assets improved in 2003 and then declined in 2004. Return on investment improved each year. Return on total equity improved and then declined. Return on common equity improved and then declined.

In general, profitability has improved in 2003 over 2002 but was down slightly in 2004.

- c. The use of long-term debt and preferred stock both benefited profitability.

Return on common equity is slightly more than return on total equity, indicating a benefit from preferred stock.

Return on total equity is substantially higher than return on investment, indicating a benefit from long-term debt.

PROBLEM 8-10

a.	Sales	\$120,000
	Gross profit (40%)	48,000
	Cost of goods sold (60%)	72,000

Beginning inventory	\$ 10,000
+ purchase	<u>100,000</u>
Total available	110,000
- Ending inventory	<u>?</u>
Cost of goods sold	<u>\$ 72,000</u>

Ending inventory (110,000-72,000) \$ 38,000

- b. If gross profit were 50%, the analysis would be as follows:

Sales	\$120,000
Gross profit (50%)	60,000
Cost of goods sold (50%)	60,000

Beginning inventory	\$ 10,000
Purchases	<u>100,000</u>
Total available	\$110,000
- Ending inventory	<u>50,000</u>
Cost of goods sold	<u>\$ 60,000</u>

If gross profit were higher, the loss would be higher.

PROBLEM 8-11

	<u>Net Profit</u>	<u>Retained Earnings</u>	<u>Total Stockholders' Equity</u>
a. a stock dividend is declared and paid.	0	-	0
b. Merchandise is purchased on credit.	0	0	0
c. Marketable securities are sold above cost.	+	+	+
d. Accounts receivable are collected.	0	0	0
e. A cash dividend is declared and paid.	0	-	-
f. Treasury stock is purchased and recorded at cost.	0	0	-
g. Treasury stock is sold above cost.	0	0	+
h. Common stock is sold.	0	0	+
i. A fixed asset is sold for less than book value.	-	-	-
j. Bonds are converted into common stock.	0	0	+



PROBLEM 8-12

a. 1. Net Profit Margin =  $\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Item}}{\text{Net Sales}}$

2004:  $\frac{\$72,700}{\$980,000} = 7.42\%$

2003:  $\frac{\$64,900}{\$960,000} = 6.76\%$

2002:  $\frac{\$57,800}{\$940,000} = 6.15\%$

2001:  $\frac{\$51,200}{\$900,000} = 5.69\%$

2000:  $\frac{\$44,900}{\$880,000} = 5.10\%$

2. Total Asset Turnover =  $\frac{\text{Net Sales}}{\text{Average Total Assets}}$

2004:  $\frac{\$980,000}{(\$859,000 + \$86,000)/2} = 1.14 \text{ times per year}$

2003:  $\frac{\$960,000}{(\$861,000 + \$870,000)/2} = 1.11 \text{ times per year}$

2002:  $\frac{\$940,000}{(\$870,000 + \$867,000)/2} = 1.08 \text{ times per year}$

2001:  $\frac{\$900,000}{(\$867,000 + \$863,000)/2} = 1.04 \text{ times per year}$

2000: Cannot compute average assets.

Year-End Balance Sheet Figures

2004:  $\frac{\$980,000}{\$859,000} = 1.14$  times per year

2003:  $\frac{\$960,000}{\$861,000} = 1.11$  times per year

2002:  $\frac{\$940,000}{\$870,000} = 1.08$  times per year

2001:  $\frac{\$900,000}{\$867,000} = 1.04$  times per year

2000:  $\frac{\$880,000}{\$863,000} = 1.02$  times per year

3. Return on Assets  $\frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items}}{\text{Average Total Assets}}$

Average Balance Sheet Figures

2004:  $\frac{\$72,700}{(\$859,000 + \$861,000) \div 2} = 8.45\%$

2003:  $\frac{\$64,900}{(\$861,000 + \$870,000) \div 2} = 7.50\%$

2002:  $\frac{\$57,800}{(\$870,000 + \$867,000) \div 2} = 6.66\%$

2001:  $\frac{\$51,200}{(\$867,000 + \$863,000) \div 2} = 5.92\%$

2000: Cannot compute average assets.

Year-End Balance Sheet Figures

2004:  $\frac{\$72,700}{\$859,000} = 8.46\%$

2003:  $\frac{\$64,900}{\$861,000} = 7.54\%$

2002:  $\frac{\$57,800}{\$870,000} = 6.64\%$

2001:  $\frac{\$51,200}{\$867,000} = 5.91\%$

2000:  $\frac{\$44,900}{\$863,000} = 5.20\%$

4. DuPont Return on Assets =  $\frac{\text{Net Profit Margin}}{\text{Total Asset Turnover}}$

Average Balance Sheet Figures

2004: 7.42% x 1.14 times = 8.46%

2003: 6.76% x 1.11 times = 7.50%

2002: 6.15% x 1.08 times = 6.64%

2001: 5.69% x 1.04 times = 5.92%

2002: Cannot compute average assets

Year-End Balance Sheet Figures

2004: 7.42% x 1.14 times = 8.46%

2003: 6.76% x 1.11 times = 7.50%

2002: 6.15% x 1.08 times = 6.64%

2001: 5.69% x 1.04 times = 5.92%

2000: 5.10% x 1.02 times = 5.20%

$$5. \quad \text{Operating Income Margin} = \frac{\text{Operating Income}}{\text{Net Sales}}$$

$$2004: \quad \frac{\$355,000 - \$240,000}{\$980,000} = 11.73\%$$

$$2003: \quad \frac{\$344,000 - \$239,000}{\$960,000} = 10.94\%$$

$$2002: \quad \frac{\$333,000 - \$238,000}{\$940,000} = 10.11\%$$

$$2001: \quad \frac{\$320,000 - \$239,000}{\$900,000} = 9.00\%$$

$$2000: \quad \frac{\$314,000 - \$235,000}{\$880,000} = 8.98\%$$

$$6. \quad \text{Operating Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Operating Assets}}$$

$$2004: \quad \frac{\$980,000}{(\$859,000 + \$80,000 + \$861,000 + \$85,000) / 2} = 1.26 \text{ times per year}$$

$$2003: \quad \frac{\$960,000}{(\$861,000 + \$85,000 + \$870,000 + \$90,000) / 2} = 1.23 \text{ times per year}$$

$$2002: \quad \frac{\$940,000}{(\$870,000 + \$90,000 + \$867,000 + \$95,000) / 2} = 1.21 \text{ times per year}$$

$$2001: \quad \frac{\$900,000}{(\$870,000 + \$95,000 + \$863,000 + \$100,000) / 2} = 1.17 \text{ times per year}$$

2000: Average assets cannot be computed.

Year-End Balance Sheet Figures

$$2004: \frac{\$980,000}{\$859,000 \ominus \$80,000} = 1.26 \text{ times per year}$$

$$2003: \frac{\$960,000}{\$861,000 \ominus \$85,000} = 1.24 \text{ times per year}$$

$$2002: \frac{\$940,000}{\$870,000 \ominus \$90,000} = 1.21 \text{ times per year}$$

$$2001: \frac{\$900,000}{\$867,000 \ominus \$95,000} = 1.17 \text{ times per year}$$

$$2000: \frac{\$880,000}{\$863,000 \ominus \$100,000} = 1.15 \text{ times per year}$$

7. Return on Operating Assets =  $\frac{\text{Operating Income}}{\text{Average Operating Assets}}$

$$2004: \frac{\$355,000 \ominus \$240,000}{(\$859,000 \ominus \$80,000 \oplus \$861,000 \ominus \$85,000) / 2} = 14.79\%$$

$$2003: \frac{\$344,000 \ominus \$239,000}{(\$861,000 \ominus \$85,000 \oplus \$870,000 \ominus \$90,000) / 2} = 13.50\%$$

$$2002: \frac{\$333,000 \ominus \$238,000}{(\$870,000 \ominus \$90,000 \oplus \$867,000 \ominus \$95,000) / 2} = 12.24\%$$

$$2001: \frac{\$320,000 \ominus \$239,000}{(\$867,000 \ominus \$95,000 \oplus \$863,000 \ominus \$100,000) / 2} = 10.55\%$$

2000: Average Assets cannot be computed.

Year-End Balance Sheet Figures

$$2004: \frac{\$355,000 - \$240,000}{\$859,000 - \$80,000} = 14.76\%$$

$$2003: \frac{\$344,000 - \$239,000}{\$861,000 - \$80,000} = 13.53\%$$

$$2002: \frac{\$333,000 - \$238,000}{\$870,000 - \$90,000} = 12.18\%$$

$$2001: \frac{\$320,000 - \$239,000}{\$867,000 - \$95,000} = 10.49\%$$

$$2000: \frac{\$314,000 - \$235,000}{\$863,000 - \$100,000} = 10.35\%$$

8. DuPont Return on Operating Assets =  
Operating Income Margin x Operating Asset Turnover

Average Balance Sheet Figures

$$2004: 11.73\% \times 1.26 = 14.78\%$$

$$2003: 10.94\% \times 1.23 = 13.46\%$$

$$2002: 10.11\% \times 1.21 = 12.23\%$$

$$2001: 9.00\% \times 1.17 = 10.53\%$$

2000: Average assets cannot be computed.

Year-End Balance Sheet Figures

$$2004: 11.73\% \times 1.26 = 14.78\%$$

$$2003: 10.94\% \times 1.24 = 13.57\%$$

$$2002: 10.11\% \times 1.21 = 12.23\%$$

$$2001: 9.00\% \times 1.17 = 10.53\%$$

$$2000: 8.98\% \times 1.15 = 10.33\%$$

$$9. \quad \text{Sales to Fixed Assets} = \frac{\text{Net Sales}}{\text{Average Net Fixed Assets}}$$

$$2004: \quad \frac{\$980,000}{(\$500,000 + \$491,000) \div 2} = 1.98$$

$$2003: \quad \frac{\$960,000}{(\$491,000 + \$485,000) \div 2} = 1.97$$

$$2002: \quad \frac{\$940,000}{(\$485,000 + \$479,000) \div 2} = 1.95$$

$$2001: \quad \frac{\$900,000}{(\$479,000 + \$479,000) \div 2} = 1.90$$

2000: Average net fixed assets cannot be computed.

Year-End Balance Sheet Figures

$$2004: \quad \frac{\$980,000}{\$500,000} = 1.96$$

$$2003: \quad \frac{\$960,000}{\$491,000} = 1.96$$

$$2002: \quad \frac{\$940,000}{\$485,000} = 1.94$$

$$2001: \quad \frac{\$900,000}{\$479,000} = 1.88$$

$$2000: \quad \frac{\$880,000}{\$470,000} = 1.87$$

$$10. \text{ Return on Investment} = \frac{\text{Net Income Before Minority Share of Earnings and Nonrecurring Items} - [\text{Interest Expense} (1 - \text{Tax Rate})]}{\text{Average (Long-Term Liabilities + Equity)}}$$

Average Balance Sheet Figures

$$2004: \frac{\$72,700 + \$6,500(1 - .33)}{(\$859,000 + \$194,000 + \$861,000 + \$195,000)/2} = 11.58\%$$

$$2003: \frac{\$64,900 + \$6,700(1 - .34)}{(\$861,000 + \$195,000 + \$870,000 + \$195,500)/2} = 10.35\%$$

$$2002: \frac{\$57,000 + \$8,000(1 - .34)}{(\$870,000 + \$195,500 + \$867,000 + \$195,000)/2} = 9.37\%$$

$$2001: \frac{\$51,200 + \$8,100(1 - .30)}{(\$867,000 + \$195,000 + \$863,000 + \$196,500)/2} = 8.50\%$$

2000: Average (Long-Term Liabilities + Equity) cannot be computed.

Year-End Balance Sheet Figures

$$2004: \frac{\$72,700 + \$6,500(1 - .33)}{\$859,000 + \$194,000} = 11.59\%$$

$$2003: \frac{\$64,900 + \$6,700(1 - .34)}{\$861,000 + \$195,500} = 10.42\%$$

$$2002: \frac{\$57,800 + \$8,000(1 - .34)}{\$870,000 + \$195,500} = 9.35\%$$

$$2001: \frac{\$51,200 + \$8,100(1 - .30)}{\$867,000 + \$195,000} = 8.46\%$$

$$2000: \frac{\$44,900 + \$11,000(1 - .34)}{\$863,000 + \$196,500} = 7.83\%$$



11. 
$$\text{Return on Total Equity} = \frac{\text{Net Income Before Nonrecuring Items Dividends Redeemable Preferred Stock}}{\text{Average Total Equity}}$$

Average Balance Sheet Figures

2004: 
$$\frac{\$72,700 - \$6,400}{(\$520,000 + \$518,000) \div 2} = 12.77\%$$

2003: 
$$\frac{\$64,900 - \$6,400}{(\$518,000 + \$515,000) \div 2} = 11.33\%$$

2002: 
$$\frac{\$57,800 - \$6,400}{(\$515,000 + \$510,000) \div 2} = 10.03\%$$

2001: 
$$\frac{\$51,200 + \$6,400}{(\$510,000 + \$559,000) \div 2} = 8.38\%$$

2000: Average total equity cannot be computed.

Year-End Balance Sheet Figures

2004: 
$$\frac{\$72,700 - \$6,400}{\$520,000} = 12.75\%$$

2003: 
$$\frac{\$64,900 - \$6,400}{\$518,000} = 11.29\%$$

2002: 
$$\frac{\$57,800 - \$6,400}{\$515,000} = 9.98\%$$

2001: 
$$\frac{\$51,200 - \$6,400}{\$510,000} = 8.78\%$$

2000: 
$$\frac{\$44,900}{\$559,000} = 8.03\%$$

$$12. \text{ Return on Common Equity} = \frac{\text{Net Income Before Nonrecurring Items - Preferred Dividends}}{\text{Average Common Equity}}$$

Average Balance Sheet Figures

$$2004: \frac{\$72,700 - \$6,400 - \$6,300}{(\$520,000 + \$70,000 + \$518,000 + \$70,000) / 2} = 13.36\%$$

$$2003: \frac{\$64,900 - \$6,400 - \$6,300}{(\$518,000 + \$70,000 + \$515,000 + \$70,000) / 2} = 11.69\%$$

$$2002: \frac{\$57,800 - \$6,400 - \$6,300}{(\$515,000 + \$70,000 + \$510,000 + \$70,000) / 2} = 10.19\%$$

$$2001: \frac{\$51,200 - \$6,400 - \$6,300}{(\$510,000 + \$70,000 + \$559,000 + \$120,000) / 2} = 8.76\%$$

2000: Average common equity cannot be computed.

Year-End Balance Sheet Figures

$$2004: \frac{\$72,700 - \$6,400 - \$6,300}{\$520,000 + \$70,000} = 13.33\%$$

$$2003: \frac{\$64,900 - \$6,400 - \$6,300}{\$518,000 + \$70,000} = 11.65\%$$

$$2002: \frac{\$57,800 - \$6,400 - \$6,300}{\$515,000 + \$70,000} = 10.13\%$$

$$2001: \frac{\$51,200 - \$6,400 - \$6,300}{\$510,000 + \$70,000} = 8.75\%$$

$$2000: \frac{\$44,900 - \$10,800}{\$559,000 + \$120,000} = 7.77\%$$

$$13. \quad \text{GrossProfitMargin} = \frac{\text{GrossProfi}}{\text{NetSales}}$$

$$2004: \quad \frac{\$355,000}{\$980,000} = 36.22\%$$

$$2003: \quad \frac{\$344,000}{\$960,000} = 35.83\%$$

$$2002: \quad \frac{\$333,000}{\$940,000} = 35.43\%$$

$$2001: \quad \frac{\$320,000}{\$900,000} = 35.56\%$$

$$2000: \quad \frac{\$314,000}{\$880,000} = 35.68\%$$

- b. In general, the profitability appears to be very good and the trend is positive.

There was not a significant difference in results between using average balance sheet figures and year-end figures. The year-end figure allowed for an additional year was not a very profitable year in relation to subsequent years.

CASES

CASE 8-1 JEFF'S SELF-SERVICE STATION

Profitability Planning

(This case is effective in illustrating the entity concept, return on investment, cash flow, and the subjective nature of decision making.)

a. Indicated return on investment:

Average profit for 2004 and 2003:	2004: \$20,630
	2003: <u>17,925</u>
	\$38,555
	Average \$19,277

Depreciation as computed on the prior cost base	\$ 1,000
Depreciation as computed on the purchase cost	<u>(2,000)</u>
Adjusted profit	18,277
Tax, 50% rate	<u>9,139</u>
Net income	<u>\$ 9,138</u>

$$\text{Return on Investment} = \frac{\$9,138}{\$70,000} = 13.05\%$$

b. Indicated return on investment if help were hired to operate the station:

Adjusted profit in part (a)	\$18,277
Less cost of hired help	<u>10,000</u>
New adjusted profit	8,277
Tax, 50% rate	<u>4,139</u>
Net income	<u>\$ 4,138</u>

$$\text{Return on Investment} = \frac{\$4,138}{\$70,000} = 5.91\%$$

c. In part a, there is no salary expense. In part b, the salary expense for hired help of \$10,000 is deducted. This lowers the taxable income and taxes, giving a net effect of \$5,000. The rate of return in part (a) must be higher to compensate for the opportunity cost of the salary to the owner.

The difference between the rates of return is misleading in terms of judging the investment. The records only reflect the actual cost, while disregarding opportunity cost and personnel time not compensated. All costs need to be considered when judging the investment.

d. Indicated cash flow:

Receipts:	<u>2005</u>
Revenue	\$185,060
Outlays:	
Cost of goods sold	160,180
Added inventory	10,000
Real estate and property taxes	1,100
Repairs and maintenance	1,470
Other expenses	<u>680</u>
Total outlays	173,430
Net cash flow, excluding tax expense	11,630
Less taxes (a)	<u>1,915</u>
Net cash flow	<u><u>\$ 1,815</u></u>
(a) Cash flow prior to taxes	\$ 11,630
Add inventory	10,000
Deduct depreciation	<u>(2,000)</u>
Profit	19,630
Taxes	<u><u>\$ 9,815</u></u>

e. Many other considerations can be discussed. Some of these include:

1. Future tax rate.
2. Psychic value of owning the business.
3. Can Mr. Dearden adequately serve as manager?
4. Will he be able to maintain or increase the business that was enjoyed by Mr. Szabo?
5. Will there be appreciation in the value of the property?
6. Other investment alternatives.

- f. This is a subjective question. Either a yes or no answer is acceptable. This question should be discussed in relation to the above questions.

CASE 8-2 THE TALE OF THE SEGMENTS

a. Nongeographic

1. Horizontal common-size analysis for net sales

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Net sales			
Automotive Systems Group	112.8	105.5	100.0
Controls Group	118.3	108.7	100.0
Total	114.2	106.3	100.0

The automotive systems group and the control group increased sales a material amount. Controls group increased sales substantially more than automotive systems group.

2. Horizontal common-size analysis for operating income

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Automotive Systems Group	105.6	112.1	100.0
Controls Group	139.5	115.8	100.0
Total	112.4	112.9	100.0

3. Horizontal common-size analysis for capital expenditures

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Automotive Systems Group	125.5	107.0	100.0
Controls Group	94.5	102.5	100.0
Total	120.9	106.4	100.0

Automotive systems group increased materially while the controls group decreased substantially. Overall capital expenditures increased materially.

4. Vertical common-size analysis for net sales

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Automotive Systems Group	73.9	74.3	74.8
Controls Group	<u>26.1</u>	<u>25.7</u>	<u>25.2</u>
Total	100.0	100.0	100.0

The automotive systems group is the dominant group.

b. Geographic Segments

1. Horizontal common-size analysis for net sales

	<u>2001</u>	<u>2000</u>	<u>1999</u>
North America	110.7	108.2	100.0
Europe	96.7	98.5	100.0
Other Foreign	265.9	128.5	100.0
Total	114.2	106.3	100.0

North America increased materially. Europe decreased substantially. The largest increase was in other foreign. This segment increase was far greater than the other segments.

2. Vertical common-size analysis for net sales

	<u>2001</u>	<u>2000</u>	<u>1999</u>
North America	62.9	66.0	34.8
Europe	25.6	28.0	30.1
Other Foreign	<u>11.6</u>	<u>6.0</u>	<u>5.1</u>
Total	100.0	100.0	100.0

North America decreased moderately. Europe decreased materially. Other foreign increased materially.

3. Horizontal common-size analysis for long-lived assets

	<u>2001</u>	<u>2000</u>	<u>1999</u>
North America	117.7	108.3	100.0
Europe	103.7	96.0	100.0
Other Foreign	108.5	282.6	100.0
Total	119.2	115.5	100.0

North America increased materially. Europe increased slightly. Other foreign increased materially. This segment increased materially more than the other segments. The total increased materially.

4. Vertical common-size analysis for long-lived assets

	<u>2001</u>	<u>2000</u>	<u>1999</u>
North America	63.5	60.3	64.3
Europe	25.7	24.5	29.5
Other Foreign	<u>10.9</u>	<u>15.2</u>	<u>6.2</u>
Total	100.0	100.0	100.0

North America decreased slightly. Europe decreased materially. Other foreign increased materially.

CASE 8-3 THE STORY OF STARBUCKS - IN SEGMENTS

a. Using operating segment

1. Horizontal common-size analysis for net sales

	<u>Percentage</u>		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Revenues:			
North American retail	151.7	126.2	100.0
Business Alliances	152.6	126.7	100.0
All other business units	209.5	152.2	100.0
Intersegment revenues	328.2	149.9	100.0
Total revenues	157.0	1219.1	100.0

All areas increased materially. Other than intersegment revenues, all other business units increased the most.

2. Horizontal common-size analysis for earnings before income taxes

	<u>Percentage</u>		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
North American retail	160.7	119.4	100.0
Business Alliances	151.3	132.3	100.0
All other business units	306.2	232.9	100.0

All areas increased materially. All the other business units the most.



3. Relating depreciation and amortization to identifiable assets (years 2000, and 2001).

	Percentage	
	2001	2000
North American retail	13.2	14.2
Business Alliances	9.2	6.7
All other business units	8.2	9.1
Unallocated corporate expenses	3.6	3.4
Total depreciation and amortization	8.8	8.7

North American retail has the highest depreciation and amortization in relation to identifiable assets. This likely means that North American retail has a larger proportion of new assets than the other segments.

b. Using geographic area

1. Horizontal common-size analysis of revenues from external customers

	Percentage		
	2001	2000	1999
United States	156.8	130.2	100.0
Foreign countries	<u>158.6</u>	<u>121.9</u>	<u>100.0</u>
Total	<u>157.0</u>	<u>129.1</u>	<u>100.0</u>

United States and foreign countries increased materially. Foreign countries increased slightly better than the United States.

2. Vertical common-size analysis of long-lived assets

	Percentage	
	2001	2000
United States	86.0	88.0
Foreign countries	<u>14.0</u>	<u>12.0</u>
Total	<u>100.0</u>	<u>100.0</u>

The United States has the highest allocation of long-lived assets.

CASE 8-4 TIDE, PAMPERS, AND ETC.

(This case presents the opportunity to compute profitability ratios for The Procter & Gamble Company.)

a. 1. Net Profit Margin =

<u>1998</u>	<u>1997</u>
$\frac{\$3,780}{\$37,154} = 10.17\%$	$\frac{\$3,415}{\$35,764} = 9.55\%$

2. Total Asset Turnover

<u>1998</u>	<u>1997</u>
$\frac{\$37,154}{\$30,966} = 1.20 \text{ times}$	$\frac{\$35,764}{\$27,544} = 1.30 \text{ times}$

3. Return on Assets

<u>1998</u>	<u>1997</u>
$\frac{\$3,780}{\$30,966} = 12.21\%$	$\frac{\$3,415}{\$27,544} = 12.40\%$

4. Operating Income Margin

<u>1998</u>	<u>1997</u>
$\frac{\$6,055}{\$37,154} = 16.30\%$	$\frac{\$5,488}{\$35,764} = 15.35\%$

5. Return on Operating Assets

<u>1998</u>	<u>1997</u>
$\frac{\$6,055}{\$30,966 - \$7,011 - \$1,198} = 26.62\%$	$\frac{\$5,488}{\$27,544 - \$3,949 - \$1,430} = 24.76\%$

\*Exclusion of other non-current assets is open to judgment. The content of this account is not clear.

6. Sales to Fixed Assets

1998

$$\frac{\$37,154}{\$12,180} = \text{timesperyear}$$

1997

$$\frac{\$35,764}{\$11,376} = \text{timesperyear}$$

7. Return on investment

1998

$$\frac{\$3,780 + \$548 \times (1 - 33.78)}{\$3,765 + \$428 + \$3,287 + \$12,236} = 21.01$$

1997

$$\frac{\$3,415 + \$457 \times (1 - 34.94\%)}{\$4,143 + \$559 + \$2,998 + \$12,046} = 18.80$$

8. Return on total Equity

1998

$$\frac{\$3,780}{\$12,236} = 30.89\%$$

1997

$$\frac{\$3,415}{\$12,046} = 28.35\%$$

9. Return on Common Equity

1998

$$\frac{\$3,780}{\$12,236 - \$1,821} = 35.30\%$$

1997

$$\frac{\$3,415 - \$104}{\$12,046 - \$1,859} = 32.50\%$$

10. Gross Profit Margin

1998

$$\frac{\$37,154 - \$21,064}{\$37,154} = 43.31\%$$

1997

$$\frac{\$35,764 - \$20,510}{\$35,764} = 42.65\%$$

- b. More profitability measures improved than those that decline. In general very good improvement.

Profitability measures that improved:

Net Profit Margin (material improvement)  
 Operating Income Margin  
 Return on Operating Asset  
 Return on Investment  
 Return on Total Equity  
 Return on Common Equity (probably considered material)  
 Gross Profit Margin

CASE 8-5 VEHICLES AND HOUSING

(This case presents the opportunity to compute profitability ratios for Coachmen Industries, Inc.)

- a. 1. Net Profit Margin

<u>1998</u>	<u>1997</u>
$\frac{\$33,062,608}{\$756,029,26} = 4.37\%$	$\frac{\$24,762,624}{\$661,591,85} = 3.74\%$

2. Total Asset Turnover

<u>1998</u>	<u>1997</u>
$\frac{\$756,029,26}{\$268,476,26} = 2.82 \text{ times per year}$	$\frac{\$661,591,85}{\$259,062,06} = 2.55 \text{ times per year}$

3. Return on Assets

<u>1998</u>	<u>1997</u>
$\frac{\$33,062,608}{\$268,476,26} = 12.31\%$	$\frac{\$24,762,624}{\$259,062,06} = 9.56\%$

4. Operating Income Margin

<u>1998</u>	<u>1997</u>
$\frac{\$45,927,853}{\$756,029,26} = 6.07\%$	$\frac{\$35,260,319}{\$661,591,85} = 5.33\%$

5. Return on Operating Assets

1998

$$\frac{\$45,927,83}{\$268,476,86 - \$19,992,87} = 18.48\%$$

1997

1997

$$\frac{\$35,260,39}{\$259,062,06 - \$22,521,92} = 14.91\%$$

6. Sales to Fixed Assets

1998

$$\frac{\$756,029,26}{\$63,072,14} = 11.99 \text{ times per year}$$

1997

$$\frac{\$661,591,85}{\$46,601,62} = 14.20 \text{ times per year}$$

7. Return on Investment

1998

$$\frac{\$33,062,60 + [(\$1,738,68) \times (1 - 34.26)]}{\$10,191,47 + \$7,108,95 + \$205,457,60} = 15.36\%$$

1997

$$\frac{\$24,762,62 + [(\$2,544,01) \times (1 - 36.22)]}{\$12,591,14 + \$6,658,87 + \$190,135,02} = 12.60\%$$

8. Return on Total Equity

1998

$$\frac{\$33,062,60}{\$205,457,60} = 16.09\%$$

1997

$$\frac{\$24,762,62}{\$190,135,79} = 13.02\%$$

9. Gross Profit Margin

1998

$$\frac{\$109,910,81}{\$756,029,52} = 14.54\%$$

1997

$$\frac{\$92,755,01}{\$661,591,18} = 14.02\%$$

- b. More profitability measures improved than those that declined. In general, a very good improvement.

Profitability measures that improved:

Net Profit Margin (would be considered to be material)  
Total Asset Turnover (would be considered to be material)  
Return on Assets (would be considered to be material)  
Operating Income Margin (would be considered to be material)  
Return on Operating Assets (would be considered to be material)  
Return on Investment (would be considered to be material)  
Gross Profit Margin

Profitability measures that declined:

This decline is misleading because of the substantial increase in fixed assets.

CASE 8-6 CARS, TRUCKS, ETC.

(This case provides an opportunity to view unit sales of the Ford Motor Company on horizontal common-size.)

1. Horizontal Common-Size Statement for the period 1995-2001, (Summary of Vehicle Unit Sales

	Percentage						
	2001	2000	1999	1998	1997	1996	1995
North America							
United States							
Cars	80.8	100.5	97.6	88.4	91.3	93.7	100.0
Trucks	110.4	121.8	119.5	100.7	107.9	100.7	100.0
Total United States	97.3	112.3	109.8	99.9	100.6	97.6	100.0
Canada	96.5	118.1	113.4	109.8	125.6	101.6	100.0
Mexico	506.3	459.4	356.3	321.9	303.1	209.4	100.0
Total North America	100.3	115.3	111.9	102.1	103.6	98.7	100.0
Europe							
Britain	128.4	96.0	104.4	100.4	94.0	104.0	100.0
Germany	93.6	78.2	86.3	108.6	112.5	106.6	100.0
Italy	129.0	115.2	108.3	106.2	128.5	93.3	100.0
Spain	111.3	112.5	112.5	96.9	96.9	96.9	100.0
France	98.8	95.8	104.2	103.6	92.7	117.6	100.0
Other countries	192.7	183.9	184.6	131.8	111.2	118.5	100.0
Total Europe	126.4	110.1	114.7	108.3	105.3	106.5	100.0
Other International							
Brazil	62.2	66.7	58.2	88.6	106.5	94.5	100.0
Australia	82.7	89.9	89.9	95.7	95.0	99.3	100.0
Taiwan	50.0	59.4	52.8	72.6	74.5	81.1	100.0
Argentina	60.4	102.1	125.0	202.1	239.0	133.3	100.0
Japan	31.6	45.6	56.1	43.9	70.2	91.2	100.0
Other countries	290.5	316.4	123.9	138.8	153.7	120.9	100.0
Total Other International	82.1	98.5	76.5	97.6	115.7	98.9	100.0
Total Worldwide							
Vehical unit							
Sales	105.8	112.4	109.3	103.3	105.2	100.7	100.0

2. There was an immaterial increase in vehicle unit sales between 1995 and 2001. Impressive increases were in Mexico, other Europe countries, and other countries international. Major decreases were in other international, especially Japan. United States sales were flat with cars declining and trucks increasing.

CASE 8-7 SHOES, SHOES, SHOES

(This case provides an opportunity to view a shoe company from 1997-2001. Both a vertical and horizontal is called for).

- a. 1. Vertical common-size statement for 1997-2001  
Net sales as the base

	Percentage				
	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Income statement data					
Net sales	100.0	100.0	100.0	100.0	100.0
Cost of sales	<u>71.6</u>	<u>71.3</u>	<u>70.0</u>	<u>70.0</u>	<u>70.6</u>
Gross profit	28.4	28.7	30.0	30.0	29.4
Selling, general and administrative expenses	23.7	24.1	23.8	23.7	24.1
Operating income	4.7	4.6	6.2	6.3	5.3
Interest expense	<u>.5</u>	<u>.8</u>	<u>.3</u>	<u>.2</u>	<u>.4</u>
Income before income taxes	4.2	3.8	5.9	6.1	5.0
Income tax expense	<u>1.6</u>	<u>1.5</u>	<u>2.3</u>	<u>2.4</u>	<u>2.0</u>
Net income	<u>2.6</u>	<u>2.3</u>	<u>3.5</u>	<u>3.7</u>	<u>3.0</u>

2. Net income improved between 1997 and 1999. Items contributing to this improvement were cost of sales, selling, general and administrative expenses; and interest expense.

There was a substantial decline in net income between 1999 and 2001. Items contributing to this decline were cost of sales; and interest expense.



- b. 1. Horizontal common-size statement for 1997-2001.

1997 as the base

	Percentage				
	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Income statement data					
Net sales	193.3	169.6	137.9	113.6	100.0
Cost of sales	<u>196.3</u>	<u>171.4</u>	<u>136.9</u>	<u>112.8</u>	<u>100.0</u>
Gross profit	186.2	165.3	140.3	115.8	100.0
Selling, general and administrative expenses	189.7	169.4	136.1	111.8	100.0
Operating income	170.6	146.5	159.5	133.7	100.0
Interest expense	<u>249.5</u>	<u>347.4</u>	<u>110.7</u>	<u>55.6</u>	<u>100.0</u>
Income before income taxes	164.7	131.5	163.2	139.5	100.0
Income tax expense	<u>156.3</u>	<u>131.5</u>	<u>165.2</u>	<u>141.3</u>	<u>100.0</u>
Net income	<u>170.1</u>	<u>131.6</u>	<u>161.8</u>	<u>138.6</u>	<u>100.0</u>

2. Net income increased materially from 1997 to 1999. There was a major decline in net income in 2000, but rebounded materially in 2001.

Cost of sales increased substantially in 2000 in relation to sales and also in 2001.

Selling, general and administrative expenses were in line with net sales increase in each year.

Interest expense increased materially in 2000 and 2001 in relation to net sales.

Income tax expense increased materially in 1998 and 1999 in relation to net sales.

Income tax expense improved materially in 2000, and 2001 in relation to net sales.

### **THOMSON ANALYTICS™**

1. This Thomson Analytics exercise provides for a comment on the trend on selected profitability ratios for the Boeing Company.
2. This Thomson Analytics exercise provides for a comment on the trend in selected profitability ratios for Anheuser-Busch and Adolph Coors. It also requires a comparison between the profitability ratios of Anheuser-Busch and Adolph Coors.
3. This Thomson Analytics exercise provides for a comment on the trend in selected profitability ratios for Gateway Computer, Apple Computer, Dell Computer, and Hewlett-Packard. It also requires a comparison of the profitability ratios of these four firms.

**For the Investor**

**TO THE NET**

1. Wendys

	<u>2001</u>	<u>2000</u>	<u>1999</u>
a. Earnings per common share			
Basic earnings per common share	\$1.72	\$1.48	\$1.37
Diluted earnings per common share	\$1.65	\$1.44	\$1.32
b. Price/earnings ratio	<u>\$29.17</u>	<u>\$26.25</u>	<u>\$20.81</u>
	\$ 1.65	\$ 1.44	\$ 1.32
P	17.68	18.23	15.22
/E			

c. Percentage of earnings retained

$$2001 \quad \frac{\$193,649,000 - \$26,824,000}{\$193,649,000} = \frac{\$166,825,000}{\$193,649,000} = 86.15\%$$

$$2000 \quad \frac{\$169,648,000 - \$27,516,000}{\$169,648,000} = \frac{\$142,133,000}{\$169,648,000} = 83.78\%$$

$$1999 \quad \frac{\$166,585,000 - \$29,305,000}{\$166,585,000} = \frac{\$137,280,000}{\$166,585,000} = 82.41\%$$

d. Dividend payout

$$2001 \quad \frac{\$.24}{\$1.65} = 14.55\%$$

$$2000 \quad \frac{\$.24}{\$1.44} = 16.67\%$$

$$1999 \quad \frac{\$.24}{\$1.32} = 18.18\%$$

e. Dividend yield

$$2001 \frac{\$.24}{\$29.17} = .82\%$$

$$2000 \frac{\$.24}{\$26.25} = .91\%$$

$$1999 \frac{\$.24}{\$20.81} = 1.15\%$$

2. Motorola, Inc.

	December 31		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Reorganization of business	\$1,858,000,000 Loss	\$596,000,000 Loss	\$226,000,000 Gain
Other Charges	\$3,328,000,000 Loss	\$517,000,000 Loss	\$1,406,000,000 Loss
Gains on sales of investments and businesses	\$1,931,000,000 Gain	\$1,570,000,000 Gain	\$1,180,000,000 Gain

These line items make it difficult to form an opinion on the results of Motorola, Inc.

3. Boeing Co.

	December 31		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
a. Earnings per common share			
Basic earnings per share	\$3.46	\$2.48	\$2.52
Diluted earnings per share	\$3.41	\$2.44	\$2.49
b. Price/earnings ratio	<u>\$38.78</u> \$ 3.41	<u>\$66.00</u> \$ 2.44	<u>\$41.44</u> \$ 2.49
P/E	11.47	27.05	16.64

c. Percentage of earnings retained

	<u>2001</u>	<u>2000</u>	<u>1999</u>
	\$2,826,000,000	\$2,128,000,000	\$2,309,000,000
	<u>- 582,000,000</u>	<u>- 504,000,000</u>	<u>- 537,000,000</u>
	\$2,826,000,000	\$2,128,000,000	\$2,309,000,000
	= 79.41%	= 76.32%	= 76.74%

d. Dividend payout

	<u>2001</u>	<u>2000</u>	<u>1999</u>
	$\frac{\$.68}{\$3.41} = 19.94\%$	$\frac{\$.56}{\$2.44} = 22.95\%$	$\frac{\$.56}{\$2.49} = 22.49\%$

e. Dividend yield

	<u>2001</u>	<u>2000</u>	<u>1999</u>
	$\frac{\$.68}{\$38.78} = 1.75\%$	$\frac{\$.56}{\$66.00} = .85\%$	$\frac{\$.56}{\$41.84} = 1.35\%$

4. Microsoft

	<u>Year Ended</u>	
	<u>June 30, 2001</u>	<u>June 30, 2002</u>
a. Total assets	\$ 58,830,000,000	\$ 67,646,000,000
b. Shareholders' equity	\$ 47,289,000,000	\$ 52,180,000,000
c. Common stock shares issued and outstanding	5,383,000,000	5,359,000,000
d. Market price x common shares issued and outstanding		
June 30, 2001		
(\$73.00) (5,383,000,000)	\$392,959,000,000	
=		
June 30, 2002		
(\$54.70) (5,359,000,000)		\$293,137,300,000
=		
e. Total capitalization is represented by market price x common shares issued and outstanding.		

This represents the projected cash flow from this firm discounted at an interest rate.

Investors constantly change their opinion of the projected cash flow and the discount rate to use.

Shareholders' equity is an amount on the balance sheet that represents shareholders' interest. It is an accounting book number arrived at by following generally accepted accounting principles.

## QUESTIONS

- 9- 1. Earnings per share is the amount of income earned on a share of common stock during an accounting period.
- 9- 2. The Financial Accounting Standards Board suspended the reporting of earnings per share for nonpublic companies.
- 9- 3. Keller & Fink is a partnership. Earnings per share is a concept that only applies to corporate income statements.
- 9- 4. Earnings per share is a concept that only applies to common stock. The earnings per common share computation only uses earnings available to common stockholders. To arrive at the income that applies to common stock, preferred dividends are subtracted from net income in the numerator of the ratio.
- 9- 5. Since earnings pertain to an entire year, they should be related to the common shares outstanding during the year. The year-end common shares outstanding may not be representative of the shares outstanding during the year.
- 9- 6. Less preferred dividends will be subtracted from net income in the numerator of the earnings per share computation. This will increase earnings per share. In practice, whether earnings per share will be increased or decreased depends on the after-tax earnings that the firm would have from the funds used to retire the preferred stock in relation to the dividend decrease.
- 9- 7. Stock dividends and stock splits do not provide the firm with more funds; they only change the number of outstanding shares. Earnings per share should be related to the outstanding common stock after the stock dividend or stock split.
- 9- 8. Many firms try to maintain a stable percentage because they have a policy on the percentage of earnings that they want retained for internal growth.

9- 9. Financial leverage is the use of financing with a fixed charge. Financial leverage will magnify changes in earnings available to the common shareholder. Its use is advantageous when a firm obtains a greater return on the resources obtained than the rate of interest expense. Its use is disadvantageous when a firm obtains a lower return on the resources obtained than the rate of interest expense.

9-10. If the interest rate rises, the degree of financial leverage will rise. For example, suppose the firm has the following pattern of earnings with \$1,000,000 in long-term debt:

Earnings before interest and tax	\$1,000,000
Interest (\$1,000,000 at 8%)	<u>80,000</u>
Earnings before tax	\$ 920,000

$$\begin{aligned} \text{Degree of Financial Leverage} &= \frac{\text{Income before interest and tax}}{\text{Earnings before tax}} \\ &= \frac{\$1,000,000}{\$920,000} \\ &= 1.09 \end{aligned}$$

If the rate of interest rises to 12%, then the degree of financial leverage will be as follows:

Earnings before interest and tax	\$1,000,000
Interest (\$1,000,000 at 12%)	<u>120,000</u>
Earnings before tax	\$ 880,000

$$\begin{aligned} \text{Degree of financial leverage} &= \frac{\$1,000,000}{880,000} \\ &= 1.14 \end{aligned}$$

The degree of financial leverage has risen.

9-11. Investors attach a higher price to securities that they feel have higher potential. This gives a higher price/earnings ratio.

9-12. A relatively new firm often has a low dividend payout ratio because it needs funds to establish itself (i.e., increase inventory, increase accounts receivable, etc.).



A firm with a substantial growth record and/or substantial growth prospects needs funds for expansion. They utilize them in this manner rather than paying them out to the owners.

- 9-13. A low dividend yield may indicate that the firm is retaining its earnings for growth. The investor might expect to get his/her returns in the form of market price appreciation.
- 9-14. Book value is based on a mixture of valuation basis, such as historical costs. Current value accounting should make book value closer to market.
- 9-15. Stock options are a form of potential dilution of earnings.
- 9-16. A relatively small number of stock appreciation rights can prove to be a material drain on future earnings and cash of a company because stock appreciation rights are tied to the future market price of the stock.
- 9-17. If the stock price decreases in relation to the prior year, then the estimate of total compensation expense related to the stock appreciation rights will decrease. The decrease in the estimate of total compensation expense will be added to income for the current year.

**PROBLEMS**

PROBLEM 9-1

Earnings Before Interest, Tax,  
Minority Share of Earnings,  
Equity Income and Nonrecurring  
Items

Degree of Financial Leverage +  $\frac{\text{Earnings Before Interest, Tax, Minority Share of Earnings, Equity Income and Nonrecurring Items}}{\text{Earnings Before Tax, Minority Share of Earnings, Equity Income, and Nonrecurring Items}}$

$$\frac{\$975,000 + \$70,000}{\$973,000} = \frac{\$1,045,000}{\$975,000} = 1.07$$

PROBLEM 9-2

Earnings Before Interest Tax  
Minority Share of Earnings Equity  
Income and Nonrecurring Items

a. Degree of Financial Leverage =  $\frac{\text{Earnings Before Interest Tax, Minority Share of Earnings, Equity Income and Nonrecurring Items}}{\text{Earnings Before Tax, Minority Share of Earnings, Equity Income and Nonrecurring Items}}$

$$= \frac{\$1,000,000}{\$800,000}$$

$$= 1.25$$

b.	Prior earnings before interest and tax	\$1,000,000
	10% increase	<u>100,000</u>
	Adjusted income before interest and tax	\$1,100,000
	Interest	<u>200,000</u>
	Income before tax	\$ 900,000
	Tax (50% rate)	<u>450,000</u>
	Net income	<u>\$ 450,000</u>
	Earnings will increase by 12.5% to \$450,000 (\$400,000 x 112.5% = \$450,000)	

c. \$800,000

200,000

600,000

300,000

\$300,000

This is a decline in profit of 25%, with a decline in earnings before interest and tax of 20%.



PROBLEM 9-3

a. 1.  $\frac{\text{Percentage of Earnings Retained}}{\text{Net Income}} = \frac{\text{All dividends}}{\text{Net Income}}$

	<u>2003</u>	<u>2002</u>	<u>2001</u>
Net income (A)	\$31,200,000	\$30,600,000	\$29,800,000
Less:			
Common dividends	000	000	000
Preferred dividends	21,700,000	19,500,000	18,360,000
		<u>910,000</u>	0
(B)	<u>910,000</u>	<u>0</u>	<u>910,000</u>
(A) Less (B) = (C)	<u>000</u>	\$20,410,000	<u>000</u>
(C) Divided by (A)	\$22,610,000	0	\$19,270,000
	000	10,190,000	000
	8,590,000	33.30%	10,530,000
	27.53%		0
			35.34%

2. Price/Earnings Ratio =  $\frac{\text{Market Price Per Share}}{\text{Fully Diluted Earnings Per Share}}$

<u>2003</u>	<u>2002</u>	<u>2001</u>
<u>\$12.80</u>	<u>\$14.00</u>	<u>\$16.30</u>
\$ 1.12	\$ 1.20	\$ 1.27
= 11.43	= 11.67	= 12.83

3. Dividend Payout =  $\frac{\text{Dividends Per Common Share}}{\text{Fully Diluted Earnings Per Share}}$

<u>2003</u>	<u>2002</u>	<u>2001</u>
<u>\$ .90</u>	<u>\$ .85</u>	<u>\$ .82</u>
\$1.12	\$1.20	\$1.27
= 80.36%	= 70.83%	= 64.57%

4. Dividend Yield =  $\frac{\text{Dividends Per Common Share}}{\text{Market Price Per Common Share}}$

<u>2003</u>	<u>2002</u>	<u>2001</u>
-------------	-------------	-------------

$$\frac{\$ .90}{\$12.80}$$

$$= 7.03\%$$

$$\frac{\$ .85}{\$14.00}$$

$$= 6.07\%$$

$$\frac{\$ .82}{\$16.30}$$

$$= 5.03\%$$

### Total Stockholders' Equity -

$$5. \text{ Book Value Per Share} = \frac{\text{Preferred Stock Equity}}{\text{Number of Common Shares Outstanding}}$$

	<u>200</u> <u>3</u>	<u>200</u> <u>2</u>	<u>200</u> <u>1</u>
Total assets	\$1,280,100,0	\$1,267,200,0	\$1,260,400,0
Less: Liabilities	00)	00	00
Stockholders' Equity	<u>(800,400,000)</u>	<u>(808,500,000)</u>	<u>(799,200,000)</u>
Less: Nonredeemable preferred stock	)	)	)
(A) Common stock equity	479,700,000	458,700,000	461,200,000
(B) Shares outstanding end of year	<u>(15,300,000)</u>	<u>(15,300,000)</u>	<u>(15,300,000)</u>
	\$464,400,000	\$443,400,000	\$445,900,000
	24,280,000	23,100,000	22,500,000
	\$19.13	\$19.19	\$19.82
(A) divided by (B)			

- b. The percentage of earnings retained is decreasing. The related ratio, dividend payout, is also increasing.

The price/earnings ratio has been relatively stable. The dividend yield has increased and is relatively high. The market price per share is substantially below the book value. It appears that this stock is being purchased for the relatively high dividend and not for growth potential.

#### PROBLEM 9-4

$$a. 1. \text{ Percentage of Earnings Retained} = \frac{\text{Net Income} - \text{All Dividends}}{\text{Net Income}}$$

	<u>2003</u>	<u>2002</u>	<u>2001</u>
Net income (B)	\$ 9,100,000	\$13,300,000	\$16,500,000
Less: Cash dividends (A)	<u>(6,080,000)</u>	<u>(5,900,000)</u>	<u>(6,050,000)</u>
	\$ 3,020,000	\$ 7,400,000	\$10,450,000
(A) divided by (B)	33.19%	55.64%	63.33%

$$2. \text{ Price/Earnings Ratio} = \frac{\text{Market Price Per Share}}{\text{Fully Diluted Earnings Per Share}}$$

<u>2003</u>	<u>2002</u>	<u>2001</u>
$\frac{\$41.25}{\$ 2.30}$	$\frac{\$35.00}{\$ 3.40}$	$\frac{\$29.00}{\$ 4.54}$
= 17.93	= 10.29	= 6.39

$$3. \text{ Dividend Payout} = \frac{\text{Dividends Per Common Share}}{\text{Fully Diluted Earnings Per Share}}$$

**Fully Diluted Earnings Per Share**

<u>2003</u>	<u>2002</u>	<u>2001</u>
<u>\$1.90</u>	<u>\$1.90</u>	<u>\$1.90</u>
\$2.30	\$3.40	\$4.54
= 82.61%	= 55.88%	= 41.85%

$$4. \text{ Dividend Yield} = \frac{\text{Dividends Per Common Share}}{\text{Market Price Per Common Share}}$$

<u>2003</u>	<u>2002</u>	<u>2001</u>
<u>\$ 1.90</u>	<u>\$ 1.90</u>	<u>\$ 1.90</u>
\$41.25	\$35.00	\$29.00
= 4.61%	= 5.43%	= 6.55%

$$5. \text{ Book Value Per Share} = \frac{\text{Market Price Value}}{\text{Ratio of Market Price to Book Value}}$$

<u>2003</u>	<u>2002</u>	<u>2001</u>
<u>\$41.25</u>	<u>\$35.00</u>	<u>\$29.00</u>
120.5 %	108.0 %	105.0 %
= \$34.23	= \$32.41	= \$27.62

b. The percentage of earnings retained materially declined. The related ratio, dividend payout, materially increased.

The price earnings ratio materially increased, which is difficult to explain, considering the decline in earnings and the other ratios computed.

The dividend yield has declined each year, while the book value per share increased each year.

The increase in market price and the increase in price earnings ratio appears to be explained by the increase in order backlog at year-end and the increase in net contracts awarded.



PROBLEM 9-5

Simple Earnings Per Share = Net Income - Preferred Dividends

**Weighted Average Number of  
Common Shares Outstanding**

<u>Year 1</u>	<u>Year 2</u>
<u>\$40,000 - \$22,500</u> 38,000	<u>\$42,000 - \$27,500</u> 38,500
\$.46	\$.38

The decline in earnings per share is caused mainly by the issuance of preferred stock and partially by a rise in the common shares.

PROBLEM 9-6

January 1, shares outstanding	50,000 shares
July 1, two-for-one stock split	<u>2</u>
Adjusted shares outstanding for the year	(A) <u>100,000</u>
October 1 stock issue	10,000 shares
Proportion of year that the new shares were outstanding	<u>.25</u>
Weighted average for the new shares on an annual basis	(B) 2,500
Denominator of the earnings per share computation for the current year (A) + (B)	<u>102,500</u>

PROBLEM 9-7

Revision of 2002 earnings per share:

2002 reported earnings per share	\$2.00
July 1, 2003 stock split	<u>x .5</u>
Adjusted 2002 earnings per share	\$1.00
December 31, 2003 stock split	<u>x .5</u>
Adjusted 2002 earnings per share	<u>\$.50</u>

Comparative Earnings Per Share

2003                      2002

Earnings Per Share      \$1.50                      \$ .50

**PROBLEM 9-8**

	<u>Numerator</u>	<u>Denominator</u>
a. Net income	\$ 35,000	
Preferred dividends	(3,000)	
 <b>January 1, 2003 shares of</b>		
common stock outstanding		20,000
July 1, 2003 common stock issue, 1,000 shares x 1/2		<u>500</u>
	<u>\$ 32,000</u>	<u>20,500</u>
 Earnings per share	 <u>\$1.56</u>	
b. From part (a)	\$ 32,000	20,500 shares
Less extraordinary gain	<u>5,000</u>	
	<u>\$ 27,000</u>	<u>20,500</u>
 Recurring earnings per share	 <u>\$1.32</u>	

PROBLEM 9-9

	<u>Numerator</u>	<u>Denominator</u>
a. Net income	\$200,000	
Preferred dividends	(10,000)	
Common shares outstanding on January 1		20,000 shares
Common stock issue on July 1, 5,000 shares		<u>2,500</u> (5,000 x ½)
Weighted average		22,500
Two-for-one stock split on December 31		<u>2</u>
	<u>\$190,000</u>	<u>45,000</u> shares

**Earnings per share**

**\$190,000/45,000 shares = \$4.22**

	<u>Current Year</u>	<u>Prior Year</u>
b. Earnings per share reported for the prior year		\$8.00
Two-for-one stock split on December 31 of the current year (\$8.00 x .5) = \$4.00		<u>\$4.00</u>
 Earnings per share computed in part (a) for the current year	 \$4.22	

PROBLEM 9-10

a. 1. Percentage of Earnings Retained =

$$\frac{\text{Net Income} - \text{All Dividends}}{\text{Net Income}}$$

	<u>2003</u>	<u>2002</u>
Cash dividends	\$.80 x 25,380,000 \$20,304,000	\$.76 x 25,316,000 \$19,240,160
Preferred dividends	4,567,000	930,000
Total dividends	24,871,000	20,170,160
Net income (B)	32,094,000	31,049,000
Net income - dividends (A)	7,223,000	10,878,840
Percentage of earnings retained (A) / (B)	22.51%	35.04%

2. Price/Earnings Ratio =  $\frac{\text{Market Price}}{\text{Fully Diluted Earnings Per Share}}$

<u>\$12.94</u>	<u>\$15.19</u>
\$ 1.08	\$ 1.14
11.98%	13.32%

3. Dividend Payout =  $\frac{\text{Dividend Per Share}}{\text{Fully Diluted Earnings Per Share}}$

<u>\$ .80</u>	<u>\$ .76</u>
\$ 1.08	\$ 1.14
74.07%	66.67%

4. Dividend Yield =  $\frac{\text{Dividend Per Share}}{\text{Market Price Per Share}}$

<u>\$ .80</u>	<u>\$ .76</u>
\$12.94	\$15.19
6.18%	5.00%

$$5. \text{ Book Value Per Share} = \frac{\text{Common Equity}}{\text{Shares Outstanding}}$$

Total assets	\$1,264,086,000	\$1,173,924,000
Less: total liabilities	(823,758,000)	(742,499,000)
Less: non-redeemable preferred stock	( 16,600,000)	( 16,600,000)
Common equity (A)	)	414,825,000
Shares outstanding	\$ 423,728,000	25,316,000
Book value per share	25,380,000	\$16.39
(A) / (B)	\$16.70	

- b. Having the percentage of earnings retained decline provides mixed feelings. It implies that more is going to shareholders, but at the same time, earnings retained for growth have diminished. The rise in the dividend payout ratio supports this position.

The price/earnings ratio has declined as a result of the drop in price. This decline indicates lower shareholder expectations but might also indicate a good time to buy.

Dividend yield is up, caused by the rise in dividends and more so by the drop in price.

Book value per share is up. However, book value is above market, which shows that the investors do not view the assets as worth their book value. This is not a good sign.

Overall the signals are mixed. There is not enough information to determine if this is a good security.

#### PROBLEM 9-11

- a. The major advantage of receiving stock appreciation rights instead of stock options is that the executive does not have to make a big cash outlay at the date of exercise, but rather receives a payment for the share appreciation. This helps the executive's cash flow.
- b. The related credit is to a liability under the stock appreciation plan that would probably be classified as long-term, since exercise cannot occur until 2006.
- c. In 2003, the company must pay off the liability related to the appreciation in cash. For this problem, it is \$30,000.

In doing financial statement analysis, this future cash flow, if material, must be considered. As in this case, the full impact may not be apparent until the last year, if the market price rises sharply.

PROBLEM 9-12

- a.   3   Common shareholders' equity divided by the number of common shares outstanding gives book value per share.
- b.   2   Book value per share =

**Total Stockholders' Equity -**  
Preferred Stock (At Liquidation)

Number Of Common Shares Outstanding

$$\frac{\$1,000,000 + \$1,500,000 + \$500,000 - \$1,100,000}{150,000 \text{ shares}} = \$12.67$$

PROBLEM 9-13

a. 1. Degree of Financial Leverage =  $\frac{\text{Earnings Before Interest, Tax, Minority Share of Earnings, Equity Income, and Nonrecurring Items}}{\text{Earnings Before Tax, Minority Share of Earnings, Equity Income, and Nonrecurring Items}}$

$$2003: \frac{\$110,500 + \$9,500}{\$110,500} = 1.09$$

$$2002: \frac{\$107,700 + \$6,600}{\$107,700} = 1.06$$

$$2001: \frac{\$100,450 + \$6,800}{\$100,450} = 1.07$$

$$2000: \frac{\$124,100 + \$6,900}{\$124,100} = 1.06$$

$$1999: \frac{\$119,000 + \$7,000}{\$119,000} = 1.06$$



2. Earnings Per Common Share

2003:	Continuing operations	\$2.67*
	Extraordinary gain	<u>.69</u>
		\$3.36

\*Should be used in primary analysis.

2002: \$2.57

2001: \$2.36

2000: \$3.23

1999: \$2.81

3. Price/Earnings Ratio =  $\frac{\text{Market Price Per Share}}{\text{Earnings Per Share}}$

2003:  $\frac{\$24.00}{\$ 2.67} = 8.99$

2002:  $\frac{\$22.00}{\$ 2.57} = 8.56$

2001:  $\frac{\$21.00}{\$ 2.36} = 8.90$

2000:  $\frac{\$37.00}{\$ 3.23} = 11.46$

1999:  $\frac{\$29.00}{\$ 2.81} = 10.32$

4. Percentage Of =  $\frac{\text{NetIncome} - \text{AllDividend}}{\text{NetIncome}}$   
Earnings Retained

2003:  $\frac{\$97,500 - \$3,920 - \$91,640}{\$97,500} = 1.99\%$

2002:  $\frac{\$74,400 - \$6,100 - \$66,410}{\$74,400} = 2.54\%$

2001:  $\frac{\$68,350 - \$6,400 - \$60,900}{\$68,350} = 1.54\%$

2000:  $\frac{\$93,700 - \$6,600 - \$84,970}{\$93,700} = 2.27\%$

$$1999: \frac{\$81,600 - \$6,000 - \$81,200}{\$81,600} = (6.86\%)$$

$$5. \text{ Dividend Payout} = \frac{\text{Dividends Per Common Share}}{\text{Fully Diluted Earnings Per Share}}$$

$$2003: \frac{\$3.16}{\$2.67} = 118.35\%$$

$$2002: \frac{\$2.29}{\$2.57} = 89.11\%$$

$$2001: \frac{\$2.10}{\$2.36} = 88.98\%$$

$$2000: \frac{\$2.93}{\$3.23} = 90.71\%$$

$$1999: \frac{\$2.80}{\$2.81} = 99.64\%$$

$$6. \text{ Dividend Yield} = \frac{\text{Dividends Per Common Share}}{\text{Market Price Per Common Share}}$$

$$2003: \frac{\$ 3.16}{\$24.00} = 13.17\%$$

$$2002: \frac{\$ 2.29}{\$22.00} = 10.41\%$$

$$2001: \frac{\$ 2.10}{\$21.00} = 10.00\%$$

$$2000: \frac{\$ 2.93}{\$37.00} = 7.92\%$$

$$1999: \frac{\$ 2.80}{\$29.00} = 9.66\%$$

7. Book Value Per Share =  $\frac{\text{Preferred Stock Equity}}{\text{Number of Common Shares Outstanding}}$

$$2003: \frac{\$489,000 - \$49,000}{29,000} = \$15.17$$

$$2002: \frac{\$514,000 - \$76,000}{29,000} = \$15.10$$

$$2000: \frac{\$516,000 - \$80,000}{29,000} = \$15.03$$

$$2001: \frac{\$517,000 - \$82,000}{29,000} = \$15.00$$

$$1999: \frac{\$508,000 - \$75,000}{29,000} = \$14.93$$

8. Materiality Of Options =  $\frac{\text{Stock Options Outstanding}}{\text{Number of Shares of Common Stock Outstanding}}$

$$1999-2003: \frac{1,000,000}{29,000,000} = 3.45\%$$

b. This firm has a very low degree of financial leverage. Earnings from continuing operations and the price/earnings ratio have been relatively stable.

Practically all of the earnings have been paid out in dividends; thus, book value per share has only increased slightly.

The dividend yield is very high. The market price has declined substantially.

Options outstanding appear to be immaterial.

In general, the investor analysis is positive if the investor wants high dividends. Growth prospects do not appear to be good.

CASES

CASE 9-1 WHY THE CHANGE?

(This case provides the opportunity to review the influence of a stock split.)

- a. 1. 13,512,317
2. 14,011,893
3. 14,011,893 (weighted average)
4. The outstanding shares decreased between 1997 and 1998 because the treasury shares increased.

b. diluted.  
Using diluted results in a more conservative computation.

c. 1. Yes.  
Nothing is indicated in the case that would have changed the reported net income.

2. No.  
The reported diluted net income per share would have been much higher. The number was adjusted for the 1998 annual report to take into account the 3 for 1 split.

d. 1. 
$$\frac{\$141,670,000}{13,512,317} = \$10.48$$

$$\frac{\$158,180,000}{14,681,154} = \$10.77$$

2. Considering the earnings per share and the cash dividends per share would have increased the book value. The book value decreased because substantial treasury shares were purchased at a market price above book value.

e.

	<u>1998</u>	<u>1997</u>	<u>1996</u>
Dividends per share (a)	\$ .60	\$ .53	\$ .46
Diluted net income per share (b)	\$1.48	\$1.54	\$1.28
Dividend payout (a ÷ b)	40.54%	34.42%	35.94%

CASE 9-2 STOCK SPLIT REVISITED

(This case provides an opportunity to view the effect of a stock split and several other interesting aspects, such as earnings per share.)

a. The two-for-one stock split for the period ended January 27, 1995, is handled on a retroactive basis.

b. 1. Sold and paid for	40,221,000
2. Treasury stock	5,395,000
3. Sold and paid for	40,221,000
Less treasury shares	<u>(5,395,000)</u>
	<u>34,826,000</u>

c. 1. 0  
2. \$3,592,000  
3. \$3,589,000

d. 1. \$27,979,000  
2. \$ 2,861,000  
3. \$20,972,000

e. 1. Dividends	-0-
Purchase of treasury stock	<u>\$27,979,000</u>
Total	<u>\$27,979,000</u>

2. Dividends	\$3,592,000
Purchase of treasury stock	<u>2,861,000</u>
Total	<u>\$6,453,000</u>

3. Dividends	\$ 3,589,000
Purchase of treasury stock	<u>20,972,000</u>
Total	<u>\$24,561,000</u>

Note: It may be interesting to students that many firms have reduced or eliminated cash dividends.

f. Net income per share is computed by dividing net income by the weighted average number of common shares outstanding during each period. After the two-for-one split, the weighted average common shares outstanding were 35.2 million for fiscal year 1995.

g. \$0.01 par value (Note 2)

CASE 9-3 STOCK OPTION PLANS (STOCK BASED COMPENSATION)

(This case provides the opportunity to review the materiality of employee stock options on two separate companies, in two widely different industries.)

a. Yes

Industries that are high tech tend to have substantial options. We would expect Motorola to use options more extensively than Reebok International.

b. Reebok International

2002

$$\text{Materiality of Options} = \frac{\$131,528 - \$124,497}{\$131,528} = 5.35\%$$

2001

$$\text{Materiality of Options} = \frac{\$102,726 - \$96,615}{\$102,726} = 5.95\%$$

2000

$$\text{Materiality of Options} = \frac{\$80,878 - \$74,925}{\$80,878} = 7.36\%$$

Reebok has substantial stock option expense. The materiality of options declined between 2000 and 2002.

c. Motorola Inc.

2002

Because of the loss the materiality of option expense is not computed for 2002. We observe that the loss would be approximately 12% higher if the option expense was included in net earnings.

2001

Because of the loss the materiality of option expense is not computed for 2001. We observe that the loss would be approximately 9% higher if the option expense was included in net earnings.

2000

$$\text{Materiality of Options} = \frac{\$1,318 - \$1,142}{\$1,318} = 13.35\%$$

Option expense appears to be material for Motorola Inc.

CASE 9-4 FOOD, FOOD, FOOD

(This case provides an opportunity to compute several of the ratios introduced in this chapter.)

a. 1. Degree of financial leverage

$$\underline{2002} \quad \frac{\$12,233,759 + \$2,420,370}{\$12,233,759} = 1.20$$

$$\underline{2001} \quad \frac{\$9,992,055 + \$2,606,747}{\$9,992,055} = 1.26$$

2. Price Earnings Ratio

$$\underline{2002} \quad \frac{\$19.90}{\$1.59} = 12.52$$

$$\underline{2001} \quad \frac{\$12.80}{\$1.49} = 8.59$$

3. Percentage of Earnings Retained

$$\underline{2002} \quad \frac{\$7,971,381 - \$1,727,142}{\$7,971,381} = 78.33\%$$

$$\underline{2001} \quad \frac{\$6,556,961 - \$1,639,185}{\$6,556,961} = 75.00\%$$

4. Dividend Yield

$$\underline{2002} \quad \frac{\$.35}{\$19.90} = 1.76\%$$

$$\underline{2001} \quad \frac{\$.32}{\$12.80} = 2.50\%$$

5. Book Value Per Share

$$\underline{2002} \quad \frac{\$61,229,928}{4,910,760} = \$12.47$$

$$\underline{2001} \quad \frac{\$56,446,041}{5,011,594} = \$11.26$$

- b. 1. Degree of financial leverage is low.
- 2. Price earnings ratio increased materially in 2002, but it still would be considered moderate in 2002.
- 3. A relative high percentage of earnings were retained.
- 4. The dividend yield was relatively low and decreased materially in 2002.
- 5. Book value per share increased moderately in 2002. Notice that the market price was slightly above book value in 2001. The market price for 2002 was materially above the book value.



CASE 9-5 CONNECTING

(This case provides an opportunity to view five year horizontal and vertical common-size analysis. There are also four ratios.)

a. 1.

Net operating revenues  
Newspaper advertising  
Newspaper circulation  
Broadcasting  
All other

2. Net operating revenues increased materially. Material increases were in newspaper advertising, and all other. Broadcasting had a decrease.

b. 1.

Net operating revenues  
Newspaper advertising  
Newspaper circulation  
Broadcasting  
All other

2. Newspaper advertising is the dominate sectors. This sector increased each year substantial decrease in broadcasting.

c. 1. Degree of financial leverage

$$\frac{37 + \$221,854}{,370,597} =$$

$$\frac{10 + \$219,228}{608,840} =$$

$$\frac{37 + \$94,619}{527,187} =$$

2. Percentage of earnings retained

$$\frac{- \$238,301}{31,197} =$$

$$\frac{- \$228,212}{71,940} =$$

$$\frac{- \$228,781}{19,387} =$$

d. Degree of financial leverage increased each year.

Percentage of earnings retained was material. It decreased between 1999 and 2001.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise using the Boeing Company provides for comments on several market factors as follows:

- a. Earnings per share forecasts and how these forecasts influence the market value of the common stock.

The comments should be along the lines that the market value of common is usually the result of earnings per share forecasts.

- b. The price earnings ratio and how the price earnings ratio is influenced by the earnings per share forecasts.

The comments should be along the lines that the price earnings ratio is usually the result of earnings per share forecasts.

- c. The market capitalization and the common stockholders equity.

The market capitalization is the result of multiplying the common stock price by the number of outstanding shares of common stock. The common stockholders equity is the book amount that applies to common stockholders equity. These two amounts will usually vary significantly. Usually the market value (capitalization) is much more than the book amount of common stockholders equity. This is because the projected earnings discounted are usually more than the book amount of common stockholders equity.

- d. Comments on the dividend payout.

2. This Thomson Analytics exercise uses Gateway Computer, Apple Computer, Dell Computer, and Hewlett-Packard to address earnings per share forecasts, and the price earnings ratio.

- a. This calls for determining the earnings per share forecasts for these companies.
- b. This calls for determining the price earnings ratio for these companies.
- c. Calls for a comment on how the price earnings ratio is influenced by the earnings per share forecasts influence the market price and how much investors are willing to pay in relation to current earnings.

# Chapter 10

## Statement of Cash Flows

### TO THE NET

1. Northrop Grummon

- a. SIC 3812 Search, Detection, Navigation, Guidance, Aeronautical Systems.
- b. The direct method is used for operating activities. This presents individual inflows and outflows from operating activities. The alternative presentation (indirect method) does not present individual inflows and outflows from operating activities.

2. Dell Computer

- a. SIC 3571 Electronic Computers

b.

	Fiscal Year Ended	
	February 1, 2002	February 2, 2001
	(In millions)	
Accounts receivable, net	\$2,269	\$2,424
Inventories	278	400
Accounts payable	5,075	4,286

c.

	Fiscal Year Ended	
	February 1, 2002	February 2, 2001
	(In percent)	
Accounts receivable, net	93.6	100.0
Inventories	69.5	100.0
Accounts payable	118.4	100.0

d.

	Fiscal Year Ended	
	February 1, 2002	February 2, 2001
	(In millions)	
Net revenue	\$31,168	\$31,888
Net income	\$ 1,246	\$ 2,177
Net cash provided by operating activities	\$ 3,797	\$ 4,195

e.

	Fiscal Year Ended	
	February 1, 2002	February 2, 2001

	(In percent)	
Net revenue	97.7	100.0
Net income	57.2	100.0
Net cash provided by operating activities	90.5	100.0

- f. Impressive that the decrease in inventories was substantially more than the decrease in accounts receivable net; and the decrease in net revenue.

Net income decreased materially more than the decrease in net revenue. (This would be a material negative.)

Net cash provided by operating activities decreased substantially more than the decrease in net revenue. (This would be a material negative.)

The increase in accounts payable considering the decrease in inventories would be a material negative.

### 3. Coors Adalph

- a. SIC 2082 Malt Beverages

- b.

	<u>December 30, 2001</u>	<u>December 31, 2000</u>
Current maturities of long-term debt and current notes payable	\$ 85,000,000	--
Total debt	\$788,380,000	\$696,915,000
Common shares outstanding	35,949,410	37,131,121

- c.

	<u>Fiscal Year Ended</u>	
	<u>December 30, 2001</u>	<u>December 31, 2000</u>
	(In thousands)	
Operating Cash Flow	\$193,396	\$280,731
Preferred Dividends	--	--
Total Cash Dividends	\$29,510	\$26,564

- d. Selected ratios for 2001, and 2000

	<u>2001</u>	<u>2000</u>
1. Operating cash flow/ current maturities of long-term debt and current notes payable	<u>\$193,396</u> \$ 85,000	<u>\$280,731</u> --*
	2.28 times	N/A

\*No current maturities of long-term debt and current notes payable.

	<u>2001</u>	<u>2000</u>
2. Operating cash flow/ total debt	<u>\$193,396</u> \$788,380	<u>\$280,731</u> \$696,915
	= 24.53%	= 40.28%

3. Operating cash flow per share

<u>2001</u>	<u>2000</u>
<u>\$193,396,000</u> \$ 35,949,410	<u>\$280,731,000</u> \$ 37,131,121
= \$5.38	= \$7.56

4. Operating cash flow/cash dividends

<u>2001</u>	<u>2000</u>
<u>\$193,396,000</u> \$29,510,000	<u>\$280,731,000</u> \$26,564,000
= 6.55 times	- 10.57 times

- e. Operating cash flow/current maturities of long-term debt and current notes payable.

No current maturities of long-term debt and current notes payable in 2000. Therefore there is not a good comparison. The coverage in 2001 appears to be good.

Operating cash flow/total debt

Material decline in 2001. This resulted from reduced cash flow and increased debt.

Operating cash flow per share

A material decline in 2001

Operating cash flow/cash dividends

A material decline in 2001

## QUESTIONS

- 10- 1. The basic justification for a statement cash flows is that the balance sheet and the income statement do not adequately indicate changes in cash.

The balance sheet indicates the position of the firm at a particular point of time. Some idea of how the changes in cash occurred can be obtained by comparing consecutive balance sheets, but only a limited amount of information can be obtained this way.

The income statement shows the income or loss for a period of time, but it does not indicate cash generated by operations. Neither the balance sheet nor the income statement summarize the cash flows related to investing or financing activities. Neither presents such items as sale of stock, retirement of bonds, purchase of machinery, or sale of a subsidiary.

Thus, there is a need to summarize the cash flows in another statement.

- 10- 2. 1. Cash flows from operating activities  
2. Cash flows from investing activities  
3. Cash flows from financing activities

- 10- 3. The cash inflows (outflows) will be determined by analyzing all balance sheet accounts other than the cash and cash equivalent accounts. The cash inflows will be generated from the following accounts:

1. Decreases in assets
2. Increases in liabilities
3. Increases in stockholders' equity

The cash outflows will be generated from the following accounts.

1. Increases in assets
2. Decreases in liabilities
3. Decreases in stockholders' equity

- 10- 4. This statement is not correct. The land account may contain an explanation of a source and use of cash.

- 10- 5. 1. Visual method  
2. T-account method



### 3. Worksheet method

- 10- 6. For the direct approach, the revenue and expense accounts on the income statement are presented on a cash basis. For this purpose, the accrual basis income statement is adjusted to a cash basis. For the indirect approach, start with net income and add back or deduct adjustments necessary to change the income on an accrual basis to income on a cash basis after eliminating gains or losses that relate to investing or financing activities.
- 10- 7. Items have been included in income that did not provide cash and items have been deducted from income that did not use cash. Net income must be converted to a cash from operations figure for the statement of cash flows.
- 10- 8. Cash and short-term highly liquid investments. This would include cash on hand, cash on deposit, and investments in short-term highly liquid investments.
- 10- 9. The purpose of the statement of cash flows is to provide information on why the cash position of the company changed during the period.
- 10-10. These transactions represent significant investing and/or financing activities and one purpose of the statement of cash flows is to present investing and financing activities.
- 10-11. No. The write-off of uncollectible accounts against allowance for doubtful accounts would reduce accounts receivable and the allowance for doubtful accounts. It would relate to operations and be a noncash item. The net receivables amount would not change.
- 10-12. Discarding a fully depreciated asset with no salvage value will not result in cash flow.
- 10-13. This may be the result of non-cash charges for depreciation, amortization, and depletion. Also, receivables or inventory may have decreased or accounts payable may have increased.
- 10-14. An increase in accounts payable would be considered to be an increase in cash from operations.
- 10-15. Investments in receivables, inventories, fixed assets, and the paying off of debt are examples of situations where cash will be used but will not reduce profits.

- 10-16. Depreciation is not a source of funds. Depreciation has been deducted on the income statement in arriving at income. Since depreciation is a non-fund charge to the income statement, it is added back to income to compute cash from operations.
- 10-17. The decrease in accounts receivable would increase cash from operations.
- 10-18. This is an example of noncash investing and financing. As such, it should be disclosed on a schedule that accompanies the statement of cash flows.
- 10-19. Cash flow per share is not as good an indicator of profitability as earnings per share. In the short-run, cash flow per share is a better indicator of liquidity and ability to pay dividends.
- 10-20. Since cash flow from operating activities is substantially greater than the cash paid out for dividends, it appears that the company can maintain and possibly increase dividend payments in the future, depending also on its investing and financing goals.

PROBLEMS

PROBLEM 10-1

<u>Data</u>	<u>Cash Flows Classification</u>			<u>Effect on Cash</u>		<u>Non-cash Trans- action</u>
	<u>Operating Activity</u>	<u>Investing Activity</u>	<u>Financing Activity</u>	<u>Increase</u>	<u>Decrease</u>	
a. Net Loss	X				X	
b. Increase in inventory	X				X	
c. Decrease in receivables	X			X		
d. Increase in prepaid insurance			X	X		
e. Issuance of common stock						X
f. Acquisition of land using notes payable		X			X	
g. Purchase of land using cash			X		X	
h. Paid cash dividend	X				X	
i. Payment of income taxes			X		X	
j. Retirement of bonds using cash		X		X		
k. Sale of equipment for cash						

PROBLEM 10-2

Data	<u>Cash Flows Classification</u>			<u>Effect on Cash</u>		<u>Non-cash Trans- action</u>
	<u>Operating Activity</u>	<u>Investing Activity</u>	<u>Financing Activity</u>	<u>Increase</u>	<u>Decrease</u>	
a. Net income	X			X		
b. Paid cash dividend			X		X	
c. Increase in receivables	X				X	
d. Retirement of debt, paying cash			X		X	
e. Purchase of treasury stock			X		X	
f. Purchase of equipment		X			X	
g. Sale of equipment		X		X		
h. Decrease in inventory	X			X		
i. Acquisition of land using common stock						X
j. Retired bonds using common stock						X
k. Decrease in accounts payable	X			X	X	

PROBLEM 10-3

a. BBB Company  
Statement of Cash Flows  
For the Year Ended December 31, 2005

Cash flows from operating activities:

Net income		\$ 500
Noncash expenses, revenues, losses, and gains included in income:		
Depreciation	\$2,800	
Gain on sale of land	(800)	
Decrease in accounts receivable		400
Decrease in inventory		500
Increase in accounts payable	800	
Increase in wages payable	50	
Decrease in taxes payable	<u>(1,000)</u>	<u>2,750</u>
Net cash flow from operating activities		3,250
Cash flows from investing activities:		
Land was sold for		1,800
Equipment was purchased for		<u>(3,500)</u>
Net cash used for investing activities		(1,700)
Cash flows from financing activities:		
Dividends declared and paid		(4,350)
Common stock was sold for		<u>3,800</u>
Net cash used for financing activities		<u>(550)</u>
Net increase in cash and marketable securities		<u>\$ 1,000</u>

b. Net cash flow from operating activities was substantially more than the net income. Cash dividends were greater than the net cash flow from operating activities.

The cash from issuing the common stock was sufficient to cover the net cash used for investing activities, increase the cash and marketable securities accounts, and partially cover the large cash dividend.

The fact that a long-term source of funds (common stock) was used to cover part of the cash dividends is a negative observation. The large cash dividend in relation to net cash flow from operating activities would also be considered a negative situation.



PROBLEM 10-4

a. Frish Company  
Schedule of Change From Accrual To  
Cash Basis Income Statement

<u>Accrual Basis</u> <u>Basis</u>	<u>Adjustments</u>	<u>Add(Subtract)</u>	<u>Cash</u>
Net sales	\$640,000	Increase in accounts receivable (\$27,000)	\$613,000
Less expenses:			
Cost of goods sold	360,000	Increase in accounts payable (15,000)	
	Increase in inven- tories 35,000		
	Depreciation expense	<u>(15,000)</u>	365,000
Selling and administrative expense	43,000	Decrease in prepaid expenses (1,000)	
	Increase in accrued liabilities (3,000)		
	Depreciation expense	<u>(5,000)</u>	34,000
Other expense	2,000	Amortization of patent (3,000)	
	Amortization of bond premium	<u>1,000</u>	<u>-0-</u>
Income before income taxes	_____		214,000
	235,000		
Income tax	92,000	Decrease in income taxes payable 10,000	<u>102,000</u>
Net income	<u>\$143,000</u>		<u>\$112,000</u>

b. (1) Direct Approach

Receipts from customers	\$613,000
Payments to suppliers	(365,000)
Selling and administrative expenses	( 34,000)
Income taxes paid	<u>(102,000)</u>
Cash flows from operating activities	<u>\$112,000</u>





(2) Indirect Approach

Net income	\$143,000
Add (deduct) items not affecting cash	
Depreciation	20,000
Amortization of patent	3,000
Amortization of bond premium	(1,000)
Increase in accounts receivable	(27,000)
Increase in accounts payable	15,000
Increase in inventories	(35,000)
Decrease in prepaid expenses	1,000
Increase in accrued liabilities	3,000
Decrease in income taxes payable	<u>(10,000)</u>
Cash flow from operating activities	<u>\$ 112,00</u>

PROBLEM 10-5

- a. The income statement and other selected data for the Boyer Company is shown below.

Boyer Company  
Schedule of Change From Accrual To  
Cash Basis Income Statement  
For Year Ended December 31, 2005

<u>Accrual Basis</u>		<u>Adjustments</u>	<u>Add (Subtract)</u>	<u>Cash Basis</u>
Sales	\$19,000	Increase in receivables	(400)	\$18,600
Less operating expenses:	2,300	Depreciation expense	(2,300)	-0-
Depreciation		Increase in inventories	800	
Other operating expenses	<u>12,000</u>	Increase in accounts payable	(500)	<u>12,300</u>
Operating income	4,700			6,300
Loss on sale of land	<u>1,500</u>	Loss on sale of land	(1,500)	<u>-0-</u>
Income before tax expense	3,200			6,300

Tax expense	<u>1,000</u>	Decrease in income	400	<u>1,400</u>
Net income	<u>\$2,20</u>	taxes payable		<u>\$4,90</u>
	<u>0</u>			<u>0</u>

b. (1) <u>Direct Approach</u>		
Receipts from customers		\$18,600
Payments to suppliers		(12,300)
Income taxes paid		<u>(1,400)</u>
Cash flow from operating activities		<u>\$ 4,900</u>

(2) <u>Indirect Approach</u>		
Net income		\$ 2,200
Add (deduct) items not affecting cash:		
Depreciation	\$2,300	
Increase in receivables	(400)	
Increase in inventories	(800)	
Increase in accounts payable	500	
Loss on sale of land	1,500	
Decrease in income taxes payable	<u>(400)</u>	<u>2,700</u>
Cash flow from operating activities		<u>\$ 4,900</u>

PROBLEM 10-6

a.    Sampson Company  
Statement of Cash Flows  
For the Year Ended December 31, 2005

Net cash flow from operating activities:

Net income		\$19,000
Noncash expenses, revenues, losses, and gains included in income:		
Depreciation expense	\$10,000	
Increase in net receivables	( 7,000)	
Increase in inventory	(13,000)	
Increase in accounts payable	5,000	
Decrease in accrued liabilities	<u>(17,000)</u>	
Net cash outflow from operating activities		(3,000)

Cash flows from investing activities:

Plant assets increase		<u>(15,000)</u>
-----------------------	--	-----------------

Cash flows from financing activities:

Mortgage payable increase	\$11,000	
Common stock increase	6,000	
Dividends paid	<u>(21,000)</u>	
Net cash flows from financing activities		<u>\$ ( 4,000)</u>

Net decrease in cash		<u>\$ (22,000)</u>
----------------------	--	--------------------



b.

Sampson Company  
Statement of Cash Flows  
For the Year Ended December 31, 2005

Cash flow from customers	\$138,000	
	(\$145,000 - \$7,000)	
Cash payments to suppliers		(123,000)
	(\$108,000 - \$10,000 + \$13,000 - \$5,000 + \$17,000)	
Cash outflow for other expenses		(6,000)
Tax payments	<u>(12,000)</u>	
Net cash outflow from operating activities		(\$3,000)
Cash flows from investing activities:		
Plant assets increase		
		(15,000)
Cash flows from financing activities:		
Mortgage payable increase		\$11,000
Common stock increase		6,000
Dividends paid		<u>(21,000)</u>
Net cash outflow from financing activities		
		<u>(4,000)</u>
Net decrease in cash		
		<u>\$ (22,000)</u>

c. All major segments of cash flows were negative. Net cash outflow from operating activities was negative by \$3,000, and yet dividends were paid in the amount of \$21,000. Also, the company had a negative cash flow from investing activities. These negative cash flows were partially made up for by issuing a mortgage payable (\$11,000) and common stock (\$6,000).

PROBLEM 10-7

a. Comment

The usual guideline for the current ratio is two to one. Arrowbell Company had a 1.14 to 1 ratio in 2004 and a .85 to 1 ratio in 2005. The usual guideline for the acid-test ratio is one to one. Arrowbell Company had a .68 to 1 ratio in 2004 and a .49 to 1 ratio in 2005.

The cash ratio dropped from .19 in 2004 to .12 in 2005. The working capital in 2004 was \$197,958, and in 2005 it had declined to a negative \$319,988.

The short-term debt position appears to be very poor.

Computation of Ratios

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

<u>2005</u>	<u>2004</u>
$\frac{\$1,755,303}{\$2,075,291} = .85$	$\frac{\$1,599,193}{\$1,401,235} = 1.14$

$$\text{Acid-Test Ratio} = \frac{\text{Cash Equivalents \& Net Receivables \& Marketable Securities}}{\text{Current Liabilities}}$$

2005

$$\frac{\$250,480 + \$760,950}{\$2,075,291} = .49$$

2004

$$\frac{\$260,155 + \$690,550}{\$1,401,235} = .68$$

$$\text{Cash Ratio} = \frac{\text{Cash Equivalents \& Marketable Securities}}{\text{Current Liabilities}}$$

<u>2005</u>	<u>2004</u>
$\frac{\$250,480}{\$2,075,291} = .12$	$\frac{\$260,155}{\$1,401,235} = .19$

$$\text{Operating Cash Flow/Current Maturities of Long-Term Debt and Current Notes Payable} = \frac{\text{Operating Cash Flow}}{\text{Current Maturities of Long-Term Debt and Current Notes Payable}}$$

<u>2005</u>	<u>2004</u>
$\frac{\$429,491}{\$915,180} = 46.93\%$	$\frac{\$177,658}{\$550,155} = 32.29\%$

- b. Suppliers will be concerned that Arrowbell Company will not be able to pay its creditors and, if payment is made, it will be later than the credit terms. The short-term creditors are financing the expansion program.



- c. The debt ratio has increased in 2005 to .61 from .58 in 2004. The debt/equity ratio has increased in 2005 to 1.55 from 1.36 in 2004. (A similar increase in the debt to tangible net worth as the increase in the debt/equity ratio.) There was an improvement in the operating cash flow/total debt, but this ratio remains very low.

This indicates that a substantial amount of funds are coming from creditors. In general the dependance on creditors worsened in 2005.

Not enough information is available to compute the times interest earned, but we can estimate this to be between 2 and 3, based on the earnings and the debt. We would like to see the times interest earned to be higher than this amount. The review of the Statement of Cash Flows indicates that long-term creditors are going to be concerned by the use of debt to expand property, plant, and equipment. They also are going to be concerned by the payment of a dividend while the working capital is in poor condition.

$$\text{Debt Ratio} = \frac{\text{TotalDebt}}{\text{TotalAssets}}$$

<u>2005</u>
$\frac{\$2,625,291}{\$4,316,598} = .61$
<u>2004</u>
$\frac{\$2,176,894}{\$3,776,711} = .58$

$$\text{Debt/Equity} = \frac{\text{TotalDebt}}{\text{Stockholders' Equity}}$$

<u>2005</u>
$\frac{\$2,625,291}{\$1,691,307} = 1.55$
<u>2004</u>
$\frac{\$2,176,894}{\$1,599,817} = 1.36$

Debt to Tangible Net Worth =

$$\frac{\text{Total Liabilities}}{\text{Shareholders' Equity} - \text{Intangible Assets}}$$

2005

$$\frac{\$2,625,291}{\$1,691,307} = 155.22\%$$

2004

$$\frac{\$2,176,894}{\$1,599,817} = 136.07\%$$

$$\text{Operating Cash Flow/Total Debt} = \frac{\text{Operating Cash Flow}}{\text{Total Debt}}$$

2005

$$\frac{\$429,491}{\$2,625,291} = 16.36\%$$

2004

$$\frac{\$177,658}{\$2,176,894} = 8.16\%$$

- d. A banker would be especially concerned about the short-term debt situation. This could lead to bankruptcy, even though the firm is profitable. A banker would be particularly concerned why management had used short-term credit to finance long-term expansion.
- e. Management should consider the following or a combination of the following:
1. Discontinue the expansion program at this time and get the short-term debt situation in order. Tighten control of accounts receivable and inventory, along with using funds from operations to reduce short-term debt.
  2. Issue additional stock to improve the short-term liquidity problem and the long-term debt situation. Because of the poor record on profitability and the way that management has financed past expansion, additional stock will probably not be well-accepted in the market place at this time.

#### PROBLEM 10-8

- a. Bennett Company had a decrease in cash of \$23,000, although net cash flow from operating activities was \$21,000. Net cash provided by financing activities was \$116,000, while net cash used by investing activities was \$160,000. The cash flows from operations and financing activities were not sufficient to cover the very significant net cash used by investing activities.

b. 1. Current ratio:

Current assets:

Cash	\$ 5,000	
Accounts receivable		92,000
Inventory		130,000
Prepaid expense	<u>4,000</u>	
Total current assets		\$231,000 (A)

Current liabilities:

Accounts payable	\$ 49,000	
Income taxes payable		5,000
Accrued liabilities		6,000
Current bonds payable		<u>10,000</u>
Total current liabilities		\$ 70,000 (B)

(A)  $\frac{\$231,000}{\$70,000} = 3.30$

(B)  $\$70,000$

2. Acid-test ratio:

Cash	\$ 5,000	
Accounts receivable		<u>92,000</u>
	\$ 97,000 (A)	
Total current liabilities		70,000 (B)

(A)  $\frac{\$97,000}{\$70,000} = 1.39$

(B)  $\$70,000$

3. Operating cash flow/current maturities of long-term debt and current notes payable:

Operating cash flow (from part (a))	\$ 21,000 (A)	
Current maturities of long-term debt and current notes payable	\$ 10,000 (B)	

(A)  $\frac{\$21,000}{\$10,000} = 2.10$

(B)  $\$10,000$

4. Cash ratio:

Cash	\$ 5,000 (A)	
Total current liabilities	\$ 70,000 (B)	

(A)  $\frac{\$5,000}{\$70,000} = 7.14\%$

(B)  $\$70,000$

c. 1. Times interest earned:

Income before taxes	\$ 99,000	
Plus interest expense	<u>11,000</u>	(A)
	<u>\$110,000</u>	

Interest expense	<u>\$ 11,000</u>	(B)
------------------	------------------	-----

(A)  $\frac{\$110,000}{\$11,000} = 10$  times per year

(B) \$ 11,000

2. Debt ratio:

Total liabilities:		
Accounts payable	\$ 49,000	
Income taxes payable	5,000	
Accrued liabilities	6,000	
Bonds payable	<u>175,000</u>	
Total liabilities	<u>\$235,000</u>	(A)

Total assets	<u>\$411,000</u>	(B)
--------------	------------------	-----

(A)  $\frac{\$235,000}{\$411,000} = 57.18\%$

(B) \$411,000

3. Operating cash flow/total debt:

Operating cash flow (from part (a))	\$ 21,000	(A)
-------------------------------------	-----------	-----

Total debt (from part (d.2.))	\$235,000	(B)
-------------------------------	-----------	-----

(A)  $\frac{\$ 21,000}{\$235,000} = 8.94\%$

(B) \$235,000

d. 1. Return on assets:

Net income	\$ 69,000	(A)
------------	-----------	-----

Average assets		
[((\$219,000 + \$411,000) divided by 2]	\$315,000	(B)

(A)  $\frac{\$ 69,000}{\$315,000} = 21.90\%$

(B) \$315,000

2. Return on common equity:

Net income	\$ 69,000	(A)
------------	-----------	-----

Average common equity		
[((\$96,000 + \$50,000 + \$106,000 + \$70,000) divided by 2]	\$161,000	(B)

$$(A) \quad \frac{\$ 69,000}{\$ 161,000} = 42.86\%$$

$$(B) \quad \$161,000$$

e. Operating cash flow/cash dividends:

Operating cash flow (from part (a))	\$ 21,000 (A)
Cash dividends	\$ 49,000 (B)
(A) $\frac{\$21,000}{\$49,000} = .43$	
(B) \$49,000	

f. In general, the liquidity ratios look very good except for the cash ratio. The cash ratio is approximately 7%.

g. Overall, the debt position appears to be good. Times interest earned is very good, and the debt ratio and cash flow/total debt are good.

h. The profitability appears to be extremely good. Both the return on assets and return on common equity are very high.

i. Operating cash flow/cash dividends indicates that operating cash flow was less than half the cash dividends.

j. Alternatives appear to be as follows:

1. Reduce the rate of expansion or possibly stop expansion at this time. This would reduce the need to increase receivables and inventory in the future and provide cash to pay accounts payable.
2. Issue additional long-term debt.
3. Issue additional common stock.

Possibly a combination of these alternatives should be considered. This company is very profitable, has a good debt position, and in general a good liquidity position, except for the most immediate ability to pay its bills. This needs to be corrected or there is the possibility of bankruptcy. The growth rate of this company is very high. Immediate cash is needed to fund the growth.

PROBLEM 10-9

- a. Zaro had substantially more net cash flow from operating activities than it had net income. Major reasons for this were depreciation, decrease in accounts receivable, and decrease in inventory.

The substantial cash flows from operating activities were used for investing activities and financing activities. Cash was particularly used for the financing activity of paying dividends.

- b. 1. Current Ratio:

Current assets:

Cash	\$ 30,000	
Accounts receivable, net	75,000	
Inventory	90,000	
Prepaid expenses	<u>3,000</u>	
	<u>\$198,000</u>	(A)

Current liabilities:

Accounts payable	\$ 25,500	
Income taxes payable	2,500	
Accrued liabilities	5,000	
Current portion of bonds payable	<u>20,000</u>	
	<u>\$ 53,000</u>	(B)

(A)  $\frac{\$198,000}{\$53,000} = 3.74$

(B) \$ 53,000

2. Acid-Test Ratio:

Cash	\$ 30,000	
Accounts receivable, net	<u>75,000</u>	
	<u>105,000</u>	(A)
Current liabilities	<u>\$ 53,000</u>	(B)

(A)  $\frac{\$105,000}{\$53,000} = 1.98$

(B) \$ 53,000

3. Operating cash flow/current maturities of long-term debt: and current notes payable:

Operating cash flow	<u>\$ 51,000</u>	(A)
Current maturities of long-term debt and current notes payable	\$ 20,000	(B)

(A)  $\frac{\$51,000}{\$20,000} = 2.55$

(B) \$20,000



4. Cash Ratio:

Cash	<u>\$ 30,000</u>	(A)
Current liabilities	<u>\$ 53,000</u>	(B)
(A) $\frac{\$30,000}{\$53,000} = .57$		
(B) \$53,000		

c. 1. Times Interest Earned:

Income before taxes	\$ 34,000	
Plus interest expense	<u>8,000</u>	(B)
	<u>\$ 42,000</u>	(A)

(A)  $\frac{\$42,000}{\$8,000} = 5.25$  times per year  
(B) \$ 8,000

2. Debt Ratio:

Total liabilities:		
Accounts payable	\$ 25,500	
Income taxes payable	2,500	
Accrued liabilities	5,000	
Bonds payable	<u>90,000</u>	
	<u>\$123,000</u>	(A)

Total assets	<u>\$253,000</u>	(B)
--------------	------------------	-----

(A)  $\frac{\$123,000}{\$253,000} = 48.62\%$   
(B) \$253,000

d. 1. Return on assets:

$$\frac{\$20,000}{(\$253,000 + \$274,000) \div 2} = \frac{\$20,000}{\$263,500} = 7.59\%$$

2. Return on Common Equity:

$$\frac{\$20,000}{(\$85,000 + \$54,000 + \$85,000 + \$45,000) \div 2}$$

$$\frac{\$20,000}{\$134,500} = 14.87\%$$

e. All liquidity ratios are very good.

f. The debt position is good.

g. Profitability is good.



- h. Substantial cash flow came from operating activities. A relatively small amount of funds were used for investing activities and paying down bonds. This left substantial cash available.

PROBLEM 10-10

- a. The Ladies Store  
Statement of Cash Flows  
For the Year Ended December 31, 2005

Cash flows from operating activities:		
Cash receipts from customers	\$150,000	
Cash receipts from interest	5,000	
Cash payments for merchandise	(110,000)	
Cash payments for interest	(2,000)	
Cash payments for income taxes	<u>(15,000)</u>	
Net cash flow from operating activities		\$
		28,000
Cash flows from investing activities:		
Cash outflow for purchase of truck	(20,000)	
Cash outflow for purchase of investment		
(80,000)		
Cash outflow for purchase of equipment	<u>(45,000)</u>	
Net outflow for investing activities		
		(145,000)
Cash flows from financing activities:		
Cash inflow from sale of bonds	100,000	
Cash inflow from issuance of note payable		
<u>40,000</u>		
Cash inflow from financing activities		
		<u>140,000</u>
Net increase in cash		<u>\$</u>
		<u>23,000</u>

- b. The major inflow of cash was from financing activities. The major outflow of cash was for investing activities.

PROBLEM 10-11

- |      |      |
|------|------|
| a. 1 | e. 4 |
| b. 5 | f. 3 |
| c. 5 | g. 3 |
| d. 5 | h. 5 |



PROBLEM 10-12

a.

Szabo Company  
Statement of Cash Flows  
Years Ended December 31, 2005, 2004, 2003

	<u>Total</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>
Increase (Decrease in Cash)				
Cash flows from operating activities				
Cash received from customers	\$508,381	\$173,233	\$176,446	\$158,702
Cash paid to suppliers & employees	(451,801)	(150,668)	(157,073)	(144,060)
Interest received	326	132	105	89
Interest paid	(1,357)	(191)	(389)	(777)
Income taxes paid	<u>(12,225)</u>	<u>(6,626)</u>	<u>(4,754)</u>	<u>(845)</u>
Net cash provided from operations	43,324	<u>15,880</u>	<u>14,335</u>	<u>13,109</u>
Cash flow from investing activities:				
Capital expenditures	(21,156)	(8,988)	(5,387)	(6,781)
Proceeds from property, plant & equipment disposals	<u>1,452</u>	<u>1,215</u>	<u>114</u>	<u>123</u>
Net cash used in financing activities	<u>(19,704)</u>	<u>(7,773)</u>	<u>(5,273)</u>	<u>(6,658)</u>
Cash flows from financing activities:				
Net increase (decrease) in short-term debt	12,300	- -	5,100	7,200
Increase in long-term debt	13,000	4,100	3,700	5,200
Dividends paid	(22,250)	(6,050)	(8,200)	(8,000)
Purchase of company stock	<u>(11,412)</u>	<u>(8,233)</u>	<u>(3,109)</u>	<u>(70)</u>
Net cash used in financing activities	<u>(8,362)</u>	<u>(10,183)</u>	<u>(2,509)</u>	<u>4,330</u>
Net increase (decrease) in cash & cash equivalents	15,258	(2,076)	6,553	10,781
Cash & cash equivalents at beginning of year	<u>7,551</u>	<u>24,885</u>	<u>18,332</u>	<u>7,551</u>
Cash & cash equivalents at end of year	<u>\$22,809</u>	<u>\$22,809</u>	<u>\$24,885</u>	<u>\$18,332</u>
Reconciliation of Net Income To Net Cash Provided by Operating Activities	<u>Total</u>	<u>2002</u>	<u>2001</u>	<u>2000</u>
Net income	\$11,358	\$7,610	\$3,242	\$506
Provision for depreciation & amortization	30,700	12,000	9,700	9,000
Provision for losses on accounts receivable	473	170	163	140
Gains on property, plant & equipment disposals	(4,620)	(2,000)	(1,120)	(1,500)
Changes in operating assets & liabilities				
Accounts receivable	(5,350)	(2,000)	(1,750)	(1,600)
Inventories:	(8,100)	(3,100)	(2,700)	(2,300)
Other assets	(57)	- -	- -	(57)
Accounts payable	12,300	- -	5,100	7,200
Accrued income taxes	1,200	1,200	- -	- -
Deferred income taxes	<u>5,420</u>	<u>2,000</u>	<u>1,700</u>	<u>1,720</u>
Net cash provided by operating activities	<u>\$43,324</u>	<u>\$15,880</u>	<u>\$14,335</u>	<u>\$13,109</u>

- b. 1. The three-year analysis revealed that 45% of cash flows from operations went into investing activities. The company is not replacing its productive assets.
2. Cash flows used in financing activities are 19% of the cash flows from operating activities. At first glance, one might assume the company is paying down debt. Closer analysis reveals that the company actually increased its debt levels, but payment to stockholders in the form of dividends and share purchases used more cash than was raised in the borrowing. The company is borrowing, and therefore, increasing debt.
3. Further analysis reveals that a substantial part of the borrowing is short-term rather than long-term. Such money is riskier.

c. Szabo Company  
Statement of Cash Flows  
For Year Ended December 31, 2005  
(Inflow & Outflow by Activity)

	<u>Inflow</u>	<u>Outflow</u>	<u>Inflow %</u>	<u>Outflow %</u>
Cash flows from operating activities:			96.95	
Cash received from customers	\$ 173,233			
Cash paid to suppliers & employees		\$150,668		83.35
Interest received	132		.08	
Interest paid		191		.11
Income taxes paid		<u>6,626</u>		<u>3.67</u>
Cash flows from operations	<u>173,365</u>	<u>157,485</u>	<u>97.03</u>	<u>87.13</u>
Cash flows from investing activities:				
Capital expenditures		8,988		4.97
Proceeds from property, plant & equipment disposals	<u>1,215</u>		<u>.68</u>	
Cash flows from investing activities	<u>1,215</u>	<u>8,988</u>	<u>.68</u>	<u>4.97</u>
Cash flows from financing activities:				
Net increase (decrease) in short-term debt	- -			
Increase in long-term debt	4,100		2.29	
Dividends paid		6,050		3.35
Purchase of company stock		<u>8,233</u>		<u>4.55</u>
Cash flows from financing activities	<u>4,100</u>	<u>14,283</u>	<u>2.29</u>	<u>7.90</u>
Total cash flows	178,680	<u>\$180,756</u>	<u>100.00</u>	<u>100.00</u>
Increase (decrease) in cash)	<u>(180,756)</u>			
	<u>\$ (2,076)</u>			

d. 1. 97% of cash inflows came from operations, and 2% came from financing activities. Significant cash inflows coming from operations is positive.

2. 83% of cash outflows were payments to suppliers and employees. 5% of outflows were used for investment in property, plant, and equipment. 8% of cash outflows were used to pay dividends and purchase shares. Almost as much was spent to pay stockholders as for outflows for capital expenditures.

PROBLEM 10-13

Owens appears to be the growth firm. Operating activities may represent a use of cash because of the expansion of receivables and inventory. The expansion of fixed assets would use cash in investing activities. Financing activities are providing cash for expansion.

Alpha appears to be the firm in danger of bankruptcy. Cash is used in operations, capital expenditures appear to be nominal, and financing activities are using instead of providing cash.

Arrow appears to be the older firm expanding slowly. Arrow is generating significant cash from operating activities, while nominal cash is used for investing activities. Financing activities are using cash instead of providing cash (dividends, repayment of long-term debt, etc.).

PROBLEM 10-14

a.

Accounts receivable, January 1, 2005	\$ 30,000
Sales	<u>480,000</u>
	510,000
Accounts receivable, December 31, 2005	<u>(40,000)</u>
	<u>\$470,000</u>

b. Accounts receivable increased by \$10,000 during the year 2005. Thus cash collected from customers was \$10,000 less than sales.

PROBLEM 10-15

a.

Revenues from customers	\$150,000
Decrease in accounts receivable	<u>8,000</u>
	<u>\$158,000</u>

- b. No. Depreciation expense is a non-cash charge reducing income.

## CASES

### CASE 10-1 THE BIG.COM

(This case provides the opportunity to review Amazon.Com for the period 1999-2001.)

- a. Investments have been made in other companies that Amazon does not control. Equity earnings (losses) are the investor's proportionate share of the investee's earnings (losses). These investments by Amazon have been unprofitable.
- b. Cash used in operating activities have been material for the period 1999-2001.
- c. Proceeds from long-term debt and other.
- d. It will likely be difficult to raise substantial funds from outside sources such as stock sales or bond sales. Amazon should consider on a plan to generate funds from operations.
- e. The market is indicating that it projects future operating cash flow discounted to be worth billions.

CASE 10-2 WATCH THE CASH

(This case provides an opportunity to review the cash flows of the Arden Group. Net cash provided by operating activities is presented using the direct method.)

a. Arden Group, Inc. and Consolidated Subsidiary  
Statements of Cash Flows

(In thousands)	Total	Fiscal Year Ended On Jan. 2, 1999	Fiscal Year Ended On Jan. 3, 1998	Fiscal Year Ended On Dec. 28, 1996
<b>Cash flows from operating activities:</b>				
Cash received from customers	\$823,916	\$296,751	\$274,683	\$252,482
Cash paid to suppliers and employees	(775,704)	(278,213)	(254,622)	(242,869)
Sales (purchases) of trading securities, net	7,540	- -	8,851	(1,311)
Interest and dividends received	4,810	1,449	1,683	1,678
Interest paid	(2,334)	(751)	(705)	(878)
Income taxes paid	<u>(13,214)</u>	<u>(6,689)</u>	<u>(3,831)</u>	<u>(2,694)</u>
Net cash provided by operating activities	<u>45,014</u>	<u>12,547</u>	<u>26,059</u>	<u>6,408</u>
<b>Cash flows from investing activities:</b>				
Capital expenditures	(24,981)	(4,244)	(7,896)	(12,841)
Deposits for property in escrow	2,664	- -	- -	2,664
Transfer to discontinued operations	(3,031)	- -	(2,575)	(456)
Purchases of available-for-sale securities	(6,995)	(3,793)	(3,202)	- -
Sales of available-for-sale securities	1,648	268	1,380	- -
Proceeds from the sale of property, plant & equipment, liquor licenses and leasehold interests	5,672	3,171	163	2,338
Payments received on notes from the sale of property, plant and equipment and liquor licenses	<u>56</u>	<u>- -</u>	<u>53</u>	<u>3</u>
Net cash used in investing activities	<u>(24,967)</u>	<u>(4,598)</u>	<u>(12,077)</u>	<u>(8,292)</u>
<b>Cash flows from financing activities:</b>				
Purchase and retirement of stock	(15,579)	- -	(13,966)	(1,613)
Principal payments on long-term debt	(2,739)	(1,188)	(799)	(752)
Principal payments under capital lease obligations	(760)	(230)	(205)	(325)
Loan payments received from officer/director	154	40	114	- -
Proceeds from equipment financing	2,500	- -	2,500	- -
Purchase of Company debentures	<u>(78)</u>	<u>(23)</u>	<u>- -</u>	<u>(55)</u>
Net cash used in financing activities	<u>(16,502)</u>	<u>(1,401)</u>	<u>(12,356)</u>	<u>(2,745)</u>
Net increase (decrease in cash and cash equivalents)	3,545	6,548	1,626	(4,629)
Cash and cash equivalents, beginning of period	<u>10,102</u>	<u>7,099</u>	<u>5,473</u>	<u>10,102</u>
Cash and cash equivalents, end of period	<u>\$13,647</u>	<u>\$13,647</u>	<u>\$7,099</u>	<u>\$5,473</u>



- b.
  - 1. Net cash provided by operating activities increased \$45,014,000. (Most of this increase came from cash received from customers.)
  - 2. Net cash used in investing activities increased \$24,967,000. (Most of this was for capital expenditures.)
  - 3. Net cash used in financing activities increased \$16,502,000. (Most of this was for the purchase and retirement of stock.)

c. Arden Group, Inc. and Consolidated Subsidiary  
 Statements of Cash Flows  
 Inflow & Outflow of Activity  
 Fiscal Year Ended On January 2, 1999

	Inflow	Outflow	Inflow Percentage	Outflow Percentage
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
Cash flows from operating activities:			98.37	
Cash received from customers	\$296,751			
Cash paid to suppliers and employees	- -	\$278,213		94.27
Sales of trading securities	- -	- -	- -	- -
Interest and dividends received	1,449	- -	.48	
Interest paid	- -	751		.25
Income taxes paid	- -	6,689		2.27
Cash provided by operating activities	<u>\$298,200</u>	<u>\$285,653</u>	<u>98.85</u>	<u>96.79</u>
Cash flows from investing activities:				
Capital expenditures	- -	\$4,244		1.43
Deposits for property in escrow	- -	- -		
Transfer to discontinued operations	- -	- -		
Purchase of available-for-sale securities		3,793		1.29
Sales of available-for-sale securities	268		.09	
Proceeds from the sale of property, plant and equipment, liquor licenses and leasehold interests	3,171		1.05	
Payments received on notes from the sale of property, plant and equipment and liquor licenses	- -	- -		
Cash used in investing activities	<u>\$3,439</u>	<u>\$8,037</u>	<u>1.14</u>	<u>2.72</u>
Cash flows from financing activities:				
Purchase and retirement of stock	- -	- -		
Principal payments on long-term debt	- -	\$1,188		.40
Principal payments under capital lease obligations	- -	230		.08
Loan payments received from officer/director	\$ 40	- -	.01	
Proceeds from equipment financing	- -	- -		
Purchase of Company debentures		23		.01
Cash used in financing activities	<u>\$ 40</u>	<u>\$1,441</u>	<u>.01</u>	<u>.49</u>
Total	<u>\$301,679</u>	<u>\$295,131</u>	<u>100.0</u>	<u>100.00</u>

- d. 1. Cash received from customers provided 98.37% of the inflow.
- 2. Cash paid to suppliers and employees made up 94.27% of the outflow.

CASE 10-3 RAPIDLY EXPANDING

(This case provides the opportunity to review a company that has had rapid growth in a market where there is extensive competition. In the author's opinion, the company did a very good job of presenting its financial results. This is a very interesting case for students to follow up on. This company addressed its problem. The stock on a split adjusted basis was approximately \$3.00 at the end of 1996. On July 1, 1999 the stock price was approximately \$70.00. One thing that the company did was reduce the selection of inventory and speed up turnover of inventory.)

a. Liquidity ratios

1. Current Ratio:

<u>1996</u>	<u>1995</u>
$\frac{\$1,560,543,000}{\$974,688,000}$	$\frac{\$1,240,667,000}{\$631,618,000}$
= 1.60	= 1.96

2. Acid-Test Ratio:

<u>1996</u>	<u>1995</u>
$\frac{\$86,445,000 + \$121,438,000}{\$974,688,000}$	$\frac{\$144,700 + \$84,440}{\$631,618,000}$
= .21	= .36

b. Long-term debt-paying ratios

1. Times Interest Earned:

<u>1996</u>	<u>1995</u>
$\frac{\$122,583,000}{\$43,594,000}$	$\frac{\$121,927,000}{\$27,876,000}$
= 2.81 times per year	= 4.37 times per year

2. Debt Ratio:

<u>1996</u>	<u>1995</u>
$\frac{\$1,890,832,000 - \$431,614,000}{\$1,890,832,000}$	$\frac{\$1,507,125,000 - \$376,122,000}{\$1,507,125,000}$
= 77.17%	= 75.04%

3. Operating Cash Flow/Total Debt:

<u>1996</u>	<u>1995</u>
$\frac{\$99,520,000}{\$1,459,218,000}$	$\frac{(\$37,411,000)}{\$1,131,003,000}$
= 6.82%	= 3.31% negative

c. Profitability Ratios

1. Total Asset Turnover:

<u>1996</u>	<u>1995</u>
$\frac{\$7,217,488,000}{\$1,890,832,000}$	$\frac{\$5,079,557,000}{\$1,507,125,000}$
= 3.82 times per year	= 3.37 times per year

2. Return on Assets:

<u>1996</u>	<u>1995</u>
$\frac{\$48,019,000}{\$1,890,832,000}$	$\frac{\$5,079,557,000}{\$1,507,125,000}$
= 2.54%	= 3.83%

3. Return on Total Equity:

<u>1996</u>	<u>1995</u>
$\frac{\$48,019,000}{\$431,614,000}$	$\frac{\$57,651,000}{\$376,122,000}$
= 11.13%	= 15.33%

4. Operating Cash Flow Per Share:

<u>1996</u>	<u>1995</u>
$\frac{\$99,520,000}{\$43,640,000}$	$\frac{(\$37,411,000)}{\$43,471,000}$
= \$2.28	= \$.86 negative

d. Investor Analysis Ratios

1. Degree of Financial Leverage:

<u>1996</u>	<u>1995</u>
$\frac{\$122,583,000}{\$78,989,000}$	$\frac{\$121,927,000}{\$94,051,000}$
= 1.55	= 1.30

2. Price/Earnings Ratio:

High Market Price

<u>1996</u>	<u>1995</u>
$\frac{29\%}{\$1.10}$	$\frac{\$45 \frac{1}{4}}{\$1.33}$
= 26.93	= 34.02

Low Market Price

<u>1996</u>	<u>1995</u>
$\frac{\$12 \frac{3}{4}}{\$1.10}$	$\frac{\$22 \frac{1}{8}}{\$1.33}$
= 11.59	= 16.64

3. Percentage Of Earnings Retained:

<u>1996</u>	<u>1995</u>
$\frac{\$48,019,000}{\$48,019,000}$	$\frac{\$57,651,000}{\$57,651,000}$
= 100%	= 100%



#### 4. Book Value:

<u>1996</u>	<u>1995</u>
$\frac{\$431,614,000}{42,842,000}$	$\frac{\$376,122,000}{42,216,000}$
= \$10.07	= \$8.91

#### e. Horizontal Common-Size Analysis

<u>Item</u>	<u>1996</u>	<u>1995</u>	<u>1994</u>	<u>1993</u>	<u>1992</u>
1. Revenues	776%	546%	323%	174%	100%
2. Gross profit	517%	381%	252%	157%	100%
3. Selling, general and administrative expenses	502%	350%	162%	153%	100%
4. Operating income	653%	649%	411%	191%	100%
5. Net earnings	500%	600%	430%	207%	100%
6. Number of stores	344%	279%	207%	152%	100%
7. Average revenue per store	217%	199%	158%	123%	100%
8. Total assets	561%	447%	282%	130%	100%
9. Shareholders' equity	274%	239%	198%	116%	100%

#### f. Executive Summary

##### Liquidity

Liquidity declined in 1996 and appears to be relatively low. This is indicated by the current ratio and the acid-test ratio.

There is a substantial improvement in cash provided by operations, but this improvement substantially came from increasing accounts payable.

##### Debt

The debt position declined in 1996 and appears to be high. This is indicated by the times interest earned and the debt ratio.



There is a substantial improvement in operating cash flow/total debt, but this improvement substantially came from increasing accounts payable.

## Profitability

In general, profitability declined in 1996. This is indicated by the return on assets and the return on total equity. There was an improvement in the total asset turnover.

Sales volume is very good, as is revenues per store. There is a problem in having profitability increase in relation to volume of sales. A major contributing factor to the reduced profitability in relation to revenues is a declining gross profit percentage.

## Investor Analysis

The stock price substantially decreased in 1996 consistent with our analysis of liquidity, debt, and profitability. In the short run, the increase in accounts payable could be a major problem.

In the author's opinion, it is difficult to see a major rise in the stock price until the areas of concern in liquidity, debt, and profitability are improved.

## CASE 10-4 THE RETAIL MOVER

(This case represents a firm on the verge of bankruptcy. The company is W.T. Grant. The years in the case are not the actual years.)

a. 1.

	<u>1997</u>	<u>1998</u>	<u>2001</u>
Total current assets	\$628,408,89	\$719,478,44	\$1,044,689,
Total current	5	1	000
liabilities	\$366,718,65	\$458,999,68	\$661,058,00
Working capital	6	2	0
	\$261,690,23	\$260,478,75	\$383,631,00
	9	9	0

## Comment

Working capital was fairly constant between 1997 and 1998. Working capital increased materially in 2001 in relation to 1998.

2.

Current ratio	<u>1997</u>	<u>1998</u>	<u>2001</u>
$\frac{\text{Current Assets}}{\text{Current Liabilities}} =$	1.71	1.57	1.58

Comment

The absolute current ratios appear to be too low. There was a substantial decline in the current ratio between 1997 and 1998.

	<u>1998</u>	<u>2001</u>
b. Net income	\$39,577,000	\$10,902,000

Cash (outflow) from  
operating activities     (\$15,319,217)     (\$93,204,000)

A net increase in receivables and inventories were the major reasons for the substantial difference between net income and cash (outflow) from operating activities in both 1998 and 2001.

c. There was an apparent write down in customers' installment accounts receivable and merchandise inventories.

The substantial decrease in deferred finance income is apparently related to the write down in customers' installment accounts receivable.

d. Company perspective

The company was apparently desperate for liquidity. The company would have preferred a longer term, but under the circumstances would take whatever they could get.

Bank perspective

This loan appears to be a major blunder on the part of the bank. Apparently the short-term commercial notes were no longer available, probably because of the financial condition of the company.

CASE 10-5 NON-CASH CHARGES

(Companies frequently announce non-cash charges. This case provides an opportunity to discuss if non-cash charges are non-cash charges in the long run.)

a. True

Cash inflow from operations will equal the revenue from operations in the long run.

b. 1992 - \$800 million

1992 - 1999 It was estimated that the accrual would be sufficient to cover the company's uninsured costs for cases received until the year 2000.

c. \$545 million in 1996

Cash payments associated with charge will begin after the year 2000 and will be spread over 15 years or more.

d. Cash inflow will be recorded when received.

The related revenue will likely be recorded in the same period that the cash is received. This is an example of conservatism.

e. If they do not win the suit the expenses (cash outflow) for asbestos claims will likely be substantially higher than previously provided for.

f. Asbestos related expenses (cash outflow) will likely be more than previously estimated.

g. 1.1996 - \$875,000,000

2.1997 - \$97,000,000  
1996 - \$101,000,000  
1995 - \$251,000,000

3.1997 - \$300,000,000  
1996 - \$267,000,000  
1995 - \$308,000,000

Note: On Thursday, October 5, 2000, Owens Corning voluntarily filed a petition for reorganization under Chapter 11 bankruptcy

protection in the United States Bankruptcy Court in Wilmington,  
Delaware.

Owens Corning News release, January 17, 2003

"Owens Corning file Joint Plan of Reorganization with Asbestos Creditors in Chapter 11 Case". . . . "The plan sets forth a proposed consensual framework to determine creditor distributions, with recoveries based on aggregate asbestos claims of \$16 billion, and a preferred recovery to holders of bank claims of \$400 million, in addition to pro rata recovery on the balance of their claims. . . .

CASE 10-6 SORREY - GIVE IT BACK

(This case is a follow up to the case non-cash charges. Owens Corning Fiberglass declared bankruptcy because of asbestos cases.)

In bankruptcy Owens Corning is demanding the return of dividends paid prior to bankruptcy. This case is still pending. It will have major implications to investors if Owens Corning is successful and receives the dividends back.

CASE 10-7 CASH MOVEMENTS AND PERIODIC INCOME DETERMINATION

a. Income determination is not an exact science. A substantial amount of subjectivity is used in income determination. Many estimates are typically involved when determining income.

b. Cash flow is determined in an objective manner.

c. In theory, this is a true statement.

United States accounting principles provide for by-passing the income statement for some apparent revenue or expense items. The balance of these items is presented in shareholders' equity in the balance sheet. Examples are net unrealized loss in noncurrent marketable equity securities, cumulative translation adjustments, and cumulative pension liability adjustments. In the long run the revenue (expense) from these items go through the income statement.

An exception in U.S. accounting standards is that compensation expense related to options is usually not recognized in the income statement.

d. In the short run, a negative cash flow from operations could be compensated for by cash flow from investing and financing activities.

- e. Revenue and expense items that were more positive for income in the past than they were for cash flow will need to materialize in future cash flow. An example would be sales on account (credit). Collection will need to be made.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise using the Boeing Company addresses cash flow issues.

a. Addresses cash flow from operating activities.

b. Determine the cash flow ratios for the following:

1. Worldscope Ratios

Cash Flow per Share  
Free Cash Flow per Share

2. Thomson Financial Ratios

Cash Flow to Sales

3. SEC Annual Ratios

None

c. Comparison of cash flow ratios determined in part (b) with the books cash flow ratios.

Books cash flow ratios:

1. Operating Cash Flow/Current  
Maturities of Long-term Debt and Current Notes Payable

2. Operating Cash Flow/Total Debt

3. Operating Cash Flow per Share

4. Operating Cash Flow/Cash Dividends

Cash Flow per share is the only common ratio.

d. Free Cash per Share

This appears to be a logical ratio. We need the definition of free cash flow.

Cash Flow to Sales

Does not appear to be a logical ratio. We would not expect cash flow to resemble sales.



**Chapter 11**  
**Expanded Analysis**

**TO THE NET**

1. Cooper Tire & Rubber

	December 31	
	<u>2001</u>	<u>2000</u>
a. Inventory reserve	\$46,565,000	\$52,476,000
b. 2001 effective tax rate	37.7%	
c. 2001 net income	\$18,166,000	
d. Approximate income for 2001 if inventory had been valued at approximate cost.		

2001 net income		\$18,166,000
Reserve 2001	\$46,565,000	
Reserve 2000	<u>52,476,000</u>	
Decrease	5,911,000	
Tax rate	<u>37.7%</u>	
Decrease in income		<u>2,228,447</u>
Adjusted net income		<u><u>\$15,937,553</u></u>

2. Albertson's Inc.

- |    |   |               |
|----|---|---------------|
| a. | Net earnings for the 52 weeks<br>January 31, 2002                                       | \$501,000,000 |
| b. | \$6,000,000 (Disclosed in notes to consolidated financial<br>statements - Inventories). |               |

## QUESTIONS

- 11- 1. Based on the study reported in the text, liquidity and debt ratios are regarded as the most significant ratios by commercial loan officers.
- 11- 2. (a) Debt/equity, current ratio  
(b) Debt/equity, current ratio
- 11- 3. The dividend payout ratio does not primarily indicate liquidity, debt, or profitability. It is a ratio that is of interest to investors because it indicates the percentage of earnings that is being paid out in dividends. From a view of controlling a loan and preventing the stockholders from being paid before the bank is paid, the dividend payout ratio can be used as an effective ratio.
- 11- 4. Based on the study reported in the text, financial executives do regard profitability ratios as the most significant ratios.
- 11- 5. (a) Return on equity (b) Return on assets  
(c) Net profit margin (d) Earnings per share  
(e) Return on capital
- Each of these ratios would be considered a measure of profitability.
- 11- 6. The CPAs gave the highest significance rating to two liquidity ratios. These ratios are the current ratio and the accounts receivable turnover days. The highest-rated profitability ratio was after-tax net profit margin, while the highest-rated debt ratio was debt/equity.
- 11- 7. According to the study reported in this book, financial ratios are not used extensively in annual reports to interpret and explain financial statements. Likely reasons for this are that management does not want to interpret and explain the financial statements to the users, or management is of the opinion that interpretations and explanations can be made more effectively in a descriptive way rather than by the use of financial ratios. Also, there are no authoritative guidelines as to what financial ratios should be included in the annual report, except for earnings per share.

- 11- 8. (a) Financial summary (b) Financial highlights  
 (c) Financial review (d) President's letter  
 (e) Management discussion

- 11- 9. Profitability ratios and ratios related to investing are the most likely to be included in annual reports.

Profitability ratios are the most popular ratios with management. Ratios related to investing are logical to be included in the annual report because one of the major objectives of the annual report is to inform stockholders.

- 11-10. Earnings per share is the only ratio that is required to be disclosed in the annual report. It must be disclosed at the bottom of the income statement.

- 11-11. Presently, no regulatory agency such as the Securities and Exchange Commission or the Financial Accounting Standards Board accepts responsibility for determining either the content of financial ratios or the format of presentation for annual reports. The exception to this is earnings per share.

There are many practical and theoretical issues related to the computation of financial ratios. As long as each individual is allowed to exercise his/her opinion as to the practical and theoretical issues, there will be a great divergence of opinion on how a particular ratio should be computed.

- 11-12. Accounting policies that result in the slowest reporting of income are the most conservative.

11-13.

	<u>Conservative</u>	
	<u>Yes</u>	<u>No</u>
(a)	x	
(b)		x
(c)	x	
(d)		x
(e)	x	
(f)		x
(g)	x	
(h)	x	
(i)	x	
(j)		x
(k)	x	

- 11-14. Substantial research and development will result in more conservative earnings because research and development expenses are charged to the period in which they are incurred.
- 11-15. Such a model could be used by management to take preventive measures. Such a model could aid investors in selecting and disposing of stocks. Banks could use this model to aid in loan decision making and in monitoring loans. Firms could use this model in making credit decisions and in monitoring accounts receivable. An auditor could use such a model to aid in the determination of audit procedures and in making a decision as to whether the firm will remain as a going concern.
- 11-16. There are many definitions or descriptions of financial failure. Financial failure can include liquidation, deferment of payments to short-term creditors, deferment of payment of interest on bonds, deferment of payment of principal on bonds, and the omission of a preferred dividend.
- 11-17. (a) Cash flow/Total debt  
(b) Net income/Total assets (return on assets)  
(c) Total debt/Total assets (debt ratio)
- 11-18. (a) cash - low (b) accounts receivable - high  
(c) inventory - low
- 11-19. Firms that scored below 2.675 are assumed to have similar characteristics of past failures.
- 11-20. Variable  $X_4$  in the model requires that the market value of the stock be determined. Determining the market value of the stock of a closely held company can be difficult if not impossible.
- 11-21. False. These studies help substantiate that firms that have weak ratios are more likely to go bankrupt than firms that have strong ratios.
- 11-22. The abnormally low turnover for accounts receivable indicates that a very detailed audit of accounts receivable should be performed to satisfy ourselves of the collectibility of the receivables.

11-23. A proposed comprehensive budget should be compared with financial ratios that have been agreed upon as part of the firm's corporate objectives. If the proposed comprehensive budget will not result in the firm achieving its objectives, then attempts should be made to change the game plan in order to achieve the corporate objectives.

- 11-24.
  - 1. Line
  - 2. Column
  - 3. Pie
  
- 11-25.
  - 1. Not extending the vertical axis to zero
  - 2. Having a broken vertical axis
  
- 11-26. Visually, a pie graph can mislead. Also, some accounting data do not fit on a pie graph.
  
- 11-27. The surveyed analysts gave the highest significance ratings to profitability ratios.
  
- 11-28. This statement is not true. Chartered Financial Analysts gave relatively low significance ratings to liquidity ratios.
  
- 11-29.
  - a. The proper use of estimates and judgments to prepare financial statements.
  
  - b. Some firms use estimates and judgments to improperly manipulate financial statements. Also some firms deliberately make errors to manipulate financial statements.

## PROBLEMS

### PROBLEM 11-1

- a. 5 An incorrect presentation in the financial statements should be corrected.
- b. 4 Collection of accounts receivable would increase cash but would not increase working capital.
- c. 3 From the expense side, writing off expenditures reduces income and reduces assets. From the revenue side, not recognizing revenue reduces income and assets.
- d. 4 This type of situation would have high expenses in relation to revenue. The plant expansion and start-up costs would increase financing requirements.
- e. 3 A high turnover of net working capital would indicate good management of working capital.
- f. 1 Exercised stock options would increase stockholders' equity and thus improve the debt/equity ratio.

### PROBLEM 11-2

- a. 1 A decline in the number of days' sales outstanding will indicate tighter credit policies. Lower prices might cause more sales and receivables as would better credit terms. Lower sales would give lower sales per day, not an overall decline in days' sales.
- b. 2 Financial leverage causes magnification of changes in earnings and is only good strategy when earnings are stable.
- c. 1 This is basically the same as current assets - inventory.
- d. 2 The times interest earned ratio measures long-term borrowing ability and the risk inherent therein.
- e. 3 Net income plus income taxes and bond interest expense by annual bond interest expense would be a reasonable computation of times bond interest earned.

PROBLEM 11-3

- a. The current ratio has all current assets in the numerator, while in the acid test ratio, inventory is removed. A large inventory would cause the decline in the acid-test ratio. The decline in the inventory turnover supports this conclusion.
- b. Financial leverage is the extent to which fixed costs of financing are used, namely debt. The greater the financial leverage, the greater the magnification of changes in earnings. The measures of debt, as indicated by total debt to total assets and long-term debt to total assets, have declined. This increases financial leverage. However, the firm does have leverage and the decline in profit to shareholders is magnified by it.
- c. The fixed asset turnover has risen, generally indicating either a rise in sales or a decline in fixed assets. Sales as a percent of 2002 sales are given. Assume 2002 sales were \$100; 2003, \$103, and 2004, \$106.

If  $\$100/\text{fixed assets} = 1.75$ , then fixed assets = \$57 in 2002

If  $\$103/\text{fixed assets} = 1.88$ , then fixed assets = \$55 in 2003

If  $\$106/\text{fixed assets} = 1.99$ , then fixed assets = \$53 in 2004

There has actually been a slight decline in net fixed assets.

PROBLEM 11-4

- a. 1. Rate of Return on Total Assets:

$$\frac{\begin{array}{l} \text{Net Income Before} \\ \text{Minority Share Of} \\ \text{Earnings And Nonrecurring} \\ \text{Items} \end{array}}{\text{Average Total Assets}} = \frac{- \$ .2}{(\$19.7 + 19.4) \div 2} = (-1.0\%)$$

Negative

The rate of return on total assets is negative in 2004, due to the negative net income figure.

- 2. Acid-Test Ratio:

Cash Equivalents + Marketable



1.09 
$$\frac{\text{Securities} + \text{Net Receivables}}{\text{Current Liabilities}} = \frac{\$13.5 - \$2.8 - \$.6}{\$9.3} =$$

3. Return on Sales:

Net Income Before Minority  
Share Of Earnings And  
Nonrecurring Items =  $\frac{\$-.2}{\$24.9} = (-.8\%)$  Negative  
Net Sales

4. Current Ratio :

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\$13.5}{\$24.9} = (-.8\%) \text{ Negative}$$

5. Inventory Turnover:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$18.0}{(\$3.2 + \$2.8) / 2} = 6 \text{ times per year}$$

b. 1. Rate Of Return On Total Assets:

Unfavorable - The rate is low and has been declining.

2. Return on Sales:

Unfavorable - The rate is low and has been declining.

3. Acid-Test Ratio:

Favorable - The direction of change is unfavorable, but it is probably more than adequate.

4. Current Ratio:

Unfavorable - The decline has been sharp, and the ratio is probably too low.

5. Inventory Turnover:

Neutral - Inventory turnover has been fairly constant, and we don't know enough about the business to determine if the turnover is adequate.

6. Equity Relationships:

Unfavorable - The trend towards a heavy reliance on current liabilities is unfavorable. This high proportion

of current liabilities could result in short-term liquidity problems.

7. Asset Relationships:

Neutral - The reduction in the proportion of assets that are current could indicate that the firm is working its current assets harder. The reduction in the proportion of assets that are current could also indicate that there has been an expansion in property, plant, and equipment, without an adequate increase in current assets.

c. The facts available from the problem are inadequate to make final judgment; additional information as listed in Part D would be necessary. However, the facts given do not present an overall good picture of D. Hawk. The company doesn't appear to be in serious trouble at the moment, but most of the trends reflected in figures are unfavorable. The company appears to be developing liquidity problems:

1. Cash and securities are declining.
2. Inventories and plant and equipment are an increasing portion of the assets.
3. Current liabilities are an increasing portion of capital.

The operations of the company also show unfavorable trends:

1. Cost of goods sold is increasing as a percent of sales.
2. Administrative expenses are increasing as a percent of sales.
3. Recognizing that prices have risen, it appears that physical volume at D. Hawk might have actually decreased.

On the basis of these observations and the fact that D. Hawk would be a very large customer (thus a potentially large loss if the accounts become uncollectible), credit should be extended to D. Hawk only under carefully controlled and monitored conditions.

d. Additional information would be:

1. Quality of management of D. Hawk Company.
2. The locations of the D. Hawk stores.
3. The current activities of D. Hawk, which have increased plant and equipment but not inventories.
4. Industry position of D. Hawk Company.
5. Credit rating of the D. Hawk Company.
6. Current economic conditions.
7. Capacity of L. Konrath Company to handle such a large single account.
8. Normal ratios for the industry.



PROBLEM 11-5

a.

Liquidity Ratios:

$$1. \text{ Days' Sales in Inventory} = \frac{\text{Ending Inventory}}{\text{Cost Of Goods Sold}/365}$$

$$\frac{\$63,414}{\$495,651/365} = \frac{\$63,414}{\$1,357.95} = 46.70 \text{ days}$$

$$2. \text{ Merchandise Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\frac{\$495,651}{(\$63,414 + \$74,890)/2} = \frac{\$495,651}{\$69,152} = 7.17 \text{ times per year}$$

$$3. \text{ Inventory Turnover in Days} = \frac{\text{Average Inventory}}{\text{Cost Of Goods Sold}/365}$$

$$\frac{(\$63,414 + \$74,890)/2}{\$495,651/365} = \frac{\$69,152}{\$1,357.95} = 50.92 \text{ days}$$

$$4. \text{ Operating Cycle} = \text{Accounts Receivable Turnover in Days} + \text{Inventory Turnover in Days}$$

$$\text{Accounts Receivable Turnover in Days} = \frac{\text{Average Gross Receivables}}{\text{Net Sales}/365}$$

$$\frac{(\$99,021 + \$750 + \$83,575 + \$750)/2}{\$578,530/365} =$$

$$\frac{\$92,048}{\$1,585.01} = 58.07 \text{ days}$$

$$58.07 \text{ days} + 50.92 \text{ days} = 108.99 \text{ days}$$

$$5. \text{ Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\$227,615 - \$73,730 = \$153,885$$

$$6. \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\frac{\$227,615}{\$73,730} = 3.09$$

$$7. \text{ Acid-Test Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Current Liabilities}}{\text{Current Liabilities}}$$

$$\frac{\$64,346 + \$99,021}{\$73,730} = 2.22$$

$$8. \text{ Cash Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

$$\frac{\$64,346}{\$73,730} = .87$$

Debt:

$$1. \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\frac{\$370,264 - \$198,084}{\$370,264} = \frac{\$172,180}{\$370,264} = 46.50\%$$

$$2. \text{ Debt/Equity} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}}$$

$$\frac{\$370,264 - \$198,084}{\$198,084} = \frac{\$172,180}{\$198,084} = 86.92\%$$

$$3. \text{ Times Interest Earned} = \frac{\text{Recurring Earnings Excluding Interest Expense, Tax Expense, Equity Earnings and Minority Income}}{\text{Interest Expense, Including Capitalized Interest}}$$

$$\frac{\$43,138 + \$4,308}{\$4,308} = \frac{\$47,446}{\$4,308} = 11.01 \text{ times per period}$$

Profitability:

$$1. \text{ Net Profit Margin} = \frac{\text{Net Income Before Minority Share Of Earnings And Nonrecurring Items}}{\text{Net Sales}}$$

$$\frac{\$23,018}{\$578,530} = 3.98\%$$

$$2. \text{ Total Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

$$\frac{\$578,530}{(\$370,264 + \$295,433)/2} = \frac{\$578,530}{\$332,848.5} = 1.74 \text{ times per year}$$

$$3. \text{ Return on Assets} = \frac{\text{Net Income Before Minorit Share of Earnings And Nonrecurring Items}}{\text{Average Total Assets}}$$

$$\frac{\$23,018}{(\$370,264 + \$295,433)/2} = \frac{\$23,018}{\$332,848.5} = 6.92\%$$

$$4. \text{ Return on Total Equity} = \frac{\text{Net Income Before Nonrecurring Items Dividends On Redeemable Preferred Stock}}{\text{Average Total Equity}}$$

$$\frac{\$23,018}{(\$198,084 + \$175,583)/2} = \frac{\$23,018}{\$186,833.5} = 12.32\%$$

b. Approximate income for 2004 if inventory had been valued at approximate current cost:

2004 net income as reported		\$ 23,018
Net decrease in inventory reserve		
2004	\$35,300	
2003	<u>41,100</u>	
(a)	\$ 5,800	
(b) Effective tax rate	36.6%	
(c) Decrease in taxes (a) x (b)	\$ 2,123	
(d) Net decrease in income		
[ (a) - (c) ]	\$5,800 - \$2,123	
<u>(3,677)</u>		

Approximate income for 2004 if inventory had been valued at approximate current cost \$ 19,341

Inventory adjusted:		
As disclosed on the balance sheet		\$ 63,414
Increase in inventory		<u>35,300</u>
		<u>\$ 98,714</u>

Deferred current tax liability:  
 Increase related to inventory reserve  
 \$35,300 x 36.6% =  
 12,920

Retained earnings adjusted:

As disclosed on the balance sheet	\$154,084
Increase related to inventory reserve (\$35,300 x 36.6%)	
<u>22,380</u>	<u>\$176,464</u>



Liquidity:

1. Days' Sales In Inventory

$$\frac{\$63,414 + \$35,300}{\$495,651/365} = \frac{\$98,714}{\$1,357.95} = 72.69 \text{ days}$$

2. Merchandise Inventory Turnover

$$\frac{\$495,651}{(\$63,414 + \$35,300 + \$74,890 + \$41,100)/2} = \frac{\$495,651}{\$107,352}$$

= 4.62 times per year

3. Inventory Turnover In Days

$$\frac{\$107,352}{\$495,651/65} = \frac{\$107,352}{\$1,357.95} = 79.05 \text{ days}$$

4. Operating Cycle

$$58.07 \text{ days} + 79.05 \text{ days} = 137.12 \text{ days}$$

5. Working Capital

$$(\$227,615 + \$35,300) - (\$73,730 + \$12,920) * = \$176,265$$
$$* \$35,300 \times 36.6\% = \$12,920$$

6. Current Ratio

$$\frac{\$262,915}{\$86,650} = 3.03$$

7. Acid-Test Ratio

$$\frac{\$64,346 + \$99,021}{\$73,730 + \$12,920} = \frac{\$163,367}{\$86,650} = 1.89$$

8. Cash Ratio

$$\frac{\$64,346}{\$73,730 + \$12,920} = \frac{\$64,346}{\$86,650} = .74$$

Debt:

1. Debt Ratio

$$\frac{\$370,264 - \$198,084 + \$12,920}{\$370,264 + \$35,300} = \frac{\$185,100}{\$405,564} = 45.64\%$$

2. Debt/Equity

$$\frac{\$370,264 - \$198,084 + \$12,920}{\$198,084 + \$22,380} = \frac{\$185,100}{\$220,464} = 83.96\%$$

3. Times Interest Earned

$$\frac{\$43,138 - \$4,308 - \$5,800}{\$4,308} = \frac{\$41,646}{\$4,308} = 9.67 \text{ times per year}$$

Profitability:

1. Net Profit Margin

$$\frac{\$23,018 - \$3,677}{\$578,530} = \frac{\$19,341}{\$578,530} = 3.34\%$$

2. Total Asset Turnover

$$\frac{\$578,530}{(\$370,264 + \$295,433 + \$35,300 + \$41,100) / 2} =$$
$$\frac{\$578,530}{\$742,097 / 2} = \frac{\$578,530}{\$371,049} = 1.56 \text{ times per year}$$

3. Return On Assets

$$\frac{\$23,018 - \$3,677}{(\$370,264 + \$295,433 + \$35,300 + \$41,100) / 2}$$
$$\frac{\$19,341}{\$371,049} = 5.21\%$$

4. Return On Total Equity

$$\frac{\$19,341}{(\$198,084 + \$175,583 + \$22,380 + \$28,482^*) / 2}$$

$$*\$41,100 \times (1 - 30.7\%)$$
$$\$41,100 \times 69.30\% = \$28,482.30$$

$$\frac{\$19,341}{\$212,265} = 9.11\%$$

c.

<u>Ratio</u>	<u>Without considering the LIFO reserve</u>	<u>Considering the LIFO reserve</u>
<b>Liquidity:</b>		
Days' sales in inventory	46.70 days	72.69 days
Merchandise inventory turnover	7.17 times per year	4.62 times per year
Inventory turnover in days	50.92 days	79.05 days
Operating cycle	108.99 days	137.12 days
Working capital	\$153,885	\$176,265
Current ratio	3.09	3.03
Acid-test ratio	2.22	1.89
Cash ratio	.87	.74
<b>Debt:</b>		
Debt ratio	46.50%	45.64%
Debt/equity	86.92%	83.96%
Times interest earned	11.01 times per year	9.67 times per year
<b>Profitability:</b>		
Net profit margin	3.98%	3.34%
Total asset turnover	1.74 times per year	1.56 times per year
Return on assets	6.92%	year
Return on total equity	12.32%	5.21%
		9.11%

All but one liquidity ratio was less favorable when considering the LIFO reserve. Some of the liquidity ratios declined substantially. The only liquidity indicator to improve was working capital.

Debt ratios were slightly more favorable when considering the LIFO reserve. Profitability declined moderately when the LIFO reserve was considered.

PROBLEM 11-6

- Decreases retained earnings, increases payables.  
a, c, g, i, j
- Reduces retained earnings, increases common stock.  
f, g, i
- Increases cash, increases retained earnings.

b, d, h

4. This creates an arrearage, which would increase the amount for preferred stock in calculating book value for common.

i

5. This merely increases the number of shares. No effect until the stock is sold.

d (Assumption that the preferred shares would be held as a temporary investment)

6. Decreases cash, decreases dividends payable. Increases current ratio if originally more than 1:1.

d

7. No change in equity, but more shares. Therefore reduces equity per share of common stock.

PROBLEM 11-7

a.

Argo Sales Corporation  
Balance Sheet  
December 31, 2004

Current assets:			
	Cash	\$ 20,000 (6)	
	Marketable securities	80,000 (7)	
	Accounts receivable	150,000 (5)	
	Inventory	120,000 (8)	
	Prepaid expenses	<u>5,000 (11)</u>	
(10)	Total current assets		
			\$375,000
Fixed assets:			
	Land, buildings, and equipment	\$292,500 (15)	
	Less accumulated depreciation	<u>97,500 (16)</u>	
(14)	Total fixed assets		
			195,000
(13)	Intangible assets		<u>30,000</u>
(12)	Total assets		<u>\$600,000</u>
Current liabilities:			
	Accounts payable	\$100,000 (17)	
	Accrued expenses payable	<u>25,000 (18)</u>	
(9)	Total current liabilities		
			\$125,000
Long-term liabilities:			
(21)	5% Bonds payable - due 2010		<u>75,000</u>
(20)	Total liabilities		
			\$200,000
Stockholders' Equity:			
	6% Preferred stock, \$100 par value, 500 shares authorized, issued and outstanding (25)	\$ 50,000 (24)	
	Common stock, \$10 par value, \$22,500 shares authorized, issued and outstanding (22)	225,000 (23)	
	Contributed capital in excess of par value	27,500 (26)	
	Retained earnings	<u>97,500 (27)</u>	
(19)	Total stockholders' equity		<u>400,000</u>

Total liabilities and  
(28) stockholders' equity

\$600,000

Argo Sales Corporation  
Income Statement  
For the Year Ended December 31, 2004

(1) Net sales		\$1,200,000	
(3) Less cost of goods sold		<u>720,000</u>	
(2) Gross profit on sales		480,000	
Selling expenses	\$240,000		(4)
Administrative expenses	116,250		(30)
Interest expense	<u>3,750</u>		(29)
Net income	<u>\$ 120,000</u>		<u>360,000</u>

Notes: Supporting Computations for Amounts on Financial Statements

$$(1) \quad \text{Sales} = \frac{\text{NetIncome}}{\text{NetProfitRate}} = \frac{\$120,000}{.10} = \$1,200,000$$

(2) Gross Profit:

$$\text{Sales} \times \text{Gross Profit Rate} = \$1,200,000 \times .40 = \$480,000$$

(3) Cost Of Goods Sold:

$$\text{Sales} - \text{Gross Profit} = \$1,200,000 - \$480,000 = \$720,000$$

(4) Selling Expenses:

$$\text{Sales} \times \text{Selling Expenses Rate} = \$1,200,000 \times .20 = \$240,000$$

(5) Accounts Receivable:

$$\frac{\text{Sales}}{\text{Account\&ReceivableTurnover}} = \frac{\$1,200,000}{8} = \$150,000$$

(6) Cash:

$$\begin{aligned} \text{QuickAssets} &= \frac{\text{Account\&Receivable}}{\% \text{ Of QuickAssetsIn Account\&Receivable}} \\ &= \frac{\$150,000}{.60} = \$250,000 \end{aligned}$$

$$\text{Cash} = \text{Quick Assets} \times \% \text{ of Quick Assets In Cash}$$

$$= \$250,000 \times .08 = \$20,000$$





(7) Marketable Securities:

Quick Assets x % Of Quick Assets In Securities

$$= \$250,000 \times .32 = \$80,000$$

$$(8) \quad \text{Inventory} = \frac{\text{Cost Of Goods Sold}}{\text{Inventory Turnover}} = \frac{\$720,000}{6} = \$120,000$$

$$(9) \quad \text{Current Liabilities} = \frac{\text{QuickAssets}}{2^*} = \frac{\$250,000}{2} = \$125,00$$

\*From Acid-Test Ratio

(10) Current Assets:

$$\text{Current Liabilities} \times 3^* = \$125,000 \times 3 = \$375,000$$

\*From Current Ratio

(11) Prepaid Expenses:

Current Assets - (Cash + Securities + Receivables +  
Inventory) =

$$\$375,000 - (\$20,000 + \$80,000 + \$150,000 + \$120,000) = \$5,000$$

$$(12) \quad \text{Total Assets} = \frac{\text{Sales}}{\text{AssetTurnover}} = \frac{\$1,200,000}{2} = \$600,00$$

$$(13) \quad \text{Intangible Assets} = \frac{\text{TotalAssets}}{20^*} = \frac{\$600,000}{20} = \$30,00$$

\*From Ratio Of Total Assets To Intangibles

(14) Fixed Assets (Net):

Total Assets - (Current Assets + Intangibles)

$$\$600,000 - (\$375,000 + \$30,000) = \$195,000$$

(15) Land, Buildings, and Equipment:

Let: A = land, buildings, and equipment  
D = accumulated depreciation  
N = net fixed assets

$$A-D = N A - [(A/3^*)] = \$195,000 \times 2/3A = \$195,000 A = \$292,500$$

\*From Ratio Of Depreciation To Cost

(16) Accumulated Depreciation:

$$\frac{\text{Land, Buildings and Equipment}}{3^*} = \frac{\$292,500}{3} = \$97,500$$

\*From Ratio Of Depreciation To Cost

$$(17) \text{ Accounts Payable} = \frac{\text{Account Receivable}}{1.5^*} = \frac{\$150,000}{1.5} = \$100,000$$

\*From Ratio Of Accounts Receivable To Accounts Payable

(18) Accrued Expenses Payable:

$$\text{Current Liabilities} - \text{Accounts Payable} = \$125,000 - \$100,000 = \$25,000$$

(19) Total Stockholders' Equity:

$$\text{Working Capital} \times 1.6^* = 1.6 \times (\$375,000 - \$125,000) = \$400,000$$

\*From Ratio Of Working Capital To Stockholders' Equity

(20) Total Liabilities:

$$\text{Total Assets} - \text{Stockholders' Equity} = \$600,000 - \$400,000 = \$200,000$$

(21) 5% Bonds Payable - Due 2010:

$$\text{Total Liabilities} - \text{Current Liabilities} = \$200,000 - \$125,000 = \$75,000$$

$$(22) \text{ Common Stock Shares} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Earnings Per Share}}$$

$$= \frac{\$120,000 - \$3,000}{\$5.20} = 22,500 \text{ share}$$

$$(23) \text{ Common Stock Shares} \times \text{Par Value} = 22,500 \times \$10 = \$225,000$$

$$(24) \text{ Preferred Stock} = \frac{\text{Preferred Dividends}}{\text{Dividend Rate}} = \frac{\$3,000}{.06} = \$50,000$$

$$(25) \text{ Preferred Stock Shares} = \frac{\text{Preferred Stock}}{\text{Par Value}} = \frac{\$50,000}{\$100} = 500 \text{ shares}$$



(26) Contributed Capital In Excess Of Par Value:

Common x % Premium	= \$225,000 x .10 = \$22,500
Preferred x % Premium	= \$ 50,000 x .10 <u>5,000</u>
	<u>\$27,500</u>

(27) Retained Earnings:

Stockholders' Equity - (Common + Preferred + Premium)  
 = \$400,000 - (\$225,00 + \$50,000 + \$27,500) = \$97,500

(28) Total Liabilities and Stockholders' Equity:

Total Assets = Total liabilities And Stockholders' Equity

Total Assets = \$600,000 (from 12)

(29) Interest Expense:

Bonds Payable x Interest Rate = \$75,000 x .05 = \$3,750

(30) Administrative Expenses:

Gross profit		\$480,000
Less net income		<u>120,000</u>
Total expenses		360,000
Less: Selling expenses	\$240,000	
Interest	<u>3,750</u>	
Administrative expenses		<u>243,750</u>
	<u>\$116,250</u>	

Proof statistics supplied:

1. Debt To Equity Ratio = \$200,00 to \$400,000 = 1 to 2

2. Times Interest Earned =

$$\frac{\text{Recurring Earnings Excluding Interest Expense, Tax Expense, Equity Earnings, And Minority Income}}{\text{Interest Expense Including Capitalized Interest}} = \frac{\$120,000 + \$3,750}{\$3,750} = 33 \text{ times per year}$$

b. 1. Rate Of Return On Stockholders' Equity:

Net Income Before	
<u>Nonrecurring Items</u>	= \$120,000 = 30%
Total Equity	\$400,000

2. Price-Earnings Ratio For Common Stock:

Market Value Per Share To Earnings Per Share  
 \$78.00 to \$5.20 = 15 to 1



3. Dividends Paid Per Share Of Common Stock:

Net income	\$120,000
Less dividends on preferred stock	<u>3,000</u>
Dividends on common stock	<u><u>\$117,000</u></u>

$$\frac{\text{Dividends On Common}}{\text{Shares of Common}} = \frac{\$117,000}{22,500} = \$5.20$$

4. Dividends Paid Per Share Of Preferred Stock:

$$\frac{\text{Dividends On Preferred}}{\text{Shares Of Preferred}} = \frac{\$3,000}{500 \text{ shares}} = \$6$$

5. Yield On Common Stock:

$$\frac{\text{Dividends Per Share}}{\text{Market Value}} = \frac{\$5.20}{\$78.00} = 6 \frac{2}{3}\%$$

PROBLEM 11-8

a. 1. Current Ratio:  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

<u>2003</u>	<u>2004</u>
$\frac{\$235,000}{\$132,500} = 1.77 \text{ to } 1$	$\frac{\$290,000}{\$145,000} = 2.00 \text{ to } 1$

2. Quick Ratio:  $\frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$

<u>2003</u>	<u>2004</u>
$\frac{\$185,000}{\$132,500} = 1.40 \text{ to } 1$	$\frac{\$210,000}{\$145,000} = 1.45 \text{ to } 1$

3. Inventory Turnover:  $\frac{\text{Cost Of Goods Sold}}{\text{Average Inventory}}$

$$\frac{\$1,902,500}{(\$50,000 + \$80,000) / 2} = 29 \text{ times per year}$$



4. Return on Assets:  $\frac{\text{Net Income Before Minority Share Of Earnings And Nonrecurring Items}}{\text{Average Total Assets}}$

2003

$\frac{\$120,000}{\$881,000} = 13.62\%$  (Average Assets Not Available)

2004

$\frac{\$151,000}{\$881,000 + \$970,000/2} = 16.37\%$

5. Percent Changes:

	Amounts (000s omitted)		
	<u>2004</u>	<u>2003</u>	<b>Percent</b>
Sales	\$3,000.0	\$2,700.0	$\frac{\$300.0}{\$2,700.0} = 11.11\%$
Cost of goods sold	\$1,902.5	\$1,720.0	$\frac{\$182.5}{\$1,720.0} = 10.61\%$
Gross profit	\$1,097.5	\$980.0	$\frac{\$117.5}{\$980.0} = 11.99\%$
Net income after taxes	\$151.5	\$120.0	$\frac{\$31.5}{\$120.0} = 26.25\%$

b. Other financial reports and financial analyses which might be helpful to the commercial loan officer of Bell National Bank include:

- Statement of cash flows would highlight the amount of cash flows from operations, investing, and financing activities.
- Projected financial statements for 2005. In addition, a review of Warford's comprehensive budgets might be useful. These items would present management's estimates of operations for the coming year, as well as investing, and financing activities.
- A closer examination of Warford liquidity by calculating some additional ratios such as days' sales in receivables, accounts receivable turnover, and days' sales in inventory.

- An examination as to the extent that leverage is being used by Warford.

- c. Warford Corporation should be able to finance the plant expansion from internally generated funds as shown in the calculations presented below.

	(000's omitted)		
	<u>2004</u>	<u>2005</u>	<u>2006</u>
Sales	\$3,000.0	\$3,333.3	\$3,703.6
Cost of goods sold	<u>1,902.5</u>	<u>2,104.3</u>	<u>2,327.6</u>
Gross profit	\$1,097.5	\$1,229.0	\$1,376.0
Operating expenses	<u>845.0</u>	<u>915.4</u>	<u>991.7</u>
Income before taxes	\$ 252.5	\$ 313.6	\$ 384.3
Income taxes (40%)	<u>101.0</u>	<u>125.4</u>	<u>153.7</u>
Net income	<u>\$ 151.5</u>	<u>\$ 188.2</u>	<u>\$ 230.6</u>
Add:			
Depreciation		102.5	102.5
Deduct:			
Dividends		(75.0)	(75.0)
Note interest and repayments		<u>(7.0)</u>	<u>(60.0)</u>
Funds available for plant expansion		\$208.7	\$198.1
Plant expansion		<u>(150.0)</u>	<u>(150.0)</u>
Excess funds		<u>\$ 58.7</u>	<u>\$ 48.1</u>

Assumptions:

- Sales increase at a rate of 11.1%.
- Cost of goods sold increases at a rate of 10.6%.
- Other operating expenses increase at the same rate experienced from 2003 to 2004, i.e., at 8.3%.
- Depreciation remains constant at \$102,500.
- Dividends remain at \$1.25 per share.
- Plant expansion is financed equally over the two years (\$150,000 each year).
- Loan extension is granted.

- d. Bell National Bank should probably grant the extension of the loan, if it is really required, because the projected cash flows for 2005 and 2006 indicate that an adequate amount of cash will be generated from operations to finance the plant expansion and repay the loan. In actuality, there is some question whether Warford needs the extension because the excess funds generated from 2005 operations might cover the \$60,000 loan repayment. However, Warford may want the loan extension to provide a cushion because their cash balance is low. The financial ratios indicate that Warford has a solid financial structure. If the bank wanted some extra protection, it could require Warford to appropriate retained earnings for the amount of the loan and/or restrict cash dividends for the next two years to the 2004 amount of \$1.25 per share.

PROBLEM 11-9

a. 2 
$$\frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$

$$\frac{\$400 + \$1,700}{\$2,400} = \frac{\$2,100}{\$2,400} = .88$$

b. 3 
$$\frac{\text{Average Gross Receivables}}{\text{Net Sales} / 365} = \frac{(\$1,500 + \$1,700) / 2}{\$28,800 / 365} = 20.28 \text{ days}$$

c. 5 
$$\frac{\text{Recurring Earnings Before Interest and Tax}}{\text{Interest Expense}} = \frac{\$1,200 + \$400 + \$800}{\$28,800 / 365} = 6.00 \text{ times per year}$$

d. 1 
$$\frac{\text{Net Sales}}{\text{Average Total Assets}} = \frac{\$28,800}{(\$8,500 + \$9,500) / 2} = 3.2 \text{ times per year}$$

e. 4 
$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$15,120}{(\$2,120 + \$2,200) / 2} = 7.0 \text{ times per year}$$

f. 5 
$$\frac{\text{Operating Income}}{\text{Net Sales}} = \frac{\$1,200 + \$800 + \$400}{\$28,800} = 8.3\%$$

g. 5 Dividends Per Share  
Fully Diluted Earnings Per Share

= The data for this formula is not provided. Since there is no preferred stock, the following formula will also give the correct answer:

$$\frac{\text{Cash Dividends}}{\text{Net Income}} = \frac{\$400}{\$1,200} = 33.3\%$$

PROBLEM 11-10

a. 2 Current Ratio = Current Assets  
Current Liabilities

$$\frac{\$30,000 - \$2,000}{\$12,000 - \$2,000} = \frac{\$28,000}{\$10,000} = 2.8 \text{ to } 1.00$$

b. 1 Quick (Acid-Test) Ratio = Cash Equivalents + Marketable  
Securities + Net Receivables  
Current Liabilities

$$\frac{\$6,000 + \$6,600 - \$2,000}{\$12,000 - \$2,000} = \frac{\$10,600}{\$10,000} = 1.06 \text{ to } 1.00$$

c. 1 A two-for-one common stock split would result in doubling the number of common shares. It would result in the par value being reduced from \$1.00 to 50¢. It would not influence retained earnings or total stockholders' equity.

Each \$1,000 bond that was convertible into 300 shares of common stock would now be convertible into 600 shares of common stock.

d. 3  $\frac{\$36,000 - \$6,000}{20} = \frac{\$30,000}{20} = \$1,500 \text{ Per Year}$

$$\$13,500 \div \$1,500 = 9$$

e. 4 Book Value = Total Stockholders' Equity -  
Preferred Stock Equity  
Number Of Common Shares Outstanding

$$\frac{\$48,200 - 0}{20,000 \text{ Shares}} = \$2.41$$

f. 2 Sales \$90,000,000  
 Gross profit 20 percent  
 Cost of goods sold 80 percent  
 Cost of goods sold \$72,000,000  
 Divided by turnover 5  
 Average inventory 14,400,000

Ending inventory \$16,000,000  
 Beginning inventory ? (a)  
 Total ? (b)  
 Total inventory = Average inventory x 2 = \$14,400,000  
 x 2 = \$28,800,000

= (\$28,800,000) less ending inventory (\$16,000,000)  
 = Beginning inventory \$12,800,000

g. 3 Payout ratio of 80 percent (this is, 80 percent of net income is being paid out in dividends):

\$4,000,000 = .8X  
 X = \$5,000,000 (Net income)

Retained earnings, November 30, 2004	\$16,000	
Less net income for year	(5,000)	
Plus dividends		<u>4,000</u>
Retained earnings, December 1, 2003	<u>\$15,000</u>	

PROBLEM 11-11

a. Calcor Company  
 Pro Forma Income Statement  
 For the Year Ending November 30, 2005

Net sales (\$8,400,000 x 1.05 x 1.10)	<u>\$9,702,000</u>
Expenses:	
Cost of goods sold (\$6,300,000 x 1.05 x 1.04)	6,879,600
Selling expense (\$780,000 + \$420,000)	1,200,000
Administrative expense	900,000
Interest expense [\$140,000 + (\$300,000 x .10)]	<u>170,000</u>
Total expense	<u>9,149,600</u>
Income before income taxes	552,400
Income taxes	<u>220,960</u>
Net income	<u>\$ 331,440</u>

b. President Kuhn's entire goal is not achieved because the return on sales (8 percent) and the turnover of average assets (5 times per year) are not met. However, the return on average assets before interest and taxes, which is a

multiplication of the first two ratios, would be achieved. This is reflected by the calculation of the following ratios.

$$\begin{aligned}
 1. \quad \text{Return on Sales Before Interest and Taxes} &= \frac{\text{Income Before Interest and Taxes}}{\text{Sales}} \\
 &= \frac{\$552,400 + \$170,000}{\$9,702,000} \\
 &= \frac{\$722,400}{\$9,702,000} = 7.4\%
 \end{aligned}$$

The goal of an 8 percent return on sales before interest and taxes would not be achieved (7.4% < 8%).

$$\begin{aligned}
 2. \quad \text{Turnover of Average Assets} &= \frac{\text{Sales}}{\text{Average assets}} \\
 &= \frac{\$9,702,000}{\$2,100,000^* + \$300,000} \\
 &= 4.0425 \text{ times per year}
 \end{aligned}$$

$$\begin{aligned}
 * \quad 2004 \text{ Average Assets} &= \frac{2001 \text{ Sales}}{2001 \text{ Turnover of Average Assets}} \\
 &= \frac{\$8,400,000}{4} \\
 &= \$2,100,000
 \end{aligned}$$

The goal of a turnover of average assets of 5 times would not be achieved (4.0425 < 5).

$$3. \quad \text{Return On Average Assets} = \frac{\text{Income Before Interest And Taxes}}{\text{Average Assets}}$$

$$= \frac{\$552,400 + \$170,000}{\$2,100,000 + \$300,000}$$

$$= \frac{\$722,400}{\$2,400,000}$$

$$= 30.1\%$$

The goal of return on average assets before interest and taxes of 30 percent would be achieved.

- c. No. Return on average assets before interest and taxes (third goal) is equal to return on sales before interest and taxes (first goal) times turnover of average assets (second goal). If Calcor Company achieved the first two goals, the return on average assets before interest and taxes would be at least 40 percent (.08 x 5), which is greater than the goal of 30 percent.

#### PROBLEM 11-12

##### a. A Company Z Score

$$X_1 = \frac{\text{WorkingCapital}}{\text{TotalAssets}} \quad X_1 = \frac{\$90,000}{\$300,000} = 30.00$$

$$X_2 = \frac{\text{RetainedEarning}}{\text{TotalAssets}} \quad X_2 = \frac{\$80,000}{\$300,000} = 26.67$$

$$X_3 = \frac{\text{E.B.I.T.}}{\text{TotalAssets}} \quad X_3 = \frac{\$70,000}{\$300,000} = 23.33$$

$$X_4 = \frac{\text{MarketValueof Equity}}{\text{BookValueof TotalDebt}} \quad X_4 = \frac{\$180,000}{\$30,000} = 600.0$$

$$X_5 = \frac{\text{Sales}}{\text{TotalAssets}} \quad X_5 = \frac{\$430,000}{\$300,000} = 143.33$$

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .010X_5$$



$$\begin{aligned}
Z &= 0.012 \times 30.00 \\
&+ 0.014 \times 26.67 \\
&+ 0.033 \times 23.33 \\
&+ 0.006 \times 600.00 \\
&+ 0.010 \times 143.33
\end{aligned}$$

$$\begin{aligned}
Z &= 0.36 & Z &= \underline{6.53} \\
&+ 0.37 \\
&+ 0.77 \\
&+ 3.60 \\
&+ 1.43
\end{aligned}$$

### B Company Z Score

$$X_1 = \frac{\text{WorkingCapital}}{\text{TotalAssets}} \qquad X_1 = \frac{\$120,000}{\$280,000} = 42.86$$

$$X_2 = \frac{\text{RetainedEarning}}{\text{TotalAssets}} \qquad X_2 = \frac{\$90,000}{\$280,000} = 32.14$$

$$X_3 = \frac{\text{E.B.I.T.}}{\text{TotalAssets}} \qquad X_3 = \frac{\$60,000}{\$280,000} = 21.43$$

$$X_4 = \frac{\text{MarketValueof Equity}}{\text{BookValueof TotalDebt}} \qquad X_4 = \frac{\$168,750}{\$50,000} = 337.50$$

$$X_5 = \frac{\text{Sales}}{\text{TotalAssets}} \qquad X_5 = \frac{\$400,000}{\$280,000} = 142.86$$

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .010X_5$$

$$\begin{aligned}
Z &= 0.012 \times 42.86 \\
&+ 0.014 \times 32.14 \\
&+ 0.033 \times 21.43 \\
&+ 0.006 \times 337.50 \\
&+ 0.010 \times 142.86
\end{aligned}$$

$$\begin{aligned}
Z &= 0.51 & Z &= \underline{5.13} \\
&+ 0.45 \\
&+ 0.71 \\
&+ 2.03 \\
&+ 1.43
\end{aligned}$$

### C Company Z Score

$$X_1 = \frac{\text{WorkingCapital}}{\text{TotalAssets}}$$

$$X_1 = \frac{\$150,000}{\$250,000} = 60.00$$

$$X_2 = \frac{\text{RetainedEarning}}{\text{TotalAssets}}$$

$$X_2 = \frac{\$60,000}{\$250,000} = 24.00$$

$$X_3 = \frac{\text{E.B.I.T.}}{\text{TotalAssets}}$$

$$X_3 = \frac{\$50,000}{\$250,000} = 20.00$$

$$X_4 = \frac{\text{MarketValueof Equity}}{\text{BookValueof TotalDebt}}$$

$$X_4 = \frac{\$148,500}{\$80,000} = 185.63$$

$$X_5 = \frac{\text{Sales}}{\text{TotalAssets}}$$

$$X_5 = \frac{\$200,000}{\$250,000} = 80.00$$

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .010X_5$$

$$\begin{aligned}
Z &= 0.012 \times 60.00 \\
&+ 0.014 \times 24.00 \\
&+ 0.033 \times 20.00 \\
&+ 0.006 \times 185.63 \\
&+ 0.010 \times 80.00
\end{aligned}$$

$$\begin{aligned}
Z &= 0.72 \\
&+ 0.34 \\
&+ 0.66 \\
&+ 1.11 \\
&+ 0.80
\end{aligned}$$

$$Z = \underline{3.63}$$

b. All of these companies appear to have good financial condition. The company with the lowest score is Company C; therefore, Company C is most likely to experience financial failure.

PROBLEM 11-13

$$a. \quad X_1 = \frac{\text{WorkingCapital}}{\text{TotalAssets}}$$

$$X_1 = \frac{\$152,800}{\$494,500} = 30.90$$

$$X_2 = \frac{\text{RetainedEarning}}{\text{TotalAssets}}$$

$$X_2 = \frac{\$248,000}{\$494,500} = 50.15$$

$$X_3 = \frac{\text{E.B.I.T.}}{\text{TotalAssets}}$$

$$X_3 = \frac{\$84,000}{\$494,500} = 16.99$$

$$X_4 = \frac{\text{MarketValueof Equity}}{\text{BookValueof TotalDebt}}$$

$$X_4 = \frac{\$690,000}{\$200,500} = 344.14$$

$$X_5 = \frac{\text{Sales}}{\text{TotalAssets}}$$

$$X_5 = \frac{\$860,000}{\$494,500} = 173.91$$

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .010X_5$$

$$\begin{aligned}
Z &= 0.012 \times 30.90 \\
&+ 0.014 \times 50.15 \\
&+ 0.033 \times 16.99 \\
&+ 0.006 \times 344.14 \\
&+ 0.010 \times 173.91
\end{aligned}$$

$$\begin{aligned}
Z &= 0.37 \\
&+ 0.70 \\
&+ 0.56 \\
&+ 2.06 \\
&+ 1.74
\end{aligned}$$

$$Z = \underline{5.43}$$

- b. No. In a study using 1970-1973, a Z score of 2.675 was established as a practical cutoff point. The Z score for General Company is substantially above 2.675.

PROBLEM 11-14

2004 Net Income As Reported	\$90,200,000	
Net Change In Inventory Reserve:		
2004	\$50,000,000	
2003	<u>46,000,000</u>	
(a)	<u>\$ 4,000,000</u>	
(b) Effective Federal Tax Rate		37.9%
(c) Change In Taxes (a x b)	<u>\$ 1,516,000</u>	
(d) Net Change In Income (a-c)		<u>2,484,000</u>
2004 Approximate Income If Inventory Had Been Valued At Approximate Current Cost		<u>\$92,684,000</u>

PROBLEM 11-15

2003 Net Income As Reported	\$45,000,000	
Net Change In Inventory Reserve:		
2003	\$20,000,000	
2002	<u>28,000,000</u>	
(a)	<u>(\$8,000,000)</u>	
(b) Effective Federal Tax Rate		23.7%
(c) Change In Taxes (axb)	<u>1,896,000)</u>	
(d) Net Change In Income (a-c)		<u>(6,104,000)</u>
2003 Approximate Income If Inventory Had Been Valued At Approximate Current Cost		<u>\$38,896,000</u>

PROBLEM 11-16

The vertical axis does not start at zero.

## CASES

### CASE 11-1 WHAT POSITION?

(This case provides an opportunity to examine the impact of the LIFO reserve and consider the likelihood of bankruptcy.)

a. LIFO inventory liquidations increased consolidated net income by approximately \$89,000 (\$.04 per share) in 1995 and \$75,000 (\$.03 per share) in 1994.

b. LIFO Reserve:

August 26, 1995	\$18,157,000
August 27, 1994	<u>\$17,576,000</u>
Increased reduction in inventory (Increased cost of merchandise sold reduces income)	\$ 581,000

Estimate the tax rate to determine the influence to net income:

Provision for income taxes	<u>\$2,715,000</u> = 37.73%
Income before income taxes	\$7,195,000

$$(1-37.73\%) \times \$581,000 = \$ 361,789$$

With FIFO, the reported net income would have been  
(\$4,480,000 + \$361,789) = \$4,841,789

c. 1. Days' Sales In Inventory =  $\frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365}$

$$\frac{\$44,064,000}{\$418,128,000/365} = 38.47 \text{ days}$$

2. Working Capital = Current Assets - Current Liabilities

$$\$63,635,000 - \$57,549,000 = \$6,086,000$$

3. Current Ratio =  $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

$$\frac{\$63,635,000}{\$57,549,000} = 1.11$$

$$4. \text{ Acid-Test Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$

$$\frac{\$7,402,000 + \$6,587,000}{\$57,549,000} = .24$$

$$5. \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\frac{\$154,001,000 - \$40,731,000}{\$154,001,000} = 73.55\%$$

d. Addition to inventory \$18,157,000

Addition to deferred taxes (liability)  
 $37.73\% \times \$18,157,000 = \$6,850,636$

Addition to retained earnings  
 $(\$18,157,000 - \$6,850,636) \$11,306,364$

Increased Net Income (Eliminate LIFO reserve):

Net income reported \$4,480,000

Increase in reserve (\$581,000)

Tax rate (37.73%)

Net increase to income

$$(\$581,000 \times (1 - 37.73)) = \frac{361,789}{\underline{\underline{\$4,841,789}}}$$

$$1. \text{ Days' Sales In Inventory} = \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}/365}$$

$$\frac{\$44,064,000 + \$18,157,000}{(\$418,128,000 - \$581,000)/365} = 54.39 \text{ days}$$

$$2. \text{ Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$(\$63,635,000 + \$18,157,000) - (\$57,549,000 + \$6,850,636)$$

$$= \$17,392,364$$

$$3. \text{ Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= \frac{(\$63,635,000 + \$18,157,000)}{(\$57,549,000 + \$6,850,636)} = 1.27$$

$$4. \text{ Acid-Test Ratio} = \frac{\text{Cash Equivalents} + \text{Marketable Securities} + \text{Net Receivables}}{\text{Current Liabilities}}$$

$$= \frac{(\$7402,000 + \$6,587,000)}{(\$57,549,000 + \$6,850,636)} = .22$$

$$5. \text{ Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\frac{\$57,549,000 + \$48,399,000 + \$5,276,000 + \$2,046,000 + \$6,850,636}{\$154,001,000 + \$18,157,000} = 69.77\%$$

e.	in (c)	Ratios in (d)	Ratios
Days' Sales in Inventory		38.47 Days	54.39 Days
Working Capital		\$6,086,000	\$17,392,364
Current Ratio		1.11	1.27
Acid-Test Ratio		.24	.22
Debt Ratio	73.55%		69.77%

Material increase to days' sales in inventory, working capital, and the current ratio. Acid-test ratio decreased slightly. The debt ratio decreased moderately.

$$f. \ 1. \text{ Cash Flow/Total Debt} = \frac{\$19,829,000}{\$154,001,000 - \$40,731,000} = 17.51\%$$

$$2. \text{ Net Income/Total Assets} = \frac{\$4,480,000}{\$154,001,000} = 2.91\%$$

$$3. \text{ Debt Ratio (See part (c))} \quad 73.55\%$$

This company is apparently not in any immediate danger of financial failure. On the other hand, any major disruption in profits could be a problem.

g. Z score for 1995

Z = .012 (Working Capital/Total Assets)  
+ .014 (Retained Earnings [balance sheet]/Total Assets)  
+ .033 (Earnings Before Interest and Taxes/Total Assets)  
+ .006 (Market Value of Equity/Book Value of Total Debt)  
+ .010 (Sales/Total Assets)

Z = .012 (\$6,086,000/\$154,001,000)  
+ .014 (\$35,664,000/\$154,001,000)  
+ .033 [(\$7,195,000 + \$4,469,000)/\$154,001,000]  
+ .006 [(\$16.25 × 2,193,352)/(\$154,001,000-\$40,731,000)]  
+ .010 (\$559,244,000/\$154,001,000)

Z = .012 (3.95)  
+ .014 (23.16)  
+ .033 (7.57)  
+ .006 (31.47)  
+ .010 (363.14)

Z = .05 + .32 + .25 + .01 + 3.63

Z = 4.26

Comment The 4.26 Z score is somewhat better than the 2.675 guideline related in the book. If this is a reasonable comparison, then there is no immediate danger of financial failure.

#### CASE 11-2 ACCOUNTING HOCUS-POCUS

(This case represents an opportunity to review the comments of Chairman, Arthur Levitt, Securities and Exchange Commission.)

a. "Big Bath"

With a "Big Bath" substantial charges are recognized, this helps "clean up" the balance sheet.

The stock market tends to look beyond a one-time loss and focus on future earnings.

b. In an acquisition if there is a large write off of "in-process" research and development this amounts to a one time charge. This removes the future earnings drag.

c. If an unrealistic amount is provided in "allowance for doubtful accounts" in good times it can then be used in bad profit years to cover up expenses.



- d. A company can account for immaterial items without regard to generally accepted accounting standards. Thus the company could use "materiality" to improperly account for items.

CASE 11-3 TURN A CHEEK

(This case provides an opportunity to review the Nike case that involves the first and second amendment.)

- a. Each student will write a different position paper on why the Nike reply should be viewed under the first amendment.
- b. Each student will write a different position paper on why the Nike reply should be viewed under the fifth amendment.

Note: In June 2003 the United States Supreme Court declined to hear the case on procedural grounds. The United States Supreme Court might hear the case after the California State Court decision is final.

A good article on the Supreme Court decision to decline to hear the case is "Nike and the Free-Speech Knot," by Eugene Volokh, *The Wall Street Journal*, page A16, June 30, 2003.

## THOMSON ANALYTICS™

1. This Thomson Analytics exercise uses the Boeing Company to address the different profitability ratios. The answers presented here are for December 31, 2001. The answers for subsequent years may be different as to the specific ratios and will be different as to the absolute amounts.

### a. Thomson Ratios

Profitability	12-31-01 ratio
Return on assets	7.76
Return on invested capital	16.43
Cash flow to sales	8.55
Cost of goods sold to sales	80.81
Gross profit margin	16.19
Operating profit margin	8.11
Pretax margin	5.96
Net margin	4.86

### b. Worldscope Ratios

Profitability	12-31-01 ratio
Return on total equity	25.65
Reinvestment rate	20.37
Return on assets	7.76
Return on invested capital	16.43
Cash earnings return on equity	45.15
Cash flow to sales	8.55
Cost of goods sold to sales	80.81
Gross profit margin	16.19
Operating profit margin	8.11
Pretax margin	5.96
Net margin	4.86

### c. SEC Database Ratios

Profitability	12-31-01 ratio
Pretax income/net sales	.06
Pretax income/total assets	.07
Pretax income/invested capital	.16
Pretax income/common equity	.33
Net income/net sales	.05
Net income/total assets	.06
Net income/common equity	.26
Net income/invested capital	.13

d. Common ratios found in all three sources:

Net margin	
Thomson	4.86
Worldscope	4.86
SEC	5.00

Return on assets	
Thomson	7.76
Worldscope	7.76
SEC	6.00

Return on invested capital	
Thomson	16.43
Worldscope	16.43
SEC	13.00

- e. 1. A substantial variety of ratios were related to profitability.
2. Only three profitability ratios were common between the three sources.
3. Of the three common ratios two had the same answer. The difference in answers for profitability usually come from the handling of the following:
- (a) Unusual or infrequent item disclosed separately (loss).
  - (b) Equity in earnings of nonconsolidated subsidiaries (loss).
  - (c) Discontinued operations.
  - (d) Extraordinary gain.
  - (e) Cumulative effect of change in accounting principle (loss).
  - (f) Minority share of earnings (loss).

2. This Thomson Analytics exercise uses the Boeing Company to address the different debt ratios. The answers presented here are for December 31, 2001. The answers for subsequent years may be different as to the specific ratios and will be different as to the absolute amounts.

a. Thomson Ratios

Debt	12-31-01
Total debt pct common equity	113.30
LT debt pct common equity	100.38
LT debt pct total capital	50.09
Equity pct total capital	49.91
Total debt pct total assets	25.37
Common equity pct total assets	22.39
Total capital pct total assets	44.87

b. Worldscope Ratios

Debt	12-31-01
Total debt pct common equity	113.30
LT debt pct common equity	100.38
Minority interest pct total capital	.00
LT debt pct total capital	50.09
Equity pct total capital	49.91
Preferred stock pct total capital	.00
Total debt pct total assets	25.37
Common equity pct total assets	22.39
Total capital pct total assets	44.87
Fixed charge coverage ratio	6.93

c. SEC Database Ratio

Debt	12-31-01
Total liabilities/total assets	.85
Total liabilities/invested capital	2.20
Total liabilities/common equity	5.80
Times interest earned	5.36
Current debt/equity	.00
Long-term debt/equity	1.64
Total assets/equity	6.80

d. Common ratios found in all three sources:

Total debt pct common equity	
Thomson ratios	113.30
Worldscope ratios	113.30
SEC database ratio	5.80

Total debt pct total assets	
Thomson ratios	25.37
Worldscope ratios	25.37
SEC database ratios	.85

- e. 1. There was a considerable variety of ratios.
2. There were two common debt ratios.
3. For the two common debt ratios two sources agreed on the answers.

For debt ratios the differences in computation often relate to how short-term liabilities, minority interest, reserve accounts, and redeemable preferred stock were handled.

**Special Industries: Banks, Utilities, Oil and Gas,  
Transportation, Insurance, Real Estate Companies**

**TO THE NET**

1. INDEPENDENT BANK CORP (MS)

a. SIC 6022 state commercial banks

b. Data for non-performing assets held by the bank at the dates indicated.

	(Dollars in thousands)		
	December 31		
	<u>2001</u>	<u>2000</u>	<u>1999</u>
Loans past due 90 days or more	\$ 508	\$ 204	\$ 316
but still accruing			
Loans accounted for on a non-accrual basis	\$2,507	\$4,210	\$3,338
Other real estate owned	--	--	--
Total non-performing loans	\$3,015	\$4,414	\$3,654
Restructured loans	\$ 503	\$ 657	\$ 694
Non-performing loans as a percent of gross loans	.23%	.37%	.35%
Non-performing assets as a percent of total assets	.14%	.23%	.23%

c. Comments on trends in (b)

Substantial improvement in all areas except for loans past due 90 days or more but still accruing.

The loans past due 90 days or more but still accruing increased materially. This would be a negative trend.

2. MAIN PUBLIC SERVICE COMPANY

a. SIC 4911 Electric Services

b. Data for year ended December 31, 2001, 2000, and 1999.

	2001	2000	1999
1. Allowance for equity			
funds used during construction	\$85,963	\$35,809	\$51,248
2. Allowance for borrowed funds used during construction	\$31,794	\$18,366	\$32,218
3. Net income available for common stock	\$5,236,527	\$5,300,632	\$4,005,556

- c. Accounting policy as to where allowance for equity funds and allowance for borrowed funds is changed.
- d. Does allowance for equity funds and borrowed funds used during construction appear to be material?

No

In part (b) these items in total are immaterial in relation to net income available for common stock.

### 3. CABOT OIL & GAS CORPRATION

- a. SIC 1311 Crude Petroleum & Natural Gas
- b. Estimated proved reserves for the period indicated.



	Natural Gas (Mmcf)	Oil & Liquids (Mbbbl)	Total <sup>(1)</sup> (Mmcfe)
December 31, 2000	959,222	9,91	1,018,703
Revision of prior estimates	<44,266>	4	(42,737)
Extensions, Discoveries and other additions	99,911 (69,162) 91,290	4	113,456 (81,139)
Production	(991)	7	)
Purchases of Reserves in place	<u>1,036,004</u>	(1,996)	146,819 <u>(993)</u>
Sales of Reserves in place		9,255	)
December 31, 2001		<u>        -</u> <u>        =</u> <u>        19,684</u>	<u>1,154,109</u>

c. Historical Reserves

Table for proved developed reserves

	Natural Gas (Mmcf)	Oil & Liquids (Mbbbl)	Total <sup>(1)</sup> (Mmcfe)
December 31, 1998	788,390	5,822	823,321
December 31, 1999	720,670	5,546	753,944
December 31, 2000	754,962	8,438	805,590
December 31, 2001	804,646	15,328	896,612

d. Trend in reserves

Estimated proved reserves

Natural gas and oil & gas increased materially

Historical reserves

Substantial increase in historical resources

(1) Includes natural gas and natural gas equivalents by using the ratio of 6 Mcf of natural gas to Bbl of crude oil, condensate or natural gas liquids.

## QUESTIONS

- 12- 1. Interest income, service charges, and earnings in investments are the main sources of revenue for banks.
- 12- 2. Loans are assets because they are an investment of the banks, money. They are like receivables; money is owed to the bank, not by it.
- 12- 3. Savings accounts are liabilities because they hold cash owed to customers.
- 12- 4. Loans/deposits is a type of debt coverage, since loans are a main amount to repay depositors.
- 12- 5. Banks report to the Comptroller of the Currency, the Federal Reserve, the Federal Deposit Insurance Corporation (FDIC), and to their shareholders, and they must publish their reports in newspapers for the general public.
- 12- 6. Bank holding companies own banks and other types of subsidiaries that may not be financially related. These holdings can affect the special bank ratios.
- 12- 7. Interest expense will usually be the biggest expense item for banks.
- 12- 8. Total deposits times capital is a measure of liabilities to equity, of creditors' to owners' funds.
- 12- 9. Interest margin to average assets, earnings per share, return on equity, and return on assets are all ratios that indicate a bank's profitability.
- 12-10. Earning assets are those that generate interest from which the firm earns its profits.
- 12-11. The loan loss coverage ratio measures the quality of the loans and the level of protection related to loan payment.
- 12-12. Deposits times capital is a type of debt to equity or leverage ratio.

- 12-13. A review of assets may indicate that the bank has a substantial investment in long-term bonds. Such an investment could reflect substantial risk if interest rates increase. Another example would be a bank holding long-term fixed rate mortgages. The value of these mortgages could decline substantially if interest rates increase.
- 12-14. This review may indicate that investments have a market value that is substantially above or below the book amount.
- 12-15. In general, foreign loans are perceived as being more risky than domestic loans.
- 12-16. It may indicate a significant change and/or significant losses charged.
- 12-17. In general, nonperforming assets are assets that the bank is not receiving income on or receiving inadequate income. The amount and trend of nonperforming assets should be observed closely. This can be an early indication of troubles to come for a bank.
- 12-18. A decreasing amount in savings deposits would indicate that the bank is losing one of its cheapest source of funds.
- 12-19. This footnote may reveal significant additional commitments and contingent liabilities.
- 12-20. Utilities have heavy investment in fixed assets, necessitating long-term debt. Further, they are able to use leverage favorably, since their profits are controlled and are reasonably stable, due to the control and to the nature of the product.
- 12-21. Demand for utilities is inelastic; there are no substitute services. There is virtually no competition.
- 12-22. Plant and equipment are listed first because the uniform accounting system recognized their importance in the operation. Current assets are a very small part of total assets.
- 12-23. Inventory ratios have little meaning for utilities, because they are unable to store their finished product.

- 12-24. Funded debt to operating property is a type of debt coverage ratio. It tells how funds are supplied for long-term investment.
- 12-25. Yes, the times interest earned ratio is meaningful for utilities, since they have such a heavy use of debt.
- 12-26. No. Long-term capitalization, the major source of funds, including long-term debt, is presented first. Current liabilities are quite unimportant.
- 12-27. Electric utilities that have substantial construction work in progress are usually viewed as being more risky investments than electric utilities that do not have substantial construction work in progress.

Most utility commissions allow no or only a small amount of construction work in progress in the rate base. Therefore the utility rates essentially do not reflect the construction work in progress.

It is possible that the utility commission will not allow all of this property and plant in the rate base. The utility commission may rule that part of the cost was due to inefficiency and disallow this cost. The utility commission may also disallow part of the cost on the grounds that the utility used bad judgment and provided for excess capacity.

For the costs that are allowed, the risk is that the utility commission will not allow a reasonable rate of return.

- 12-28. The account allowance for equity funds used during construction represents an assumed rate of return on equity funds used for construction. The account allowance for borrowed funds used during construction represents the cost of borrowed funds that are used for construction.
- 12-29. Each relates to accounting for exploration costs. Successful efforts capitalizes only those costs of successful projects. Full cost capitalizes the outlays for both successful and unsuccessful projects.
- 12-30. Regulation makes their accounting systems uniform, and their revenues are controlled by rate structure.

12-31. A variation of one of two costing methods is used by an oil or gas company to account for exploration and production costs. These methods are the successful-efforts method and the full-costing method. The selection has a significant influence on the financial statements.

The successful-efforts method places only exploration and production costs of successful wells on the balance sheet under property, plant, and equipment. Exploration and production costs of unsuccessful (or dry) wells are expensed when it is determined that there is a dry hole. With the full-costing method, exploration and production costs of all, the wells are placed on the balance sheet under property, plant, and equipment.

12-32. Major items on this schedule are typically revisions of previous estimates, improved recovery, discoveries and other additions, and production. This information can be significant in terms of the companies' reserves.

12-33. This is a true statement. One of the reasons is that large sums can be spent for exploration and development years in advance of revenue from the found reserves. The other reason is that there can be significant differences between when expenses are deducted on the financial statements and when they are deducted on the tax return.

12-34. A decreasing operating ratio means a lower proportion of expenses and more profits.

12-35. Operating revenue to operating property is a turnover ratio. Because of the heavy investment in fixed assets, this ratio will usually be less than 1 to 1 for a utility.

12-36. Fixed assets is the most important asset category.

12-37. Revenue is divided into categories by type or function of service, such as passenger, freight, mail, etc.

12-38. Differences in traffic volume and distance traveled will change revenues. The price level, type of service and effectiveness of asset use will change expenses for a transportation firm.

12-39. Higher revenue per passenger mile basically indicates higher rates on fares.

- 12-40. The passenger load factor indicates utilization of capacity. The greater the utilization, the lower the fixed charge per passenger and the higher the profit.
- 12-41. In this publication, data are compiled by composite carrier groups. It includes industry total dollars for income statement accounts, such as total revenue.
- 12-42. The annual reports filed with the state insurance departments are in accordance with Statutory Accounting Practices (SAP).
- 12-43. Annual reports that insurance companies issue to the public are in accordance with generally accepted accounting principles (GAAP).
- 12-44. Real estate investments are reported at cost less accumulated depreciation and an allowance for impairment in value. An insurance company with substantial real estate investments is risky because there is a great deal of subjectivity in establishing the allowance for impairment in value.
- 12-45. Under GAAP, these costs are deferred and charged to expense over the premium-paying period. Under SAP, these costs are charged to expense as incurred.
- 12-46. Intangibles are recognized as an asset under GAAP, while intangibles are not recognized as an asset under SAP.
- 12-47. For short-duration contracts, revenue is ordinarily recognized over the period of the contract in proportion to the amount of insurance protection provided. When the risk differs significantly from the contract period, revenue is recognized over the period of risk in proportion to the amount of insurance protection.
- 12-48. Insurance company, specific ratios are frequently based on SAP financial reporting to the states and not GAAP financial reporting that is used for the annual report and SEC reporting.
- 12-49. Insurance is a highly regulated industry that some perceive as having relatively low growth prospects. It is also an industry with substantial competition.

The accounting environment probably also contributes to the relatively low market price for insurance company stocks.

- 12-50. Conventional accounting recognizes depreciation but not the value of the property. This potentially presents a problem to investors in judging the value of the company. Some real estate companies have sold substantial portions of their property in order to realize value for their investors, while some have attempted to reflect value by disclosing current value in addition to the conventional accounting.



PROBLEMS

PROBLEM 12-1

			<u>2004</u>	<u>2003</u>
a.	Total Deposits Times Capital	= $\frac{\text{Average Total Deposits}}{\text{Average Total Capital}}$	$\frac{\$24,000,000}{\$1,850,000}$ = 12.97	$\frac{\$20,000,000}{\$1,600,000}$ = 12.50
b.	Loans To Total Deposits	= $\frac{\text{Average Loans}}{\text{Average Total Deposits}}$	$\frac{\$16,000,000}{\$24,000,000}$ = 66.7%	$\frac{\$13,200,000}{\$20,000,000}$ = 66.0%
c.	Capital Funds to Total Assets	= $\frac{\text{Capital Funds}}{\text{Average Total Assets}}$	$\frac{\$1,850,000}{\$26,000,000}$ = 7.12%	$\frac{\$1,600,000}{\$22,000,000}$ = 7.27%
d.	Interest Margin to Average Total Assets	= $\frac{\text{Interest Margin}}{\text{Average Total Assets}}$	$\frac{\$1,750,000 - \$1,615,000}{\$26,000,000}$ = .52%	$\frac{\$1,650,000 - \$1,512,250}{\$22,000,000}$ = .63%

e. McEttrick National Bank has experienced a faster rise in deposits than in capital. This has caused the deposits to capital to rise. Loans have risen faster than deposits, so that loans to total deposits has risen. Capital to total assets has dropped, probably due to a faster rise in deposits. The interest margin to average total assets has dropped, which indicates a drop in profitability.

PROBLEM 12-2

a. 1. Earning Assets to Total Assets =  $\frac{\text{Average Earning Assets}}{\text{Average Total Assets}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$50,000,000}{\$58,823,529}$	$\frac{\$45,000,000}{\$54,216,867}$	$\frac{\$43,000,000}{\$52,000,000}$
= 85.00%	= 83.00%	= 82.69%

2. Interest Margin to Average =  $\frac{\text{Interest Margin}}{\text{Average Earning Assets}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$ 2,550,000}{\$50,000,000}$	$\frac{\$ 2,200,000}{\$45,000,000}$	$\frac{\$ 2,020,000}{\$43,000,000}$
= 5.10%	= 4.89%	= 4.70%

3. Loan Loss Coverage Ratio =  $\frac{\text{Pretax Income (Before Security Transactions) + Provision For Loan Losses}}{\text{Net Charge-Offs}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{(\$562,000 + \$190,000)}{\$180,000}$	$\frac{(\$480,500 + \$160,000)}{\$162,000}$	$\frac{(\$440,000 + \$142,000)}{\$160,000}$
= 4.17 times per year	= 3.95 times per year	= 3.64 times per year

4. Equity to Total Assets =  $\frac{\text{Average Equity}}{\text{Average Total Assets}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$ 4,117,600}{\$58,823,529}$	$\frac{\$ 3,524,000}{\$54,216,867}$	$\frac{\$ 3,120,000}{\$52,000,000}$
= 7.00%	= 6.50%	= 6.00%

5. Deposits Times Capital =  $\frac{\text{Average Deposits}}{\text{Average Stockholders' Equity}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$52,500,000}{\$ 4,117,600}$	$\frac{\$42,500,000}{\$ 3,524,000}$	$\frac{\$37,857,000}{\$ 3,120,000}$
= 12.75 times per year	= 12.06 times per year	= 12.13 times per year

$$6. \text{ Loans to Deposits} = \frac{\text{Average Net Loans}}{\text{Average Deposits}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$32,500,000</u>	<u>\$26,000,000</u>	<u>\$22,500,000</u>
\$52,500,000	\$42,500,000	\$37,857,000
= 61.90%	= 61.18%	= 59.43%

- b. Earning assets to total assets has increased. This indicates that management has improved in putting bank assets to work. Interest margin to average earning assets have increased. This indicates improved profitability.

The loan loss coverage ratio has increased, indicating an improved level of protection of loans.

Equity to total assets increased, indicating an improved cushion against the risk of using debt and leverage.

Deposits times capital increased, indicating a prospect of higher return to shareholders.

Loans to deposits increased, indicating increased risk.

### PROBLEM 12-3

a.

	<u>2004</u>	<u>2003</u>
Operating Ratio:		
Operating expense	<u>\$20,340,000</u>	<u>\$18,125,000</u>
Operating revenue	\$22,830,000	\$20,500,000
	= 89.1%	= 88.4%

Operating expenses as a percent of revenue have increased.

b. Times Interest Earned =  $\frac{\text{Operating Income}}{\text{Interest Expense}}$

	<u>2004</u>	<u>2003</u>
Operating income (after tax)	\$2,490,000	\$2,375,000
Income tax	<u>3,200,000</u>	<u>3,000,000</u>
Operating income (before tax)	<u>\$5,690,000</u>	<u>\$5,375,000</u>
Interest expense	\$1,200,000	\$1,000,000
Times interest earned	4.74	5.38

This utility has experienced a heavy increase in interest expense, causing a decline in the times interest earned.

c. Vertical common-size analysis:

	<u>2004</u>		<u>2003</u>	
Residential	\$11,800,000	51.7%	\$10,000,000	48.8%
Commercial	10,430,000	45.7%	10,000,000	48.8%
Other	<u>600,000</u>	<u>2.6%</u>	<u>500,000</u>	<u>2.4%</u>
Total	\$22,830,000	100.0%	\$20,500,000	100.0%

There has been a rise in residential usage, and this causes a proportionate increase in revenue from this source. Commercial use has not fallen.

PROBLEM 12-4

a. 1. Operating Ratio =  $\frac{\text{Operating Expenses}}{\text{Operating Revenues}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$850,600</u>	<u>\$820,200</u>	<u>\$780,000</u>
\$1,080,500	\$1,037,200	\$974,000
= 78.72%	= 79.08%	= 80.08%

2. Funded Debt to Operating Property =  $\frac{\text{Funded Debt (Long - Term)}}{\text{Operating Property}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$1,500,000</u>	<u>\$1,480,000</u>	<u>\$1,470,000</u>
\$3,900,000	\$3,750,000	\$3,600,000
= 38.46%	= 39.47%	= 40.83%

3. Percent Earned on Operating Property =  $\frac{\text{Net Income}}{\text{Operating Property}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$280,000</u>	<u>\$260,000</u>	<u>\$230,000</u>
\$3,900,000	\$3,750,000	\$3,600,000
= 7.18%	= 6.93%	= 6.39%

4. Operating Revenue to Operating Property =  $\frac{\text{Operating Revenue}}{\text{Operating Property}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$1,080,500}{\$3,900,000}$	$\frac{\$1,037,200}{\$3,750,000}$	$\frac{\$974,000}{\$3,600,000}$
= 27.71%	= 27.66%	= 27.06%

- b. The operating ratio decreased, indicating improved efficiency. Funded debt to operating property decreased, indicating less risk because a lower percentage of funds were supplied by funded debt.

Percent earned to operating property increased, indicating improved profitability.

Operating revenue to operating property increased, indicating improved profitability.

- c. Cash flow per share has increased much more than earnings per share. This would be considered to be positive.

PROBLEM 12-5

- a. Operating Ratio =  $\frac{\text{Operating Expense}}{\text{Operating Revenue}}$

<u>2004</u>	<u>2003</u>
$\frac{\$625,000}{\$624,000} = 100.2\%$	$\frac{\$617,000}{\$618,000} = 99.8\%$

This firm is having profit problems. Expenses have increased faster than revenues.

- b. Long-Term Debt to Operating Property =  $\frac{\text{Long-Term Debt}}{\text{Operating Property}}$

<u>2004</u>	<u>2003</u>
$\frac{\$280,000}{\$365,000} = 76.7\%$	$\frac{\$270,000}{\$360,000} = 75.0\%$

This firm is using more debt in absolute terms and in relation to operating property.

$$c. \text{ Operating Revenue to Operating Property} = \frac{\text{Operating Revenue}}{\text{Operating Property}}$$

<u>2004</u>	<u>2003</u>
$\frac{\$624,000}{\$365,000} = 1.71 \text{ times per year}$	$\frac{\$618,000}{\$360,000} = 1.72 \text{ times per year}$

The turnover has remained relatively constant.

$$d. \text{ Revenue per Passenger Mile:}$$

<u>2004</u>	<u>2003</u>
$\frac{\$624,000}{\$7,340,000} = 8.5\text{¢/Mile}$	$\frac{\$618,000}{\$7,600,000} = 8.1\text{¢/Mile}$

The firm is generating more revenue per passenger mile, but is suffering from a serious decline in passenger miles.

PROBLEM 12-6

$$a. 1. \text{ Operating Ratio} = \frac{\text{Operating Expenses}}{\text{Operating Revenues}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$1,550,000}{\$1,840,000}$	$\frac{\$1,520,000}{\$1,670,400}$	$\frac{\$1,480,000}{\$1,620,700}$
= 84.24%	= 91.00%	= 91.32%

$$2. \text{ Long-Term Debt To Operating Property} = \frac{\text{Long-Term Debt}}{\text{Operating Property}}$$

<u>2004</u>	<u>2003</u>	<u>2002</u>
$\frac{\$910,000}{\$995,000}$	$\frac{\$900,500}{\$990,000}$	$\frac{\$895,000}{\$985,000}$
= 91.46%	= 90.96%	= 90.86%

3. Operating Revenue to Operating Property =  $\frac{\text{Operating Revenue}}{\text{Operating Property}}$

<u>2004</u>	<u>2003</u>	<u>2002</u>
<u>\$1,840,000</u>	<u>\$1,670,400</u>	<u>\$1,620,700</u>
\$ 995,000	\$ 990,000	\$ 985,000
= 184.92%	= 168.73%	= 164.54%

b. The operating ratio decreased significantly, indicating improved profitability.

Long-term debt to operating property increased slightly, indicating a slight increase in risk.

Operating revenue to operating property increased moderately, indicating improved profitability.

c. The passenger load factor increased materially, indicating improved profitability.

PROBLEM 12-7

- a.  $\frac{2}{1}$       c.  $\frac{1}{5}$       e.  $\frac{3}{5}$
- b.  $\frac{2}{1}$       d.  $\frac{1}{5}$

## CASES

### CASE 12-1 ALLOWANCE FOR FUNDS

Primary emphasis on "allowance for equity funds used during construction" and "allowance for borrowing funds used during construction". Also, several ratios are included. (The utility industry typically capitalizes interest on construction funds and a rate of return on equity funds used for construction. This can result in reported earnings being substantially different than cash flow from operations. This case also covers construction work in progress and financial ratios that relate to utilities.)

- a. The account, allowance for equity funds used during construction, represents an assumed rate of return on equity funds used for construction. The costs that have been added into the cost base have also been added to income, through the account allowance for equity funds.
- b. The income statement account, allowance for borrowed funds used during construction, charges to the balance sheet account, construction in progress, the interest on borrowed funds use for construction in progress.  
(Note: In the case, "allowance for borrowed funds used during construction" is called "allowance for borrowing funds used during construction".)
- c. Capitalizing interest on borrowed funds prevents this expense from reducing income during the current period. If this interest had not been capitalized, then current income would have been lower.
- d. Yes. When interest on borrowed funds is capitalized, then the interest does not reduce income this year, but the interest payments will require funds.
- e. Capitalizing allowance for equity funds used during construction increases income during the period of capitalization.
- f. Yes. Capitalizing allowance for equity funds used during construction increases income during the period of capitalization, but no funds are provided during this period.
- g. Both the capitalization of interest on borrowed funds and the capitalization allowance for equity funds result in the reported income being higher than the cash flow.



h.

$$1. \text{ Operating Ratio} = \frac{\text{Operating Expenses}}{\text{Operating Revenues}}$$

	<u>1994</u>	<u>1993</u>
	(In Thousands)	
Operating Expenses	<u>\$1,946,533</u>	<u>\$1,931,035</u>
Operating Revenue	<u>\$2,243,029</u>	<u>\$2,233,978</u>
	= 86.78%	= 86.44%

The operating ratio increased, indicating an increase in operating expenses in relation to operating revenues.

$$2. \text{ Funded Debt to Operating Property} = \frac{\text{Funded Debt}}{\text{Operating Property}}$$

	<u>1994</u>	<u>1993</u>
	(In Thousands)	
Funded debt (Long-term debt)	<u>\$1,520,488</u>	<u>\$1,511,589</u>
Operating Property	<u>\$3,716,721</u>	<u>\$3,482,501</u>
	= 40.91%	= 43.41%

The funded debt to operating property decreased, indicating a decrease in funded debt in relation to operating property.

$$3. \text{ Percent Earned On Operating Property} = \frac{\text{Net Income}}{\text{Operating Property}}$$

	1994	<u>1993</u>
	(In Thousands)	
Net Income	<u>\$199,426</u>	<u>\$190,223</u>
Operating Property	<u>\$3,716,721</u>	<u>\$3,482,501</u>
	= 5.37%	= 5.46%

There has been a slight decrease in the percent earned on operating property.



$$4. \text{ Operating Revenue To Operating Property} = \frac{\text{Operating Revenue}}{\text{Operating Property}}$$

	<u>1994</u>	<u>1993</u>
	(In Thousands)	
Operating Revenue	<u>\$2,243,029</u>	<u>\$2,233,978</u>
Operating Property	<u>\$3,716,721</u>	<u>\$3,482,501</u>
	= 60.35%	= 64.15%

There has been a decrease in operating revenue in relation to operating property.

$$5. \text{ Times Interest Earned} = \frac{\text{Recurring Earnings Before Interest Expense, Tax, Minority Income, and Equity Earnings}}{\text{Interest Expense, Including Capitalized Interest}}$$

	<u>1994</u>	<u>1993</u>
	(In Thousands)	
Operating Income	\$296,496	\$302,943
Plus: Income Taxes	<u>128,257</u>	<u>121,124</u>
(A)	\$424,753	\$424,067
Interest:		
Interest On Long-Term Debt	\$93,500	\$100,777
Other Interest	<u>11,298</u>	<u>9,809</u>
(B)	\$104,798	\$110,586
(A) / (B)	4.05	3.83 times
	times	per year
	per year	

Times interest earned improved moderately.

Note: Also, consider a cash flow times interest earned when reviewing a utility.

$$i. \frac{\text{Construction Working Progress}}{\text{Net Utility Plant}} = \frac{\text{(In Thousands)} \quad \$374,000}{\$3,716,721} = 10.06$$

There is some risk that not all of the construction work in progress will be allowed in the rate base. There is also a risk as to the rate of return that will be allowed.



CASE 12-2 RESULTS OF OPERATIONS FOR OIL AND GAS PRODUCING  
ACTIVITIES

(This case provides the opportunity to view results of operations for oil and gas producing activities using vertical and horizontal common-size analysis.)

a. Vertical Common-Size

	<u>Total</u>	<u>United States</u>	<u>Europe</u>	<u>Africa, Asia and other</u>
2001				
Sales and other operating revenues	70.9	30.6	90.6	100.0
Unaffiliated customers	<u>29.1</u>	<u>69.4</u>	<u>9.4</u>	<u>--</u>
Inter-company	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Total revenues				
Cost and expenses				
Production expenses, including related taxes	20.0	17.3	19.9	28.5
Exploration expenses, including dry holes and lease impairment	10.4	12.6	5.5	25.1
Other operating expenses	4.3	6.5	1.3	11.0
Depreciation, depletion and amortization	<u>25.7</u>	<u>29.8</u>	<u>23.7</u>	<u>22.8</u>
Total costs and expenses	<u>60.4</u>	<u>66.2</u>	<u>50.4</u>	<u>87.4</u>
Results of operations before income taxes	39.6	33.8	49.6	12.6
Provision for income taxes	<u>14.7</u>	<u>11.6</u>	<u>17.0</u>	<u>13.8</u>
Results of operations	<u>24.9</u>	<u>22.2</u>	<u>32.6</u>	<u>(1.1)</u>
Shares of equity investee's results of operations	.5	--	.6	1.1

b. Horizontal Common-Size

	<u>Total</u>	<u>United States</u>	<u>Europe</u>	<u>Africa, Asia and other</u>
2001				
Sales and other operating revenues	100.0	15.0	67.7	17.3
Unaffiliated customers	<u>100.0</u>	<u>82.9</u>	<u>17.1</u>	<u>--</u>
Inter-company	<u>100.0</u>	<u>34.8</u>	<u>53.0</u>	<u>12.3</u>
Total revenues				
Cost and expenses				

Production expenses, including related taxes	100.0	30.0	52.6	17.4
Exploration expenses, including dry holes and lease impairment	100.0	42.4	28.0	29.6
Other operating expenses	100.0	52.3	16.3	31.4
Depreciation, depletion and amortization	<u>100.0</u>	<u>40.3</u>	<u>48.8</u>	<u>10.8</u>
Total costs and expenses	<u>100.0</u>	<u>38.1</u>	<u>44.2</u>	<u>17.7</u>
Results of operations before income taxes	100.0	29.7	66.4	3.9
Provision for income taxes	<u>100.0</u>	<u>27.3</u>	<u>61.2</u>	<u>11.5</u>
Results of operations	<u>100.0</u>	<u>31.0</u>	<u>69.5</u>	<u>(.6)</u>
Shares of equity investee's results of operations	100.0	--	70.6	29.4

c. Vertical Common-Size

None of the segments resemble the total

Revenue in the United States is dominated by inter-company

Revenue in Europe and Africa, Asia and other is dominated by unaffiliated customers.

Africa, Asia, and other has high production expenses, including related taxes.

Africa, Asia, and other has high exploration expenses, including dry holes and lease impairment.

Africa, Asia, and other has high other operating expenses.

Results of operations before income taxes were high for Europe.

Results of operations were high for Europe.

Africa, Asia and other had a loss on results of operations.

#### Horizontal Common-Size

Unaffiliated customers were high for Europe.

Inter-company was dominated by the United States.

The majority of total revenues came from Europe.

Exploration expenses, including dry holes and lease impairment are high for the United States.

Other operating expenses are high for the United States.

Depreciation, depletion and amortization are high for Europe.

It appears that past major exploration is shifting to the United States.

Europe dominates the results of operations.

CASE 12-3 SUMMARY OF LOAN LOSS EXPERIENCE

(This case provides an opportunity to review loan loss experience.)

- There has been an increase each year in the balance of loan loss experience.
- Net charge-offs increased materially in 2001.
- Total charge offs increased materially in 2001.
- Ratio of net charge-offs during the period to average loans outstanding during the period increased materially in 2001.
- Commercial and industrial; and real estate - mortgage make up the bulk the Company's allowance for probable loan losses (they are approximately the same size).



CASE 12-4 YOU CAN BANK ON IT

(This case includes significant parts of the annual report of the Wells Fargo & Company. It provides an opportunity to review statements of a bank. You may want to consider extending the review beyond the questions included with the case.)

a.

	<u>1998</u>	<u>1997</u>	<u>1996</u>
1. Net interest income	109.3%	105.2%	100.0%
2. Provisions for loan losses	309.0%	228.0%	100.0%
3. Net interest income after provision for loan losses	96.4%	97.2%	100.0%
4. Total noninterest income	134.8%	119.0%	100.0%
5. Total noninterest expense	121.3%	103.0%	100.0%

b. 1. Net interest income increased moderately.

2. Provision for loan losses increased very materially.

3. Net interest income after provision for loan losses decreased moderately. (The provision for loan losses more than offset the increase in net interest income.)

4. Total noninterest income increased materially.

5. Total noninterest expense increased materially. (Notice that the increase in total noninterest income was better than the increase in total noninterest expense.)

c.

	(in millions)	
	<u>1998</u>	<u>1997</u>
Earnings assets:		
Federal funds sold and securities purchased under resale agreements	\$ 1,517	\$ 1,049
Securities available for sale	31,997	27,872
Mortgages held for sale	19,770	9,706
Loans held for sale	5,322	4,494
Net loans	104,860	103,249
Mortgage servicing rights	<u>3,080</u>	<u>3,048</u>
	<u>\$166,546</u>	<u>\$149,418</u>

		<u>1998</u>	<u>1997</u>
1.	$\frac{\text{Earning Assets}}{\text{Total Assets}} = \frac{\text{Total Earning Assets}}{\text{Total Assets}} =$	<u>\$166,546</u> \$202,475	<u>\$149,418</u> \$185,685
		82.26%	80.47%
2.	$\frac{\text{Interest Margin}}{\text{Average Earning Assets}} = \frac{\text{Interest Margin}}{\text{Average Earning Assets}} =$	<u>\$8,990</u> \$166,546	<u>\$8,648</u> \$149,418
		5.40%	5.79%
3.	$\frac{\text{Loan Loss Coverage Ratio}}{\text{Provision for Loan Losses}} = \frac{\text{Pretax Income} + \text{Net Charge Offs}}{\text{Provision for Loan Losses}} =$	<u>\$3,293</u> <u>+1,545</u> \$1,617	<u>\$4,193</u> <u>1,140</u> \$1,305
		2.99 Times per year	4.09 Times per year
4.	$\frac{\text{Equity Capital to Total Assets}}{\text{Average Equity}} = \frac{\text{Average Equity}}{\text{Average Total Assets}} =$	<u>\$20,759</u> \$202,475	<u>\$19,778</u> \$185,685
		10.25%	10.65%
5.	$\frac{\text{Deposits Times Capital}}{\text{Average Deposits}} = \frac{\text{Average Deposits}}{\text{Average Stockholders' Equity}} =$	<u>\$136,788</u> \$20,759	<u>\$127,656</u> \$19,778
		6.59 Times per year	6.45 Times per year
6.	$\frac{\text{Loans to Deposits}}{\text{Average Total Loans}} = \frac{\text{Average Total Loans}}{\text{Average Deposits}} =$	<u>\$5,322</u> <u>±</u> <u>\$104,860</u> \$136,788	<u>\$4,494</u> <u>±\$103,249</u> \$127,656
		80.55%	84.40%

- d. 1. Earning assets to total assets increased slightly between 1997 and 1998. This ratio is relatively good, indicating that the bank is putting assets to work effectively.

2. Interest margin to average earning assets declined moderately. This indicates a less profitable situation.
3. The loan loss coverage ratio decreased materially. This represents a substantial decrease in coverage of net charge-offs.
4. Equity capital to total capital declined moderately. Both years appear to be very good.

5. Deposits times capital increased moderately. This implies a modest decrease in the margin of safety.
6. Loans to deposits decreased moderately in 1998. This tentatively indicates decreased risk.

CASE 12-5 YOUR COVERED

(This case provides an opportunity to review the consolidated statement of income for the Chubb Corporation using horizontal common-size analysis.)

a. Horizontal Common-Size

The Chubb Corporation  
Consolidated Statements of Income  
Horizontal Common-Size

	Percent		
	2001	2000	1999
Revenues			
Premiums earned	117.8	108.7	100.0
Investment income	110.0	107.1	100.0
Real estate and other revenues	117.8	100.1	100.0
Realized investment gains	<u>.9</u>	<u>89.7</u>	<u>100.0</u>
Total Revenues	<u>115.2</u>	<u>107.8</u>	<u>100.0</u>
Claims and Expenses			
Insurance claims and claim expenses	135.9	104.7	100.0
Amortization of deferred policy acquisition costs	115.8	107.4	100.0
Other insurance operating costs and expenses	128.9	119.6	100.0
Real estate and other expenses	109.8	87.6	100.0
Investment expenses	102.9	100.0	100.0
Corporate expenses	<u>142.4</u>	<u>131.5</u>	<u>100.0</u>
Total claims and expenses	<u>129.9</u>	<u>106.3</u>	<u>100.0</u>
Income (loss) before federal and foreign income taxes	<9.3>	119.8	100.0
Federal and foreign income tax (credit)	<u>&lt;199.4&gt;</u>	<u>153.3</u>	<u>100.0</u>
Net income	<u>17.0</u>	<u>115.1</u>	<u>100.0</u>

- b. Total revenues increased slightly more than total claims and expenses in 2000. This resulted in a significant increase in income.

Total claims and expenses increased much faster than total revenues in 2001. This resulted in a loss in 2001.

Major problem areas appear to be the following:

1. Realized investment gains were close to zero in 2001.
2. Insurance claims and claim expenses increased at a much higher rate than did total revenues in 2001.
3. Other insurance operating costs and expenses increased at a much higher rate than did total revenues in 2001.
4. Corporate expenses increased at a much higher ratio than did total revenues in 2000 and 2001.

**THOMSON ANALYTICS™**

1. This Thomson Analytics exercise uses Delta Airlines to address a "special industry".

The data is not specific to a "special industry". The exercise covers business description, industry, sector, price chart, company news, peer review, and special industry ratios. We find that this source does not cover special industry ratios for Delta Airlines.

# Chapter 13

## Personal Financial Statements and Accounting for Governments and Not-For-Profit Organizations

### TO THE NET

1. Mission of the Governmental Accounting Standards Board?

The mission of the Governmental Accounting Standards Board is to establish and improve standards of state and local governmental accounting and financial reporting that will result in useful information for users of financial reports and guide and educate the public including issuers, auditors, and users of those financial reports.

2. Introduction to Performance Measurement

“The assessment of a government entity’s performance requires more than information about the acquisition and use of resources. It also needs information about the outputs and outcomes of the services provided and the relationship between the use of resources and those outputs and outcomes. Employing a variety of measures of inputs, outputs and outcomes, measures that relate efforts to accomplishments, and additional explanatory material will assist users of general purpose external financial reports to assess governmental performance more fully.

## QUESTIONS

- 13- 1. Personal financial statements may be prepared for an individual, a husband and wife, or a larger family group.
- 13- 2. The basic personal financial statement is the Statement of Financial Condition.
- 13- 3. No.
- 13- 4. No.
- 13- 5. Estimated current value basis.
- 13- 6. Net worth.
- 13- 7. Statement of Changes in Net Worth.
- 13- 8. No.
- 13- 9. No. Generally accepted accounting principles as they apply to personal financial statements require the accrual basis.
- 13-10. No. Assets and liabilities are not classified as current and noncurrent. Assets and liabilities are classified in order of liquidity and maturity.
- 13-11. a. Broker's statements  
b. Income tax returns  
c. Safe deposit box  
d. Insurance policies  
e. Real estate tax return  
f. Checkbook  
g. Bank statements
- 13-12. Examples would be methods used in determining current values of major assets, description of intangible assets, and assumptions used to compute the estimated income taxes.
- 13-13. If quoted market prices are not available, then reasonable estimates should be used.
- 13-14. Note: This is an open-ended question. The responses here are merely suggestions.  
1. Dues will not increase  
2. A monthly magazine will be started  
3. Add 100 new members



4. Retain a minimum of 90% of the current members
- 13-15. No. Not-for-profit organizations are not allowed to use fund accounting.
- 13-16. No. The accounting for a profit-oriented business is centered on the entity concept and the efficiency of the entity. The accounting for governments does not include a single entity concept or efficiency.
- 13-17. a. General fund - All cash receipts and disbursements not required to be accounted for in another fund.
- b. Proprietary fund - Intention is to maintain the fund's assets through cost reimbursement by users or partial cost recovery from users and periodic infusion of additional assets.
- c. Fiduciary fund - The principal of a fiduciary fund must remain intact. Typically, revenues earned may be distributed.
- 13-18. The number of funds that will be utilized will depend upon the responsibilities of the particular state or local government and the grouping of these responsibilities.
- 13-19. When the representatives of the citizens approve the budget, then the individual expenditures become limits. An increase in an approved expenditure will require approval by the same representatives of the citizens. Thus, the representatives of the citizens set up a legal control over expenditures.
- 13-20. Government Finance Officers' Association.
- 13-21. No. Industrial revenue bonds are not backed by the full faith and credit of the governmental unit.
- 13-22. Budgeting by objectives and/or measures of productivity can be incorporated into the financial reporting.
- 13-23. No. The accounting for a profit enterprise is centered on the entity concept and the efficiency of the entity. Fund accounting is centered on a self-balancing set of accounts. Fund accounting would not be a reasonable method for a profit enterprise.

PROBLEMS

PROBLEM 13-1

- a. \$ 80,000 Purchase price  
10,000 Improvements  
90,000  
1.40 Increase in inflation rate  
126,000  
20,000 Less mortgage  
\$106,000

Note: An appraisal would likely be preferable to this computation.

- b. \$9,000. The average selling price for this model of car.

- c. Estimated current value of the IRA:

IRA \$20,000  
Less Taxes:  
1. 10% IRS penalty for early withdrawal <\$ 2,000>  
2. \$20,000 x 30% <6,000>  
<\$ 8,000>

Estimated current value of the IRA \$12,000

- d. The guarantee should not be presented as a liability. It should be disclosed in a footnote, if material.
- e. If the offer to buy back the mortgage is still outstanding, the estimated current value of the debt would be \$40,000. If the buy-back offer has expired, then the estimated current value of the mortgage is \$45,000.

PROBLEM 13-2

a. Ree's:

1,000 shares x \$20 = \$20,000  
Less commission 148  
\$19,852

Bell's:

2,000 shares x \$8 = \$16,000  
Less commission 170  
\$15,830

b. Certificate of deposit \$10,000  
Accrued interest 500  
10,500  
Less early withdrawal penalty 300  
\$10,200

c. Present selling price per share \$ 25  
Option price per share 20  
Estimated value of options per share (A) 5  
Number of options (B) 500  
Total estimated value of options [A x B] \$2,500

d. Cash value \$50,000  
Less loan outstanding 20,000  
Estimated current value \$30,000

e. \$90,000 estimate of current value  
4,500 broker fee (5% x \$90,000)  
\$85,500

Note: It would be better to get an independent appraisal of the home than to use Larry's estimate.

PROBLEM 13-3

a. Marketable securities	\$5,000	x 28%	= \$1,400
Residence	25,000	x 28%	= <u>7,000</u>
			<u>\$8,400</u>

b. Barb and Carl  
Statement of Financial Condition  
December 31, 2004

Assets	
Cash	\$ 20,000
Marketable securities	50,000
Life insurance	50,000
Residence	125,000
Furnishings	25,000
Jewelry	20,000
Autos	<u>12,000</u>
	<u>\$302,000</u>
Liabilities	
Mortgage payable	\$ 90,000
Note payable	30,000
Credit cards	<u>10,000</u>
Total liabilities	130,000
Estimated income taxes on differences between estimated current value of assets and their tax basis	
	8,400*
Net worth	<u>163,600</u>
	<u>\$302,000</u>

\*(\$5,000 + \$25,000) x 28% = \$8,400

- c. 1. The net worth is \$163,600. Many would consider this a relatively high amount.
2. Liquid assets total \$70,000 (cash, \$20,000; and marketable securities, \$50,000).
3. The majority of the liabilities are long-term (mortgage payable, \$90,000).
4. Comparison of specific assets with related liabilities:

Residence:	
Current value	\$125,000
Mortgage payable	<u>90,000</u>
Net investment	<u>\$ 35,000</u>

PROBLEM 13-4

a. Marketable securities:	\$20,000 x 28% =	\$ 5,600
Options:	\$30,000 x 28% =	8,400
Residence:	\$50,000 x 28% =	14,000
Royalties:	\$20,000 x 28% =	<u>5,600</u>
		<u>\$33,600</u>

b. Mary Lou and Ernie  
Statement of Financial Condition  
December 31, 2004

Assets	
Cash	\$ 20,000
Marketable securities	100,000
Options	30,000
Residence	150,000
Royalties	20,000
Furnishings	20,000
Auto	<u>15,000</u>
	<u>\$355,000</u>
Liabilities	
Mortgage	\$ 70,000
Auto loan	<u>10,000</u>
Total liabilities	80,000
Estimated income taxes on differences between estimated current value of assets and their tax basis	
	33,600*
Net worth	<u>241,400</u>
	<u>\$355,000</u>

\* (\$20,000 + \$30,000 + \$50,000 + \$20,000) x 28% = \$33,600

- c. 1. The net worth is \$241,400.
2. Liquid assets total \$120,000 (cash, \$20,000; marketable securities, \$100,000).
3. Most of the liabilities appear to be long-term (mortgage payable, \$70,000).
4. Comparison of specific assets with related liabilities:

Auto		Residence	
Current value	\$15,000	Current value	\$150,000
Auto loan	<u>10,000</u>	Mortgage	<u>70,000</u>
Net investment	<u>\$ 5,000</u>	Net investment	<u>\$ 80,000</u>



PROBLEM 13-5

a.

Bob and Sue  
Statement of Changes in Net Worth  
For the Year Ended December 31, 2004

Realized increases in net worth	
Salary	\$ 60,000
Dividend income	2,500
Interest income	2,000
Gain on sale of marketable securities	<u>500</u>
	65,000
Realized decreases in net worth	
Income taxes	20,000
Interest expense	6,000
Personal expenditures	<u>29,000</u>
	<u>55,000</u>
Net realized increases in net worth	<u>10,000</u>
Unrealized increases in net worth	
Stock options	3,000
Land	7,000
Residence	<u>5,000</u>
	<u>15,000</u>
Unrealized decreases in net worth	
Boat	3,000
Jewelry	1,000
Furnishings	4,000
Estimated income taxes on the differences between the estimated current values of assets and the estimated current amounts of liabilities and their tax bases	<u>15,000</u>
	<u>23,000</u>
Net unrealized decreases in net worth	<u>8,000</u>
Net increase in net worth	2,000
Net worth at the beginning of year	<u>150,000</u>
Net worth at the end of year	<u>\$152,000</u>

- b. 1. Most of the realized increases in net worth came from salary (\$60,000).
2. The major decreases in realized net worth were income taxes (\$20,000) and personal expenditures (\$29,000).
3. Net realized increases in net worth, \$10,000.
4. Land had the most material increase in unrealized net worth (\$7,000).
5. Principle unrealized decreases in net worth was the estimated income taxes on the difference between the estimated current values of assets and the estimated amounts of liabilities and their tax bases (\$15,000).
6. Net unrealized decreases in net worth (\$8,000).
7. Net increase in net worth (\$2,000).
8. Net worth at the end of year (\$152,000).



PROBLEM 13-6

a. Jim and Carrie  
Statement of Changes in Net Worth  
For the Year Ended December 31, 2004

Realized increases in net worth	
Salary	\$ 50,000
Interest income	<u>6,000</u>
	56,000
Realized decreases in net worth	
Income taxes	15,000
Interest expense	3,000
Personal property taxes	1,000
Real estate taxes	1,500
Personal expenditures	<u>25,000</u>
	45,500
Net realized increases in net worth	<u>10,500</u>
Unrealized increases in net worth	
Marketable securities	2,000
Land	5,000
Residence	3,000
Stock options	<u>4,000</u>
	14,000
Unrealized decreases in net worth	
Furnishings	3,000
Estimated income taxes on the differences between the estimated current values of assets and the estimated current amounts of liabilities and their tax bases	<u>12,000</u>
	15,000
Net unrealized decreases in net worth	<u>1,000</u>
Net increase in net worth	9,500
Net worth at the beginning of year	<u>130,000</u>
Net worth at the end of year	<u>\$139,500</u>

- b. 1. Net increase in net worth was \$9,500, which brought the net worth at the end of the year to \$139,500.
2. The major increase in realized net worth was salary (\$50,000).
3. The major realized decrease in net worth was personal expenditures (\$25,000).

PROBLEM 13-7

a. Revenues

Income taxes	50.0	
Property taxes	5.1	
Special assessments		6.7
Licenses and permits		.7
Intergovernmental services		19.1
Charges for services		4.1
Investment earnings		2.5
Fines and forfeitures		1.3
All other revenue		<u>.8</u>
Total Revenue		<u>90.3</u>

Expenditures

Current:

General government		7.0
Public service		9.1
Public safety		45.7
Public utilities		.5
Community environment		7.0
Health		5.6
Parks and recreation		1.7
Capital Outlay	14.4	
Debt Service		
Principal retirement		4.8
Interest and fiscal charges		<u>4.0</u>
Total Expenditures		<u>100.0</u>

b. The most significant revenue item is income taxes, representing 50% of total expenditures.

The most significant expenditure is public safety representing 45.7% of total expenditures.

PROBLEM 13-8

a. City of Toledo

Income Tax Revenues  
Horizontal Common-Size Analysis

<u>Fiscal Year</u>	<u>% Common-Size Analysis</u>
1992	100.0
1993	104.8
1994	113.2
1995	117.5
1996	125.4
1997	129.2
1998	130.9
1999	136.0
2000	139.3
2001	136.7

b. Income tax revenues increased substantially between 1992 and 1997. There has been a modest increase between 1997 and 2001. Income tax revenues declined in 2001.

PROBLEM 13-9

a. Assessed value increase

1992	\$3,196,025,000
2001	\$4,025,806,000
Increase	\$ 829,781,000

b. General bonded debt increase

1992	\$ 68,995,000
2001	\$123,810,000
Increase	\$ 54,815,000

c. Assessed value increased 25.9%, while general bonded debt increased 79.4%. Debt went up much more than the increase in assessed value.

PROBLEM 13-10

a. Combined fund balance increased from \$15,761,000 in 1997 to \$17,975,000 in 1998, an increase of \$2,214,000.

b. Institute of Management Accountants, Inc. and Affiliates  
Combined Statement of Activities and Changes in Net Assets  
Horizontal Common-Size Analysis  
Years Ended June 30, 1998 and 1997  
(Revenues and Support, and Expenses)

	In Percentage	
	<u>1998</u>	<u>1997</u>
Revenues and support:		
Membership dues and fees	96.1	100.0
Education programs	104.4	100.0
Annual conference	95.4	100.0
Advertising and sales of publications	103.9	100.0
CMA/CFM examination fees	79.5	100.0
Interest income	113.8	100.0
Other	<u>75.0</u>	<u>100.0</u>
Total revenues and support	<u>99.0</u>	<u>100.0</u>
Expenses:		
Payments to chapters	97.7	100.0
Chapter and member services	95.3	100.0
Education programs	103.5	100.0
Marketing	103.4	100.0
Annual conference	108.3	100.0
Publications and information center	110.0	100.0
CMA/CFM program	80.8	100.0
Research expenditures	22.8	100.0
Administration and occupancy costs	90.3	100.0
Asset valuation charge	0.0	100.0
Other	<u>72.7</u>	<u>100.0</u>
Total expenses	<u>90.9</u>	<u>100.0</u>

c. Institute of Management Accountants, Inc. and Affiliates

Combined Statement of Activities  
Vertical Common-Size Analysis  
Years Ended June 30, 19985 and 19974  
(Total Revenue and Expenses)

	In Percentage	
	<u>1998</u>	<u>1997</u>
Revenues and support:		
Membership dues and fees	40.8	42.1
Education programs	8.1	7.7
Annual conference	3.5	3.6
Advertising and sales of publications	12.6	12.0
CMA/CFM examination fees	8.0	7.9
Investment income	24.6	21.4
Other	<u>4.1</u>	<u>5.4</u>
Total revenues and support	<u>100.0</u>	<u>100.0</u>
Expenses:		
Payments to chapters	5.3	5.4
Chapter and member services	10.3	10.7
Education programs	10.0	9.6
Marketing	2.7	2.6
Annual conference	3.1	2.8
Publications and information center	13.8	12.4
CMA/CFM program	8.2	10.0
Research expenditures	.8	.6
Administration and occupancy costs	30.3	33.2
Asset valuation charge	--	3.5
Other	<u>4.0</u>	<u>5.4</u>
Total expenses	<u>88.4</u>	<u>96.2</u>

d. Horizontal

1. Very significant decrease in CMA/CFM examination fees.
2. Very significant decrease in other revenues.
3. Significant increase in investment income.
4. Significant increase in publications.
5. Very significant increase in administration and occupancy costs.
6. Asset valuation charge eliminated.
7. Very significant decrease in other expenses.

Vertical

1. Asset valuation charge eliminated.
2. Significant decrease in total expenses.



CASES

CASE 13-1 GOVERNOR LUCAS - THIS IS YOUR COUNTY

(This case provides the opportunity to review selected parts of the Lucas County statements.)

a.

Lucas County, Ohio  
Statement of Net Assets  
Vertical Common-Size Analysis

	December 31, 2001 Primary Government			
	Government al Activities	Business- type Activities	Total	Compone nt Units
Assets:				
Pooled cash and cash equivalents	8.7	2.7	7.9	8.8
Pooled investments	24.4	7.4	22.0	23.4
Segregated cash accounts	1.0	--	.9	--
Receivables, net	21.9	3.8	19.3	6.9
Due from other funds	.0	--	.0	--
Due from other governments	1.5	--	1.3	--
Prepaid expenses	--	--	--	.9
Inventory of materials and supplies	.1 <u>42.3</u> 100.0	.1 <u>86.1</u> 100.0	.1 <u>48.5</u> 100.0	.9 <u>59.2</u> 100.0
Capital assets, net				
Total assets	3.0	.3	2.6	6.8
Liabilities:	4.7	.7	4.1	1.5
Accounts payable	.0	.0	.0	--
Accrued wages and benefits	.3		.3	--
Due to other funds	1.0		.9	--
Due to other governments	.0		.0	--
Deposits	--		--	1.9
Matured bonds payable	1.1		.9	--
Matured interest payable	1.7		1.5	--
Deferred revenue				
Claims payable	2.0	.7	1.8	.5
Notes payable	<u>17.3</u>	<u>19.5</u>	<u>17.6</u>	<u>28.5</u>
Long-term liabilities	<u>31.1</u>	<u>21.2</u>	<u>29.7</u>	<u>39.3</u>
Due within one year				
Due in more than one				

year				
Total liabilities	23.0	65.9	29.1	
Net Assets:				
Invested in capital	3.1		2.7	
assets,	1.7		1.4	
Net of related debt	.0		.0	
	<u>41.1</u>	<u>12.9</u>	<u>37.1</u>	<u>60.7</u>
Restricted for:	<u>68.9</u>	<u>78.8</u>	<u>70.3</u>	<u>60.7</u>
Capital projects				
Debt service				
Other purposes				
Unrestricted				
Total net assets				



- b. - Capital assets, net is the dominate asset.
  - Long-term liabilities, due in more than one year is the dominate liability.
  - Unrestricted, net assets is the dominate item in net assets.
- c. - General Fund
  - Children Services Board Special Revenue Fund
  - Board of Mental Retardation Special Revenue Fund
  - Public Assistance Special Revenue Fund
  - Capital Improvements Capital Project Fund
  - Debt Service Fund
- d. - Water Supply System Enterprise Fund
  - Sewer System Enterprise Fund
  - Wastewater Treatment Enterprise Fund
- e. Basic of Accounting: Basis of accounting determines when transactions are recorded in the financial records and reported on the financial statements. Government-wide financial statements are prepared using the accrual basis accounting. Governmental funds use the modified accrual basis of accounting proprietary and fiduciary funds also use the accrual basis of accounting.
- f. (1) Revenues are recorded when received in cash (budget) as opposed to when susceptible to accrual (GAAP).  
  
(2) Expenditures are recorded when encumbered, or paid in cash (budget), as opposed to when susceptible to accrual (GAAP).
- g. Capital assets are defined by the government as assets with an initial, individual cost of more than \$5,000 (amount not rounded) and an estimated useful life in excess of two years.
- h. - Furniture, fixtures and equipment 5-20 years
  - Buildings, structures, improvements 20-40 years
  - Land improvements (water and sewer lines) 40 years
  - Infrastructure 20-40 years
- i. Use of Estimates: The preparation of the basic financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. Estimates also affect the reported amount of revenues and expenses during the reported period. Actual results could differ from those estimates.

CASE 13-2 MY MUD HENS

(This case provides the opportunity to view the Toledo Mud Hens Baseball Club. Which is considered to be a component unit of Lucas County, Ohio.)

- a. The Mud Hens would present a non-profit statement. It should disclose the relationship with Lucas County, Ohio.
- b. Lucas County, Ohio presents the Toledo Mud Hens Baseball Club, Inc. as a discretely presented component unit. A component unit is a legally separate organization which the elected officials of the primary government are financially accountable. Per the Lucas County statement.

The discretely presented component unit column in the combined financial statements include the County's component units. They are reported in a separate column to emphasize that they are legally separate from the county."

CASE 13-3 JEEP

(This case provides an opportunity to view the relationship between Lucas County, Ohio and Daimler Chrysler.)

- a. The County would account for the \$2 million expenditure as a normal expenditure. Daimler Chrysler is an independent private company. It does not qualify to be consolidated into the Lucas County Statements, nor does it qualify to be presented as a component unit.



The Islamia University Of Bahawalpur, Pakistan  
[www.iub.edu.pk](http://www.iub.edu.pk)



