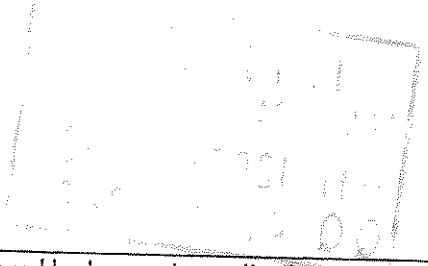
BOOK 3 – FINANCIAL STATEMENT ANALYSIS



READINGS AND LEARNING OUTCOME STATEMENTS

READINGS

The following material is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute.

STUDY SESSION 7

Reading Assignments

STUDY SESSION 8

Reading Assignments

STUDY SESSION 9

Reading Assignments

STUDY SESSION 10

Reading Assignments

LEARNING OUTCOME STATEMENTS (LOS)

STUDY SESSION 7

The topical coverage corresponds with the following CFA Institute assigned reading:

33. **Framework for Financial Statement Analysis**

The candidate should be able to:

a. discuss the general principles of the financial reporting system and explain the objectives of financial reporting according to the Financial Accounting Standards Board (FASB) conceptual framework. (page 9)
b. identify the two primary qualities of accounting information (i.e., relevance and reliability), the ingredients of relevance (i.e., predictive value, feedback value and timeliness), the ingredients of reliability (i.e., verifiability, neutrality and representational faithfulness), the two secondary qualities of accounting information (i.e., comparability and consistency), and discuss how these qualities provide useful information to an analyst. (page 11)
c. describe and explain the purposes of the five principal financial statements (i.e., Balance Sheet, Income Statement, Statement of Comprehensive Income, Statement of Cash Flows and Statement of Stockholders' Equity) and discuss the additional sources of information accompanying the financial statements, including the financial footnotes, supplementary schedules, Management Discussion and Analysis (MD&A) and proxy statements. (page 11)
d. discuss the role of the auditor and the meaning of the audit opinion. (page 13)

The topical coverage corresponds with the following CFA Institute assigned reading:

34. **Accounting Income and Assets: The Accrual Concept**

The candidate should be able to:

a. describe the format of the income statement and discuss the components of net income. (page 18)
b. describe the criteria for revenue and expense recognition and discuss major issues in revenue and expense recognition including the affect on reported earnings and their implications for financial analysis. (page 19)
c. compare the percentage-of-completion method with the completed contract method and contrast the effects of the two methods on the income statement, balance sheet, statement of cash flows and selected financial ratios. (page 21)

d. describe the types and analysis of unusual or infrequent items, extraordinary items, discontinued operations, accounting changes, and prior period adjustments. (page 24)
e. discuss managerial discretion in areas such as classification of good news/bad news, income smoothing, big bath behavior and accounting changes, and explain how this discretion can affect the financial statements. (page 26)
f. describe the format and the components of the balance sheet and the format, classification, and use of each component of the statement of stockholders' equity. (page 27)

The topical coverage corresponds with the following CFA Institute assigned reading:

35. **The Statement of Cash Flows**

The candidate should be able to:

a. identify the principal purposes and uses of the statement of cash flows. (page 42)
b. compare and contrast the three major classifications (i.e., cash provided or used by operating activities, investing activities, and financing activities) in a statement of cash flows, and describe how noncash investing and financing transactions are reported. (page 43)
c. calculate and analyze, using the indirect method, the net cash flow provided or used by operating activities, investing activities and financing activities. (page 44)

The topical coverage corresponds with the following CFA Institute assigned reading:

36. **Analysis of Cash Flows**

The candidate should be able to:

a. classify a particular transaction or item as cash flow from 1) operations, 2) investing, or 3) financing. (page 51)
b. compute and interpret a statement of cash flows, using the direct method and the indirect method. (page 53)
c. convert an indirect statement of cash flows to a direct basis. (page 59)
d. explain the two primary factors (i.e., acquisitions/divestitures and translation of foreign subsidiaries) that may cause discrepancies between balances of operating assets and liabilities reported on the balance sheet and those reported in the cash flow statement. (page 60)
e. describe and compute free cash flow. (page 60)
f. distinguish between U.S. GAAP and IAS GAAP classifications of dividends paid or received and interest paid or received for statement of cash flow purposes. (page 60)

The topical coverage corresponds with the following CFA Institute assigned reading:

37. **Worldwide Accounting Diversity and International Standards**

The candidate should be able to:

a. discuss the factors influencing and leading to diversity in accounting and reporting practices throughout the world and explain why worldwide accounting diversity causes problems for capital market participants. (page 71)
b. discuss the importance of the hierarchical model of accounting diversity. (page 73)
c. discuss the arguments for and against harmonization and discuss the role of the International Accounting Standards Board (IASB). (page 73)

STUDY SESSION 8

The topical coverage corresponds with the following CFA Institute assigned reading:

38. **Analysis of Financial Statements**

The candidate should be able to:

a. interpret common-size balance sheets and common-size income statements, and discuss the circumstances under which the use of common-size financial statements is appropriate. (page 77)

b. discuss the purposes and limitations of financial ratios and why it is important to examine a company's performance relative to the economy and its industry. (page 79)
c. calculate, interpret and discuss the uses of measures of a company's internal liquidity, operating performance (i.e., operating efficiency and operating profitability), risk analysis, and growth potential. (page 80)
d. calculate and interpret the various components of the company's return on equity using the original and extended DuPont systems and a company's financial ratios relative to its industry, to the aggregate economy, and to the company's own performance over time. (page 88)

The topical coverage corresponds with the following CFA Institute assigned reading:

39. **Dilutive Securities and Earnings per Share**

The candidate should be able to:

a. differentiate between simple and complex capital structures for purposes of calculating earnings per share (EPS), describe the components of EPS, and calculate a company's EPS in a simple capital structure. (page 106)
b. calculate a company's weighted average number of shares outstanding. (page 107)
c. determine the effect of stock dividends and stock splits on a company's weighted average number of shares outstanding. (page 108)
d. distinguish between dilutive and antidilutive securities and calculate a company's basic and diluted EPS in a complex capital structure, and describe and determine the effects of convertible securities, options and warrants on a company's EPS. (page 109)
e. compare and contrast the requirements for EPS reporting in simple versus complex capital structures. (page 114)

STUDY SESSION 9

The topical coverage corresponds with the following CFA Institute assigned reading:

40. **Analysis of Inventories**

The candidate should be able to:

a. compute ending inventory balances and cost of goods sold using the LIFO, FIFO, and average cost methods to account for product inventory and explain the relationship among and the usefulness of inventory and cost of goods sold data provided by the LIFO, FIFO, and average cost methods when prices are 1) stable or 2) changing. (page 124)
b. analyze the financial statements of companies using different inventory accounting methods to compare and describe the effect of the different methods on cost of goods sold and inventory balances, discuss how a company's choice of inventory accounting method affects other financial items such as income, cash flow, and working capital, and compute and describe the effects of the choice of inventory method on profitability, liquidity, activity, and solvency ratios. (page 128)
c. discuss the reasons that a LIFO reserve might decline during a given period and discuss the implications of such a decline for financial analysis. (page 135)
d. discuss how inventories are reported in the financial statements and how the lower of cost or market principle is used and applied. (page 135)

The topical coverage corresponds with the following CFA Institute assigned reading:

41. **Long-Term Assets**

The candidate should be able to:

a. describe the factors that distinguish long-term assets from other assets and identify the common types of long-term assets and how carrying value is determined on the balance sheet. (page 145)
b. determine the costs that are capitalized to property, plant and equipment and determine which costs are expensed as incurred. (page 146)

c. explain depreciation accounting (including the reasons for depreciation), calculate depreciation using the straight-line, production (also known as units-of-production), and declining-balance methods, and calculate depreciation after revising the estimated useful life of an asset. (page 146)
d. describe how to account for the sale, exchange, or disposal of depreciable assets, and determine whether a gain or loss is recorded. (page 148)
e. identify assets that should be classified as natural resources, determine their carrying values on the balance sheet and calculate depletion. (page 149)
f. identify the types of intangible assets and describe how the accounting treatment for goodwill under U.S. GAAP differs from the accounting treatment for other intangible assets. (page 149)

The topical coverage corresponds with the following CFA Institute assigned reading:

42. **Analysis of Long-Lived Assets: Part I — The Capitalization Decision**

The candidate should be able to:

a. compute and describe the effects of capitalizing versus expensing on net income, shareholders' equity, cash flow from operations, and financial ratios including the effect on the interest coverage ratio (times interest earned) of capitalizing interest costs. (page 154)
b. explain the circumstances in which intangible assets, including software development costs and research and development costs are capitalized. (page 160)
c. calculate and describe both the initial and long-term effects of asset revaluations on financial ratios. (page 161)

The topical coverage corresponds with the following CFA Institute assigned reading:

43. **Analysis of Long-Lived Assets: Part II — Analysis of Depreciation and Impairment**

The candidate should be able to:

a. identify the different depreciation methods and discuss how the choice of depreciation method affects a company's financial statements, ratios, and taxes. (page 167)
b. explain the role of depreciable lives and salvage values in the computation of depreciation expenses, and compute and describe how changing depreciation methods or changing the estimated useful life or salvage value of an asset affects financial statements and ratios. (page 172)
c. discuss the use of fixed asset disclosures to compare companies' average age of depreciable assets, and calculate, using such disclosures, the average age and average depreciable life of fixed assets. (page 173)
d. define impairment of long-lived assets and explain what effect such impairment has on a company's financial statements and ratios. (page 175)
e. discuss the liability for closure, removal, and environmental effects of long-lived operating assets, and discuss the financial statement impact and ratio effects of that liability. (page 177)

STUDY SESSION 10

The topical coverage corresponds with the following CFA Institute assigned reading:

44. **Analysis of Income Taxes**

The candidate should be able to:

a. discuss the key terms (e.g., deferred tax asset, valuation allowance, deferred tax liability, taxes payable, income tax expense, temporary difference, permanent difference, etc.) used in income tax accounting, explain why and how deferred tax liabilities and assets are created, and describe the liability method of accounting for deferred taxes. (page 185)
b. discuss the implications of a valuation allowance for deferred tax assets (i.e., when it is required, what impact it has on the financial statements, and how it might affect an analyst's view of a company). (page 188)
c. explain the factors that determine whether a company's deferred tax liabilities should be treated as a liability or as equity for purposes of financial analysis. (page 188)

d. distinguish between temporary and permanent items in pretax financial income and taxable income. (page 189)
e. determine income tax expense, income taxes payable, deferred tax assets, and deferred tax liabilities, and calculate and interpret the adjustment to the financial statements related to a change in the tax rate. (page 191)
f. analyze disclosures relating to deferred tax items and the effective tax rate reconciliation and discuss how information included in these disclosures affects a company's financial statements and financial ratios. (page 194)
g. compare and contrast a company's deferred tax items and effective tax rate reconciliation between reporting periods and/or to other companies. (page 194)

The topical coverage corresponds with the following CFA Institute assigned reading:

45. **Analysis of Financing Liabilities**

The candidate should be able to:

a. compute the effects of debt issuance and amortization of bond discounts and premiums on the financial statements and ratios, and discuss the effect on the financial statements from issuing zero-coupon debt. (page 207)
b. determine the appropriate classification for debt with equity features and calculate the effect of issuance of such instruments on the debt to total capital ratio. (page 213)
c. describe the disclosures relating to financing liabilities, and discuss the advantages/disadvantages to the company of selecting a given instrument and the effect of the selection on a company's financial statements and ratios. (page 213)
d. determine the effects of changing interest rates on the market value of debt and on financial statements and ratios. (page 215)
e. explain the role of debt covenants in protecting creditors by limiting a company's freedom to invest, pay dividends, or make other operating and strategic decisions. (page 216)

The topical coverage corresponds with the following CFA Institute assigned reading:

46. **Leases and Off-Balance-Sheet Debt**

The candidate should be able to:

a. discuss the motivations for leasing assets instead of purchasing them and the incentives for reporting the leases as operating leases rather than capital leases. (page 222)
b. determine the effects of capital and operating leases on the financial statements and ratios of the lessees and lessors. (page 223)
c. describe the types and economic consequences of off-balance-sheet financing and determine how take-or-pay contracts, throughput arrangements, and the sale of receivables affect selected financial ratios. (page 227)
d. distinguish between a sales-type lease and a direct financing lease and determine the effects on the financial statements and ratios of the lessors. (page 228)

The following is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

FRAMEWORK FOR FINANCIAL STATEMENT ANALYSIS

Study Session 7

EXAM FOCUS

The understanding of financial statements and their analysis is the key to making sound investment decisions. The Financial Accounting Standards Board sets accounting standards used in the creation of financial statements for U.S.-based companies. Along with the Financial Accounting Standards Board, the standards of the International Accounting Standards Board are used either explicitly or as the basis for most accounting standards prescribed by individual countries around the world. The Financial Accounting Standards Board's standards are codified into a set of Generally Accepted Accounting Principles, which are intended to result in financial statements that are useful, reliable, and comparable across companies. From this topic review, you should recognize how all financial statements—the balance sheet, income statement, statement of cash flows, statement of comprehensive income, and statement of stockholder's equity—are each linked to one another. You should also know that the footnotes and Management Discussion and Analysis help to add detail and explain information summarized in the financial statements.

LOS 33.a: Discuss the general principles of the financial reporting system and explain the objectives of financial reporting according to the Financial Accounting Standards Board (FASB) conceptual framework.

One purpose of financial statements is to help investors and creditors make more informed economic decisions. Under **Generally Accepted Accounting Principles** (GAAP), financial statements are based on selective reporting of events and choices of accounting methods, and are only an approximation of economic reality.

Because economic events and accounting recognition of these events diverge across the dimensions of timing, recognition, and measurement, financial statement analysis (interpretation) is required.

Timing. Economic events and the accounting entries for those events may take place at different times. For example, under U.S. GAAP, if a real estate investment is sold for a gain, the appreciation of the investment is recognized only after the sale. No accounting gain is recognized during the holding period, even though the economic value of the asset is increasing through time. Thus, the economic value of the asset is not recognized in an accounting sense until the asset is actually sold.

Accounting for impaired fixed assets presents a similar problem. An asset becomes "impaired" when managers recognize that the economic value of the asset is materially less than the book value and that the value is unlikely to recover to previous levels. Impairment is recognized, and fixed assets are written down during the period of management's choice, not during the period when impairment occurred.

Recognition. Many economic events do not receive accounting recognition. For example, many financial commitments enforced by signed contracts are not recognized on the financial statements. Fortunately, supplementary footnote information helps the financial analyst interpret and adjust the financial statements (including financial ratios) in order to make them comparable, consistent, and more reflective of economic reality. The analytical treatment of "off-balance-sheet" financing (obligations which are not on the balance sheet) is an example of this process.

Measurement. Accounting rules permit economic events to be reported in different ways by different financial statement preparers. For example, one firm may use the first in, first out (FIFO) method of inventory accounting for computing inventory and cost of goods sold, while a virtually identical firm may choose to use the last in, first out (LIFO) method. The different accounting choices would likely result in materially different cost of goods sold and inventory carrying values. Moreover, all performance measures and any ratios that include those accounts would also be affected. A casual user of financial statements would probably conclude that the two firms are different when they are actually economical equivalents.

Analysts also need to learn how to use supplementary information contained in the financial reports as well as information from outside the financial reporting process to make the financial data more useful.

Objectives of Financial Reporting

Statement of Financial Accounting Concepts (SFAC) 1 states that financial statements should provide useful information to investors and creditors for evaluating the amount, timing, and uncertainty of future cash flows. Said differently, the objective of financial analysis is the comparative measurement of risk and return as it relates to investment choices or credit decisions.

- Equity investors are interested in identifying firms with long-term earning power, growth opportunities, and ability to pay dividends.
- Short-term creditors are more concerned with the liquidity of the business.
- Long-term creditors (investors in bonds) focus on the long-term asset position and earning power.

In the U.S., financial statements are prepared according to U.S. GAAP. In developing countries, financial statements are often prepared according to the standards of the International Accounting Standards Board (IASB), U.S. GAAP, or U.K. GAAP. It is noteworthy that these standards boards assume the primary users of financial statements are investors and creditors and generally tailor their standards to satisfy the needs of these groups. However, other outside users depend upon these statements to provide them with useful financial information.

Classes of users. The concepts and techniques of financial statement analysis are aimed at external users, such as:

- Investors: both creditors and equity investors.
- Government: regulators and taxing authorities.
- Others: general public, special interest groups, labor, etc.

Financial information and capital markets. Some academic research is critical of the accounting process and the benefit of financial analysis. However, conclusions critical of market efficiency have proven to be somewhat premature. More recent research demonstrates the market's reliance on fundamental analysis as a form of processing information in order to better understand the relationship between risk and return for individual securities.

The financial reporting system depends on data stemming from accounting events or transactions and selected economic events. The following principles are the foundation of accrual accounting:

- *Recognition principle:* revenue is recognized when goods are delivered or services are performed and the associated expenses are recorded, not necessarily when cash is received for the goods or services.
- *Matching principle:* revenues and associated costs are recognized in the same accounting period.
- *Historical cost principle:* represents a transaction's original value. For example, the historical cost of a fixed asset is its original purchase price plus any installation and shipping fees. One advantage to historical cost is that it is objective and verifiable.

LOS 33.b: Identify the two primary qualities of accounting information (i.e., relevance and reliability), the ingredients of relevance (i.e., predictive value, feedback value and timeliness), the ingredients of reliability (i.e., verifiability, neutrality and representational faithfulness), the two secondary qualities of accounting information (i.e., comparability and consistency), and discuss how these qualities provide useful information to an analyst.

Statement of Financial Accounting Concepts (SFAC) 2 mandates the qualitative characteristics of accounting information. Financial statement information should facilitate comparisons of firms using alternative reporting methods and be useful for decision-making. For accounting information to be useful for an analyst, it should have the following characteristics:

Relevance means that information could potentially affect a decision. The relevance of accounting information depends to a large extent on the purpose of the analysis. For example, an equity analyst is most concerned with earnings and growth rates. The ingredients of relevance are *timeliness, predictive value*, and *feedback value*.

Timeliness is important because information loses value rapidly in the financial world. Timely data is helpful in making the projections on which market prices are based. For equity and credit analysts, relevance clearly requires that accounting disclosures have *predictive value* as well. Since both equity valuation and analysis of the risk of a firm's debt are based on future results, information about past results is only of value to the extent that it is useful for predicting future results. *Feedback value* refers to the usefulness of accounting data in providing the information necessary to update or correct prior predictions.

Reliability refers to information that can be *verified* (measured accurately) and has *representational faithfulness* (it is what it is reported to be). Without these two characteristics, data cannot be relied upon in making investment decisions. Reliable information should also reflect *neutrality* (does not consider the economic impact of the reported information).

Professor's Note: The qualities of relevance and reliability can often be at odds with one another. For example, market value data is relevant but may not be reliable; on the other hand, historical cost data is highly reliable but may have little relevance.

- *Consistency.* Accounting information should be reported using the same accounting principles over time.
- *Comparability.* Information should allow comparisons among companies. Comparability is often a problem in financial analysis because companies use different accounting methods and estimates.
- *Materiality.* Material data are important enough for inclusion in the financial statements. Many analysts define materiality in quantitative terms (e.g., 5% of assets); however, most analysts agree that an item is material if it affects the value of the firm.

LOS 33.c: Describe and explain the purposes of the five principal financial statements (i.e., Balance Sheet, Income Statement, Statement of Comprehensive Income, Statement of Cash Flows and Statement of Stockholders' Equity) and discuss the additional sources of information accompanying the financial statements, including the financial footnotes, supplementary schedules, Management Discussion and Analysis (MD&A) and proxy statements.

The output of the accounting process is a set of financial statements, footnotes, and supplemental data.

The **balance sheet** reports financial position:

- *Assets* are probable current and future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.
- *Liabilities* are probable future sacrifices of economic benefits. They arise 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.

- *Equity* is the residual interest in the net assets of an entity that remains after deducting its liabilities.

Transactions are measured so that the following fundamental balance sheet equation holds:

assets = liabilities + stockholders' equity, or A = L + E

The **income statement** reports on the performance of the firm and explains some, but not all, of the changes in the assets, liabilities, and equity of the firm between two balance sheet dates. The income statement is governed by accrual concepts and the matching principle. The *elements of the income statement* include:

- *Revenues* that are inflows from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.
- *Expenses* that are outflows from delivering or producing goods or services that constitute the entity's ongoing major or central operations.
- *Gains and losses* that are increases (decreases) in equity or net assets from peripheral or incidental transactions.

The **statement of comprehensive income** reports the change in equity from transactions and from non-owner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners. The purpose of the statement of comprehensive income is to help distinguish income from continuing operations from changes in carrying amounts of assets and liabilities.

The results of continuing operations, unusual or infrequent operations, taxes, discontinued operations, extraordinary items, and the effects of accounting changes are reported separately on the typical income statement. In many cases, however, the classification of items is subject to management discretion.

The **statement of cash flows** reports the cash receipts and outflows classified as operating, investing, and financing activities. These cash flows are defined as follows:

- *Investing cash flows* are those resulting from acquisition or sale of property, plant, and equipment, of a subsidiary or segment, and purchase or sale of investments in other firms. Note that these must be reported on a gross basis (e.g., acquisitions separate from sale of property).
- *Financing cash flows* are those resulting from issuance or retirement of debt and equity securities and dividends paid to stockholders.
- *Cash from operations* includes the cash effects of all transactions that are neither investing nor financing as defined above.

The **statement of stockholders' equity** reports the amounts and sources of changes in equity from transactions with owners and may include the following components: preferred shares, common shares at par, additional paid-in-capital, retained earnings, Treasury shares, employee stock ownership plan adjustments, minimum pension liability, valuation allowance for changes in the values of marketable securities, and cumulative foreign currency translation adjustment.

Financial footnotes include disclosures that help explain the information summarized in the financial statements. Footnotes are required by GAAP or the SEC to allow users to improve assessments of the amount, timing, and uncertainty of the estimates reported in the financial statements. Footnotes:

- Provide information about accounting methods and the assumptions and estimates used by management.
- Are audited, whereas other disclosures, such as supplementary schedules, are not audited.
- Provide additional information on such items as fixed assets, inventory, income taxes, pensions, debt, contingencies and commitments, marketable securities, significant customers, sales to related parties, and export sales.
- Often contain disclosures relating to contingent losses. Firms are required to accrue a loss when (1) it is probable that assets have been impaired or a liability has been incurred and (2) when the amount of the loss

- can be reasonably estimated. A range of possible losses from a minimum to a maximum range is estimated. If
- it is only reasonably possible that a loss has been incurred, then footnote disclosure of that loss contingency is required. Examples include litigation, expropriation, and repurchase agreements.

Supplementary schedules contain additional information. Examples of such disclosures are:

- Operating income or sales by region or business segment.
- Reserves for an oil and gas company.
- Information about hedging activities and financial instruments.

The Management Discussion and Analysis (MD&A) portion of a financial disclosure provides an assessment of the financial performance and condition of a company from the perspective of the company. The MD&A is required by the SEC.

The MD&A is required to discuss:

- Results from operations, with a discussion of trends in sales and expenses.
- Capital resources and liquidity, with a discussion of trends in cash flows.
- A general business overview based on known trends.

Additional areas include:

- Discussion of significant effects of currently known trends, events, and uncertainties (may voluntarily disclose forward-looking data).
- Liquidity, capital resources, and transactions or events with liquidity implications.
- Discontinued operations, extraordinary items, and other unusual or infrequent events.
- Extensive disclosures in interim financial statements.
- Disclosures of a segment's need for cash flows or contribution to revenues or profit.

Proxy statements are issued to shareholders when there are matters that require a shareholder vote. These statements are a good source of information about the election of (and qualifications of) board members, compensation, management qualifications, and the issuance of stock options.

Other data sources are also available. Remember that corporate reports and other publications are written by management and are often viewed as public relations or sales materials. Not all of the material is independently reviewed by outside auditors. Internet sources of such unaudited information include the company's home page, EDGAR (Electronic Data Gathering Analysis, Retrieval System, www.sec.gov), that contains SEC filings, market data from exchanges, tax, and economic information.

LOS 33.d: Discuss the role of the auditor and the meaning of the audit opinion.

An audit is an independent review of an entity's financial statements. Public accountants conduct the audit, and examine the financial reports and supporting records. The auditor provides an opinion on the fairness and reliability of the financial reports. The independent certified public accountant employed by the board of directors is responsible for seeing that the financial statements conform to GAAP. The auditor examines the company's accounting and internal control systems, confirms assets and liabilities, and generally tries to be confident that there are no material errors in the financial statements. Reading the *auditor's report* is important.

The **standard auditor's opinion** contains three parts stating that:

- Whereas the financial statements are prepared by management and are its responsibility, the auditor has performed an independent review.
- Generally accepted auditing standards were followed, thus providing reasonable assurance that the financial statements contain no material errors.

- The auditor is satisfied that the statements were prepared in accordance with GAAP and that the accounting principles chosen and estimates made are reasonable. The auditor's report must also contain an additional explanation when accounting methods have not been used consistently between periods.

An *unqualified opinion* indicates that the auditor believes the statements are free from material omissions and errors. A *qualified opinion* may be issued if the auditor has concerns about omissions and errors.

The auditor's opinion will also contain an explanatory paragraph when a material loss is probable but the amount cannot be reasonably estimated. These "uncertainties" may relate to the going concern assumption, the valuation or realization of assets, or to litigation. This type of disclosure may be a signal of serious problems and call for closer examination by the analyst.

KEY CONCEPTS

1. Financial statements should serve investors and government, as well as other users such as labor unions, and offer information about the amount, timing, and uncertainty of future cash flows.
2. Accounting statements should be relevant to users, contain reliable figures, and be presented in a timely fashion in order to have predictive value for users.
3. The income statement shows the effects of transactions completed over the period; the balance sheet shows assets, liabilities, and owners' equity at a point in time; and the cash flow statement shows the sources and uses of cash over the period.
4. Other sources of information in a company's financials are the Management Discussion and Analysis, supplementary schedules, and the footnotes to the financial statements.
5. The auditor's opinion gives evidence of an independent review of the financial statements that verifies that GAAP were used and that standard auditing procedures were used to establish that the statements contain no material errors.

CONCEPT CHECKERS: FRAMEWORK FOR FINANCIAL STATEMENT ANALYSIS

1. Interpretation of financial statements is required because the accounting treatment of economic events diverges in all of the following dimensions EXCEPT:
   A. recognition.
   B. timing.
   C. measurement.
   D. class of users.

2. Information about accounting estimates, assumptions, and methods chosen for reporting is *most likely* found in:
   A. the Management Discussion and Analysis.
   B. the auditor's opinion.
   C. the footnotes to the accounting statements.
   D. supplementary schedules.

3. If an auditor has reservations about errors or misstatements in a company's financial statements, she will issue a:
   A. qualification letter.
   B. dissenting opinion.
   C. cautionary note.
   D. qualified opinion.

ANSWERS – CONCEPT CHECKERS: FRAMEWORK FOR FINANCIAL STATEMENT ANALYSIS

1. D In preparing financial statements, choices must be made within the limits of GAAP as to what events to recognize (e.g., off-balance-sheet items), the period that they will be reported in (e.g., revenue recognition), and the amount to be reported (e g., inventory costing method). Financial statements are written for a variety of users but not specifically for one class or another.

2. C Information about accounting methods and estimates is contained in the footnotes to the financial statements.

3. D If an auditor has reservations about errors or misstatements in a company's financial statements, she will issue a qualified opinion.

The following is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

ACCOUNTING INCOME AND ASSETS: THE ACCRUAL CONCEPT

Study Session 7

EXAM FOCUS

The key to this topic review is to recognize the difference between cash basis and accrual basis accounting, and to understand why accrual basis accounting is the standard. On a cash basis, income and deductions are recognized when cash is received or paid. Because the timing of a cash flow could be far removed from the process that generated the cash flow, cash basis accounting is not very useful. Accrual basis accounting follows the matching principle—expenses are recognized in the same period in which the associated revenues are generated. Accrual basis statements are also more relevant to projecting the firm's ability to generate future cash flows. For success on the Level 1 exam, you should be prepared for questions identifying the five methods of revenue recognition, the ways management can manipulate earnings, and the four types of non-recurring items reported on the income statement.

EARNINGS, INCOME, AND ACCRUAL ACCOUNTING

There are many definitions of income. These definitions differ in terms of their use, their measurement, and how they are operationalized.

- *Economic earnings* equal net cash flow plus the change in the market value of the firm's assets. In a world of certainty, with a known interest rate, market values equal the present value of cash flows. Hence, there is a direct relationship between economic income, cash flows, and asset values. However, in the real world, where neither future cash flows nor future interest rates are known with certainty, the concepts and relationships are not so simple. Income, however defined, will only be a proxy for economic income, thus we need other definitions.
- *Distributable earnings* equal the amount of earnings that can be paid out as dividends without changing the value of the firm.
- *Sustainable income* equals the level of income that can be sustained in the future given the firm's stock of capital investment.
- *Permanent income* equals the amount of income that can normally be earned each period given the firm's assets:

$$\text{permanent earnings} = \begin{pmatrix} \text{market value} \\ \text{of firm's assets} \end{pmatrix} \begin{pmatrix} \text{required rate} \\ \text{of return} \end{pmatrix}$$

The financial reporting concept of income, *accounting income*, is quite different. Accounting income is based on the accrual concept and deals with the firm's ability to generate future cash flows.

Accrual vs. cash accounting. The idea behind cash accounting, simply stated, is that revenue or income is recognized when cash is received, and expenses are recognized when the firm pays out cash. The firm's cash flow is measured as cash in less cash out. This method, while intuitive, typically results in highly volatile, less predictable cash flows and income streams and is not desirable for firms with complex operations and financing strategies. It also increases the difficulty of analyzing balance sheets.

Accrual accounting allows us to allocate revenues and expenses to time periods other than those in which the cash flows occurred. One result of accrual accounting is smoothed earnings streams. For example, depreciation is designed to recognize the cost of an asset over its useful life. Depreciating the asset spreads the cost over many periods and reduces profits over the same periods. The alternative under cash accounting is to recognize the expense when cash is paid for the asset. Under cash accounting, profits in the period of purchase will be extremely low. All the subsequent periods will show profits much higher than under accrual accounting. Accrual accounting also has important implications for the balance sheet that will be discussed shortly.

Empirical results suggest that two benefits arising from accrual accounting are: (1) enhanced predictability of future cash flows and (2) given cash flow from operations, accrual accounting provides incremental information related to a firm's profitability. The tradeoff for these benefits is that accrual accounting can be confusing and the recognition of many important transactions and events is left to managerial discretion. The ramification of this discretion is that managers can time the effects of certain transactions in order to manage earnings. We will discuss some of the methods used to manage earnings later in this review. Before proceeding to that discussion, we will discuss the accounting information and how it is presented on the income statement and balance sheet, and the effects of accrual accounting on each of those financial statements.

LOS 34.a: Describe the format of the income statement and discuss the components of net income.

The **income statement** is prepared using the *accrual method*, in which past, present, and future cash flows are recognized as income or expense only during the period that goods and services are provided (revenue) or used (expense). Cash flows may occur before, during, or after revenue or expense is recognized. The differences between recognized income and cash flow are accrued as assets or liabilities.

U.S. Generally Accepted Accounting Principles (GAAP) do not require any particular format for the presentation of the income statement. International Accounting Standards (IAS) GAAP also allow broad flexibility in the presentation of financial statements as long as all required information is provided in the financial statements or the accompanying footnotes. Although formats can and do vary across firms, the following is a generalized design. The items in italics are classified as **components of net income:**

Income Statement Format

	Revenues from the sale of goods and services
–	Operating expenses
	Operating income from continuing operations
+	Other income and revenues
	Recurring income before interest and taxes from continuing operations
–	Financing costs
	Recurring (pretax) income from continuing operations
+/–	Unusual or infrequent items
	Pretax earnings from continuing operations
–	Income tax expense
	Net income from continuing operations
+/–	Income from discontinued operations (reported net of tax)
+/–	Extraordinary items (reported net of tax)
+/–	Cumulative effect of accounting changes (reported net of tax)
	Net income

Professor's Note: This topic review will use the terms "above the line" and "below the line." The "line" referred to is the subtotal "net income from continuing operations." Items reported "above the line" do not include a tax impact; items reported "below the line" are net of taxes.

The components of net income can be described in the following ways:

Operating income from continuing operations includes revenues from the continuing businesses of the firm less the costs and expenses associated with those revenues. It is independent of the company's capital structure because it does not yet reflect the charges related to the cost of debt capital; namely, interest expense. At this point, we can characterize this income as belonging to three parties: creditors, the government, and the shareholders. Most income statements divide operating expenses into two parts: cost of goods sold, which is the cost of manufacturing or purchasing products; and the remaining expenses, which include selling, general, administrative, and research expenses. Revenues less the cost of goods sold (COGS) is referred to as gross profit. Firms frequently report COGS and gross profit as separate line items appearing before operating income on the income statement.

Recurring income before interest and taxes from continuing operations includes recurring income resulting from other activities, including investment income from unconsolidated subsidiaries or other investments and gains (or losses) from sales of assets. In the typical income statement, this means segregating the results of normal, recurring operations from the effects of "nonrecurring" or "extraordinary" items in order to improve the forecasting of future earnings and cash flows. The idea here is that *recurring income is persistent.*

Recurring (pre-tax) income from continuing operations is net of financing costs. Note that this income stream is now a function of the capital structure. If a firm is borrowing liberally or if the cost of borrowing is high, then, all else equal, recurring income from continuing operations will be relatively lower and vice versa. Once the interest payments have been accounted for, only the government and the shareholders have claim to the remaining income. Because analysts seek data with predictive characteristics, *recurring income from continuing operations is generally considered to be the best indicator of future earnings.*

Pretax earnings from continuing operations include unusual or infrequent items, which will be discussed in more detail later.

Net income from continuing operations includes the impact of taxes. At this point, the government takes its share of the income and any remaining income belongs to the shareholders.

Net income includes income from discontinued operations, extraordinary items, and the cumulative effect of accounting changes. Note that all of these adjustments to income are made net of tax. Each of these adjustments will be discussed in more detail later.

LOS 34.b: Describe the criteria for revenue and expense recognition and discuss major issues in revenue and expense recognition including the affect on reported earnings and their implications for financial analysis.

Accounting for revenues and expenses is based on the **matching principle**, which states that revenues and expenses incurred to generate those revenues must be accounted for in the same time period. This is important because it makes operating income a better indicator of how much income the firm was able to generate over the period in question.

The Requirements for Revenue Recognition

There are two requirements for **revenue recognition** to occur: (1) completion of the earnings process and (2) reasonable assurance of payment.

Completion of the earnings process. The firm must have provided virtually all of the goods or services for which it is to be paid, and the expected cost of providing the service must be measurable. In most cases, these costs are measurable. In situations where there are contingent costs of completing the sale and those costs are not measurable, recognition of revenue is deferred until the costs become measurable.

For longer-term projects where cost of sales expenditures span accounting periods, the amount of cumulative revenue that can be recognized is calculated by:

$$\left(\frac{\text{cost of goods provided to date}}{\text{total cost of goods to be provided}}\right)\left(\begin{array}{c}\text{total expected}\\ \text{revenue}\end{array}\right)$$

Assurance of payment. The company must be able to estimate the probability of payment. If the seller cannot reasonably estimate the probability of payment (or nonpayment), this second condition is not met because realization is not reasonably assured.

Specific methods of recognizing revenue are discussed later in this topic review.

Appropriate Revenue Recognition Method Based on the Status of the Earning Process and the Assurance of Payment

There are five revenue recognition methods:

- The *sales basis method* is the most common, and most businesses generate revenue under these assumptions. The sales basis method is the standard to which we will compare all other methods.
- The *percentage-of-completion method* approximates the sales basis method and is a logical extension of the sales basis method for long-term contracts. It is designed to measure current operating performance.
- The *completed contract method* is more conservative than the percentage-of-completion method—revenues will lag those of the percentage-of-completion method. Also, income will be less stable under the completed contract method than under the percentage-of-completion method. It is impossible to gauge the profitability of long-term contracts using the income statement—an analyst must rely on the statement of cash flows.
- The *installment method* is similar to the percentage-of-completion method in how it accounts for earnings in stages. Nonetheless, it still lags the sales basis method, and an analyst must compare the cash flow statement with the income statement to fully understand the future profitability of the company.
- The *cost recovery method* is similar to the completed contract method (in the same manner that the installment method is similar to the percentage-of-completion method) in that profit is not recognized until all aspects of the sale (revenues and costs) are made. An analyst must rely on the cash flow statement for some measure of sales profitability.

If a *firm recognizes revenue prior to fulfilling the two conditions for revenue recognition*, then its *current assets* will be *overstated* (overstatement of accounts receivable at sales price less the understatement of inventory at cost). Its *retained earnings* will also be *overstated* by the net income that should not have been recorded.

The choice of which recognition method should be used is dependent upon two factors: the status of completion of the earnings process and the assurance of payment.

Implications for Financial Analysis of Different Revenue Recognition Methods

Professor's Note: I list the five methods of revenue recognition here to highlight the roles of completion of the earnings process and assurance of payment in determining how longer-term contracts are reported in the financial statements. More detail on the completed contract and percentage-of-completion methods are covered in the next LOS.

1. Under the sales basis method, goods or services are provided when the sale is made, and the sale is for cash or credit to a customer with a high probability of repayment.

   If cash is received before goods or services are provided, the revenue is not recognized until it is earned. Examples of this include:

   - Revenue from the sale of magazines is not recognized until delivery.

- Credit card fees received in advance are not revenue until time passes.
- Money received from equipment leases based on usage is not revenue until the equipment is used.

In each of these cases, revenue is not recognized until it is earned and cash collection is assured. The cost of the goods or services will be recognized as expense only when its corresponding revenue is recorded.

2. The **percentage-of-completion method** is used for long-term projects when there is a contract and there are reliable estimates of the revenues, costs and completion time. It recognizes revenues (and corresponding costs) in proportion to the work completed. There are two methods that can be used to measure the proportion of work completed:

   - An engineering estimate or physical milestone.
   - The ratio of incurred costs to the total estimated cost—even if the total estimated cost has changed.

3. The **completed contract method** is used for long-term projects when there is no contract or estimates of revenues or costs are unreliable. In this method, revenues and expenses are not recognized until the entire project has been completed. The completed contract method must be used for short-term contracts as well.

4. The **installment sales method** is used when there is no way to estimate the likelihood of collecting the sales proceeds, but the costs of the goods and services are known. It recognizes sales and cost of goods sold as proportions of cash collected each period, based on the gross profit margin.

5. The **cost recovery method** is used when the costs to provide goods or services are not known or when there are uncertainties surrounding the collection of the proceeds from the sale. Under this method, sales are recognized when cash is received, but no gross profit is recognized until the seller's cost of goods is fully recovered by buyer's cash payments.

LOS 34.c: Compare the percentage-of-completion method with the completed contract method and contrast the effects of the two methods on the income statement, balance sheet, statement of cash flows and selected financial ratios.

The **percentage-of-completion method** is used when ultimate payment is assured and revenue is earned as costs are incurred. If, however, a reliable estimate of the total costs of the contract does not exist, the amount of profit cannot be determined until the contract is finished. In this situation, the **completed contract method** should be used. The percentage-of-completion method recognizes revenue and income earlier than the completed contract method. Hence, the percentage-of-completion method generally is viewed as a better predictor of trends in earnings power.

The effect of using the different revenue recognition methods for long-term contracts on financial statements is illustrated in the following example. Assume that AAA Construction Corp. has a contract to build a ship for $1,000 while a reliable estimate of the contract's total cost is $800. Assume further that the project produces the year-end billings, collections, and incurred costs shown in Figure 1.

Figure 1: AAA Contract Estimates

	2004	*2005*	*2006*	*Total*
Amounts billed	$600	$200	$200	$1,000
Cash received	$400	$400	$200	$1,000
Cost incurred	$400	$300	$100	$800

In 2004, since one-half of the total contract cost has been incurred ($400/$800), one-half of the total revenue is recognized under the percentage-of-completion method [(1/2)($1,000) = $500]. Under the percentage-of-

completion method, expenses are $400, and the resulting net income in 2004 is $100. Under the completed contract method, revenue, expenses, and income are not recognized until the contract is completed and the title is transferred. Let's look more carefully at the balance sheet under both methods, shown in Figures 2 and 3.

Figure 2: AAA Balance Sheet Using Percentage-of-Completion

Balance Sheet (cumulative)	2006	2005	2004
Cash (asset)[1]	$200	100	0
Accounts receivable (asset)[2]	0	0	600 – 400 = 200
Memo: Construction-in-progress year-end balance (not shown explicitly on the balance sheet – netted with advance billings)[3]	0	700 + [(7/8) × 200] = 875	400 + [(4/8) × 200] = 500
Net construction-in-progress (asset)	0	875 – 800 = 75	0
Total assets	$200	175	200
Memo: Advance billings year-end balance (not shown explicitly on the balance sheet – netted with construction-in-progress)[4]	$0	800	600
Net advance billings (liability)	0	0	600 – 500 = 100
Total liabilities	$0	0	100
Retained earnings (equity)[5]	200	[7/8 × 200] = 175	[4/8 × 200] = 100
Total liabilities and equity	$200	175	200

Notes:

1. Cash: In 2004, cash received and costs incurred are equal. Hence, the cash balance is zero. In 2005, cash receipts exceed cash costs by $100, and in 2006, receipts exceed costs once again by $100 for a total cash balance of $200.

2. Accounts receivable: In 2004, amounts billed exceed cash received by $200 for an accounts receivable of $200. In 2005, this reverses as cash received exceeds amounts billed by $200. This results in a zero A/R balance at the end of 2005.

3. Construction-in-progress represents the costs incurred plus the cumulative pro rata share of gross profit. For 2004, this amount is $500 [$400 of costs incurred plus ($400/$800) times the estimated gross profit of the contract ($1,000 – $800)]. The pro rata share is computed as costs incurred to date divided by total estimated costs. For 2005, construction-in-progress is $700 of cumulative cost incurred plus ($700/$800) × $200 = $875.

4. Advance billings are also cumulated over the project's life. A key for the exam is to know that *construction-in-progress and advance billings are netted.* What does this mean? This means that the amount of cumulative construction in progress minus cumulative advance billings is posted to the financial statements. If this number is positive, then an asset called "construction-in-progress" is shown on the assets side of the balance sheet. If this number is negative, then a liability called "advance billings" is shown on the liabilities side. In 2004, construction-in-progress was $500, and advance billings were $600. Since $500 – $600 is a negative number, $100 is posted to the liabilities side of the balance sheet under "advance billings." In 2005, construction-in-progress was $875 while advance billings totaled $800. Since the difference between these values is positive, $75 is posted to the assets side of the balance sheet under "construction-in-progress."

5. Retained earnings represents the cumulative share of total gross profit to date. Calculate this value by taking total costs to date divided by total estimated costs and applying this to the total estimated gross profit.

Professor's Note: As we will soon see, cash and accounts receivable are the same under both methods. As we work through the completed contract method, focus on the differences in how construction-in-progress and retained earnings are calculated.

Figure 3: AAA Balance Sheet Using the Completed Contract Method

Balance Sheet (cumulative)	2006	2005	2004
Cash (asset)[1]	$200	100	0
Accounts receivable (asset)[2]	0	0	600 – 400 = 200
Memo: Construction-in-progress year-end balance (not shown explicitly on the balance sheet – netted with advance billings)[3]	0	700	400
Net construction-in-progress (asset)	0	0	0
Total assets	$200	100	200
Memo: Advance billings year-end balance (not shown explicitly on the balance sheet – netted with construction-in-progress)	$0	800	600
Net advance billings (liability)[4]	0	800 – 700 = 100	600 – 400 = 200
Total liabilities	$0	100	200
Retained earnings (equity)[5]	200	0	0
Total liabilities and equity	$200	100	200

Notes:

1. Cash: In 2004, cash received and costs incurred are equal. Hence, the cash balance is zero. In 2005, cash receipts exceed cash costs by $100, and in 2006, receipts exceed costs once again by $100 for a total cash balance of $200. This is the same as when using the percentage-of-completion method.

2. Accounts receivable: In 2004, amounts billed exceed cash received by $200 for an accounts receivable of $200. In 2005, this reverses as cash received exceeds amounts billed by $200. This results in a zero A/R balance at the end of 2005, same as when using the percentage-of-completion method.

3. Under the completed contract method, construction-in-progress does not include the cumulative effect of gross profit recognition. Or, to think of this another way, the calculation is the same as before, only no gross profit is recognized until the end of the project's life.

4. The *netting of construction-in-progress and advance billings* still occurs under the completed contract method. However, since gross profit is not recognized until the end of the contract's life, liabilities will most likely be greater (or assets less) under the completed contract method compared to the percentage-of-completion method.

5. As before, retained earnings represents the cumulative share of total gross profit to date. Since there is no profit recognition until the end of the contract, the balance of retained earnings is zero until the final year of the contract.

Note that several of the balance sheet items are identical for both revenue recognition methods during the course of the contract. Under both methods, at the end of the contract only cash and retained earnings are listed on the balance sheet.

The example also illustrates that the earnings trend under the completed contract method is more volatile. This is because the completed contract method does not recognize profit until the completion of the contract. This volatility would make the analysis of the cash flow statement (especially cash flow from operations which is unchanged by the revenue recognition method used) very important in assessing the recurring profitability of the firm.

If a firm has several long-term contracts that are completed uniformly over many periods, the time trend of net income under the completed contract method would be much less volatile.

Differences in Cash Flows and Selected Items and Ratios

The table in Figure 4 allows you to compare the financial effects on companies using either of the methods in the periods *before* the construction project is completed:

Figure 4: Financial Component Impacts (during the project)

	Percentage-of-Completion	*Completed Contract*
Cash flows	Same	Same
Net income	Greater—% of profit is recognized	Less—none until final year
Income volatility	Less—some recognized each year	Greater—all at completion
Total assets	Greater—% of profit recognized	Less—no profit until complete
Construction in progress account	Greater—profit included in construction in progress	Less
Amounts billed	Same	Same
Net [construction in progress minus advance billings]	Greater (greater assets or smaller liability)	Less (greater liability or smaller assets)
Shareholder equity	Greater	Less
Ratio of liabilities-to-equity and liabilities-to-assets	Less	Greater

In the percentage-of-completion method, any net construction-in-progress is considered a *current asset*. Thus, this accounting method affects only current assets. Long-term assets are not affected by the selection of the percentage-of-completion or completed contract methods.

LOS 34.d: Describe the types and analysis of unusual or infrequent items, extraordinary items, discontinued operations, accounting changes, and prior period adjustments.

Unusual or infrequent items. The definition of these items is obvious from the title—these events are either unusual or infrequent in occurrence but not both unusual and infrequent. Examples of unusual or infrequent items include:

- Gains or losses from the disposal of a portion of a business segment (e.g., employee separation costs, plant shutdown costs).
- Gains or losses from the sale of assets or investments in subsidiaries.
- Provisions for environmental remediation

- Impairments, write-offs, write-downs, and restructuring costs.
- Integration expenses associated with businesses that have been recently acquired.

Unusual or infrequent items are reported pre-tax before net income from continuing operations (i.e., above the line).

Analytical implications: Even though unusual or infrequent items do affect net income from continuing operations, an analyst may want to review them to determine whether they should truly be included when forecasting future income. It is important for the analyst to distinguish among recurring items that have no cash flow effect, affect only current period cash flow, and affect future cash flow.

Moreover, management often buries these items in other income or includes them as operating expenses, so an analyst should try to find these items and segment them out to find out the true measure of recurring income. A careful reading of the Management Discussion and Analysis (MD&A) and footnotes will facilitate the identification of these items and help an analyst determine their impact on future performance and profitability.

Extraordinary items. This definition is similar to unusual or infrequent items, except extraordinary items are events that are *both* unusual *and* infrequent in occurrence, and material in nature. Examples of these include:

- Losses from expropriation of assets.
- Gains or losses from early retirement of debt (when it is judged to be both unusual and infrequent).
- Uninsured losses from natural disasters that are both unusual and infrequent.

Extraordinary items are reported net of tax after net income from continuing operations (i.e., below the line).

Analytical implications: Although extraordinary items do not impact net income from continuing operations, an analyst may want to review them to determine whether some portion should be included when forecasting future income. Some companies appear to be accident prone and have extraordinary losses every year.

Discontinued operations. A discontinued operation is one that management has decided to dispose of but either has not yet done so or did so in the current year after it had generated income or losses. To be accounted for as a discontinued operation, the business—in terms of assets, operations, and investing and financing activities—must be physically and operationally distinct from the rest of the firm.

The date when the company develops a formal plan for disposing of an operation is referred to as the *measurement date*, and the time between the measurement period and the disposal date is referred to as the *phaseout period*. The income or loss from discontinued operations is reported separately, and past income statements must be restated, separating the income or loss from the discontinued operations. On the measurement date, the company will accrue any estimated loss during the phaseout period and any estimated loss on the sale of the business. Any expected gain on the disposal cannot be reported until after the sale is completed.

Income and losses from discontinued operations are reported net of tax after net income from continuing operations (i.e., below the line).

Analytical implications: The analysis is straightforward. Discontinued operations do not affect net income from continuing operations. The actual event of discontinuing a segment or selling assets may provide information about the future cash flows of the firm.

Accounting changes. There are two types of accounting changes: (1) a *change in an accounting principle* and (2) a change in *an accounting estimate*.

A *change in accounting principle* refers to the change in one GAAP method to another GAAP method; for example, a change in method of inventory accounting from LIFO to FIFO. When a change in accounting principle is made, the firm is required to restate the financial statements to reflect the change. The impact of the

change in method on prior period earnings is typically recorded net of tax after net income from continuing operations (below the line) on the current year's income statement. However, in certain cases it may be reported directly in the current year's retained earnings account.

The cumulative effect on prior period earnings resulting from a change in accounting methods is reported on an after-tax basis below the line. In general, prior years' financial statements do not need to be restated unless the change involves one of the following:

- A change in inventory accounting method from LIFO to another method.
- Change to or from the full-cost method [full cost or successful efforts accounting is typically used in oil and gas exploration and relates to the capitalization (full cost) versus expensing (successful efforts) of well-drilling activities].
- Change to or from the percentage-of-completion revenue recognition method.
- Any change just prior to an initial public offering.

For example, if a firm changes from LIFO to FIFO in 2006, then the 2005 financial statements must be restated using FIFO. The impact of the change in method on prior period earnings is recorded net of tax (below the line).

Generally, a change in *accounting estimate* is the result of a management change in judgment, usually due to gaining new information. For example, management may change the estimated useful life of an asset because new information indicates the asset has a longer life than originally thought. A change in estimate does not require the restatement of prior financial statements.

Analytical implications: Any impact of prior period income resulting from an accounting change does not affect net income from continuing operations. Accounting changes typically do not affect cash flow. An analyst should review any accounting change to determine whether it might have an impact on future operating results.

Prior-period adjustments. A change from an incorrect accounting method to one that is acceptable under GAAP (correction of an accounting error) is reported as a *prior period adjustment.* Adjustments are typically reported in net income, but in some cases are made directly to retained earnings. Disclosure of the error's nature and its effect on net income is required.

Analytical implications: Because they deal with accounting errors, prior period adjustments will typically not affect cash flow. Analysts should review adjustments to determine whether they might have an impact on future operating results.

LOS 34.e: Discuss managerial discretion in areas such as classification of good news/bad news, income smoothing, big bath behavior and accounting changes, and explain how this discretion can affect the financial statements.

A weakness of accrual accounting is that it is subject to management discretion, and a company can use that discretion to manipulate earnings. There are two different types of discretion: the timing of the occurrence and the classification of the item. Earnings manipulation can be classified into four categories.

Classification of good news/bad news. Analysts tend to focus on net income from continuing operations because it tends to be the best indicator of future earnings. Hence, companies prefer to put good news items in categories that will appear above the line of net income from continuing operations and bad news items below the line of net income from continuing operations (i.e., in income from discontinued operations or extraordinary items). Consider the sale of a subsidiary as an example of selective classification. If a subsidiary is sold for a profit, it is likely to appear above the line. If it is sold at a loss, management may seek to define the subsidiary as a discontinued operation and report the loss below the line.

Income smoothing. Firms try to reduce earnings in good years and increase earnings in bad years to make earnings appear to be more stable than they would be otherwise. There are two types of smoothing:

- *Intertemporal smoothing* occurs when a company either alters the timing of expenditures or chooses accounting methods that smooth out earnings. For example, timing expenditures (e.g., repairs or R&D) or choosing between capitalization and expensing can facilitate earnings smoothing.
- *Classification smoothing* occurs when an item is reported in a category above or below the line (that either will or will not impact net income from continuing operations) in order to smooth earnings. As observed earlier, classification of asset sales are an example of this form of earnings smoothing. Some recent studies have focused on income smoothing as a means for companies to meet (or beat by a penny) analysts' earnings expectations. Results indicate that managers tend to manage earnings upward to avoid missing analyst forecasts.

Big bath behavior. When firms are already having a bad year, they try to recognize all potential expenses and losses and report all of their bad news at one time. From management's perspective, this behavior may produce two benefits. First, most of the bad news will be reported below the line. If the investing community is focused on above-the-line performance, big bath behavior will minimize the impact of the bad news. Second, following the reporting of the bad news, the firm will appear to be more profitable going forward and may be rewarded for improved accounting performance even though there may be no improvement in economic performance.

Accounting changes. Firms will use accounting changes to smooth earnings (e.g., changing the inventory cost-flow assumption, the capitalization versus expensing decision, or depreciation methodology). Because these accounting changes can have a material impact on earnings while producing no impact on cash flows, they are seen as a means to manipulate reported earnings and should become the focus of analysis.

LOS 34.f: Describe the format and the components of the balance sheet and the format, classification, and use of each component of the statement of stockholders' equity.

The **balance sheet** reports three main categories of accounts: *assets*, which are the resources of the company; *liabilities*, which are the claims against those assets; and *stockholders' equity*, which is the difference between the value of the assets and the liabilities. With the exception of marketable securities, balance sheet items are reported at historical cost, although in some cases, an impairment (damage) of an asset or a specific rule requiring the lower of cost or market value may require a write-down. Accounts that are denominated in a foreign currency are translated to the local currency using the prevailing exchange rate on the financial statement date.

The value of assets and liabilities must be subject to reasonable measurement to be included on the balance sheet. Examples of assets omitted from the balance sheet include brand names, customer lists, and future benefits from R&D investment, which is expensed rather than capitalized. An example of a hard-to-measure liability that may not be presented on the balance sheet is the potential losses related to legal action against the firm. However, this liability may be disclosed in a footnote. Thorough analysis should include consideration for the effects of assets and liabilities not found on the balance sheet.

Assets are divided into two groups, current and long-term, according to their liquidity.

Current assets are assets that are expected to be converted into cash within one year and are listed first. Within the current assets section, assets are listed in the order of their liquidity. They include:

- *Cash and cash equivalents.* Risk-free securities with original maturities of 90 days or less.
- *Marketable securities.* Includes equity securities (trading securities) which are carried at market value, and fixed-income securities, which are carried at cost or amortized value.
- *Accounts and notes receivable.* Trade accounts receivable, which are part of the sales process, should be analyzed separately from notes receivable. Accounts receivable often have an allowance for bad debt expense as a contra-asset account.

- *Inventories.* Analysts should focus on the accounting method used to value inventory.
- *Prepaid expenses.* Items that will show up on future income statements as expenses.
- *Deferred taxes.* Although these are usually liabilities, deferred taxes occasionally show up as assets.

Long-term assets provide benefits or services over periods exceeding one year. Tangible assets are typically reported before intangible assets. Long-term assets include:

- *Property, plant, and equipment.* Includes a contra-asset account for accumulated depreciation. It also should include capital leases.
- *Investment in affiliates.* The investment in and advances to affiliates.

Liabilities are also divided into two groups, current and long-term, according to liquidity.

Current liabilities are liabilities that are expected to be paid within the next year. Within the current liabilities section, they are listed in order according to when they come due. Current liabilities include:

- *Accounts and notes payable.* Trade accounts payable are part of the operating cycle, while notes payable represent a financing decision.
- *Income taxes payable.* The taxes accrued during the past year but not yet paid.
- *Current portion of long-term debt and capital lease obligations.* The part of these long-term instruments that is due within the next year.

Long-term liabilities are liabilities that are expected to be paid after the next year. They include:

- *Long-term debt* and *capital lease obligations.*
- *Deferred taxes.* Deferred taxes are the cumulative difference between what the income statement has reported as income taxes and what the company has paid in taxes. The difference usually arises because of differences between the accounting methods used for financial reporting and tax filing.

Stockholders' equity includes owners' investment, retained earnings, and various adjustments. Equity components are listed in the order of priority in the event of liquidation. There is a separate statement of stockholders' equity that presents a more detailed breakdown of the accounts than what appears on the balance sheet.

Sample balance sheet. Figure 5 presents a sample balance sheet to provide you with a feel for the format of the balance sheet.

Figure 5: Sample Balance Sheet

Assets		Liabilities and Owners' Equity	
Current assets		Current liabilities	
Cash and cash equivalents	$300,000	Accounts & notes payable	$200,000
Marketable securities	200,000	Income taxes payable	100,000
Accounts and notes receivable	300,000	Current portion of long-term debt	100,000
Inventories	100,000	Unearned revenue	50,000
Prepaid expenses	50,000	Miscellaneous other payables	50,000
Deferred taxes	25,000		
Miscellaneous current assets	25,000	Total current liabilities	$500,000
Total current assets	$1,000,000	Long-term debt	$2,500,000
		Capital lease obligations	400,000
Plant, property, and equipment	$2,000,000	Deferred taxes	100,000
Investment in affiliates	1,500,000		
Other fixed assets	500,000	Total other liabilities	$3,000,000
Total other assets	$4,000,000	Owners' Equity	
		Preferred stock	$900,000
Total assets	$5,000,000	Common stock	250,000
		Retained earnings	250,000
		Other equity items	100,000
		Total owners' equity	$1,500,000
		Total liabilities and owners' equity	$5,000,000

The Components of the Statement of Stockholders' Equity

The **components of the statement of stockholders' equity** include:

- *Preferred stock.* Various elements of the preferred stock must be disclosed, including the rights to dividends (whether they are fixed, floating, cumulative, or tied to common stock dividends), and any call or conversion provisions. If preferred stock is redeemable by the holder, then it is to be excluded from the shareholders' equity section and reported immediately after the liabilities section.
- *Common stock.* The company must separate out the different classes of common stock. Common stock is reported at par value. Proceeds from common stock sales above par value are reported as additional paid-in capital. Treasury stock is a contra-account, representing share repurchases that the company has made.
- *Retained earnings.* Both the beginning and ending balance of retained earnings are reported, as well as net income for the year and preferred and common dividends paid.
- *Other items.* These might include a minimum liability for underfunded pension plans, market value changes in noncurrent investments, cumulative effect of exchange rate changes, and unearned shares issued to employee stock ownership plans.

Figure 6 shows the consolidated changes in common shareholders' equity for the Washington Post Company (WPC) for the period December 30, 2001 through December 29, 2002.

Figure 6: WPC Consolidated Changes in Common Shareholders' Equity

	Class A Common Stock	*Class B Common Stock*	*Capital in Excess of Par Value*	*Retained Earnings*	*Cumulative Foreign Currency Translation Adjustment*	*Unrealized Gain on Available-for-Sale Securities*	*Treasury Stock*
Balance, December 30, 2001 (in thousands)	$1,722	$18,278	$142,814	$3,029,595	$(9,678)	$24,281	$(1,523,527)
Net income for the year				204,268			
Dividends paid on common stock: $5.60 per share				(53,223)			
Dividends paid on redeemable preferred stock				(1,033)			
Repurchase of 1,229 shares of Class B common stock							(786)
Issuance of 17,156 shares of Class B common stock, net of restricted stock award forfeitures			4,440				2,507
Change in foreign currency translation adjustment (net of taxes)					2,167		
Change in unrealized gain on available-for-sale securities (net of taxes)						(6,368)	
Stock option expense			45				
Tax benefits arising from employee stock plans			1,791				
Balance, December 29, 2002 (in thousands)	1,722	18,278	149,090	3,179,607	(7,511)	17,913	(1,521,806)

Let's look more closely at the changes from 2001 to 2002. The Washington Post's statement of shareholders' equity lists the transaction affecting equity on the left-hand side of the statement, and then records the amount by the components of the statement of stockholders' equity. For instance, issuance of 17,156 shares of Class B common stock affected the balance of Capital in Excess of Par Value ($4,440) and Treasury Stock ($2,507).

Let's look at the common shareholders' equity section of the Washington Post's balance sheet (shown in Figure 7) to illustrate how the statement of shareholders' equity supports the balance sheet.

Figure 7: Washington Post Company—Partial Balance Sheet

Common Shareholders' Equity	December 29, 2002	December 30, 2001
Common Stock		
Class A common stock, $1 par value; 7,000,000 shares authorized; 1,722,250 shares issued and outstanding	$1,722	$1,722
Class B common stock, $1 par value; 40,000,000 shares authorized; 18,277,750 shares issued and 7,788,543 and 7,772,616 shares outstanding	18,278	18,278
Capital in excess of par value	149,090	142,814
Retained earnings	3,179,697	3,029,595
Accumulated other comprehensive income (loss), net of taxes		
Cumulative foreign currency translation adjustment	7,511	(9,678)
Unrealized gain on available-for-sale securities	17,913	24,281
Cost of 10,489,207 and 10,505,134 shares of Class B common stock held in treasury	(1,521,806)	(1,523,527)
	1,837,293	1,683,485

Note how each of the balance sheet components is supported by a calculation of the changes in the statement of shareholders' equity. The statement of owners' (or stockholders') equity is a valuable source of information for the financial analyst providing detail on changes during the year affecting a firm's equity position.

Also notice that while 7,000,000 shares of the Class A common are authorized, only 1,722,250 are issued and outstanding. At one time there were 18,277,750 shares of Class B common stock outstanding. The par value of these shares has remained, and as shares have been repurchased (now held in treasury), only the capital in excess of par value (additional paid-in capital) has changed. Notice the other categories that include items that have not passed through the income statement: adjustment for losses on foreign currency translation and unrealized gains on securities classified as available-for-sale securities.

KEY CONCEPTS

1. The income statement has several components, the most important being recurring income from continuing operations because it gives the best indicator of future earnings.
2. The matching principle states that revenues and the expenses incurred to generate those revenues should be accounted for in the same time period.
3. Revenue is recognized when two conditions are met: (1) the firm has provided virtually all of the goods or services for which it is to be paid, and (2) the company is able to estimate the probability of payment.
4. There are five specific methods by which revenue is recognized:
   - Sales basis method—earnings process complete and revenue assured.
   - Percentage-of-completion method—earnings process incomplete, costs estimable, and revenue assured.
   - Completed contract method—earnings process incomplete, but either costs inestimable or revenue not assured.
   - Installment sales method—earnings process complete and revenue not assured.
   - Cost recovery method—earnings process complete but contingencies of unknown cost exist.
5. Construction-in-progress under percentage-of-completion represents cumulative costs plus cumulative gross income. Under the completed contract method, construction-in-progress is only the cumulative project costs.

6. Prior to completion, a company using the percentage-of-completion method will have greater total assets, greater shareholder equity, and lower liabilities than a company that uses the completed contract method. Cash flows are the same under each method.
7. Advance billings represent the amounts that have been billed to the client on a cumulative basis prior to the completion of the project. Construction-in-progress (CIP) and advance billings (AB) are netted in the computation of the balance sheet asset or liability. If CIP – AB > 0, then a current asset is posted. If CIP – AB < 0, then a liability is posted.
8. There are four nonrecurring items in the income statement:
   - Unusual or infrequent items.
   - Extraordinary items.
   - Income or loss from discontinued operations.
   - Cumulative effect of accounting changes.

   Analysts should be careful when forecasting income to only include items that are likely to recur in the future.
9. There are four ways in which management can manipulate earnings:
   - Classification of good and bad news.
   - Income smoothing.
   - Big bath technique.
   - Accounting changes.
10. The balance sheet reports three main categories of accounts: assets, which are the resources of the company; liabilities, which are the claims against those assets; and stockholders' equity, which is the difference between assets and liabilities.
11. The components of the statement of stockholders' equity include preferred stock, common stock, retained earnings, and treasury stock.

CONCEPT CHECKERS: ACCOUNTING INCOME AND ASSETS: THE ACCRUAL CONCEPT

1. Which of the following statements about accrual accounting is FALSE?
   A. Net income before taxes is considered the best indicator of future earnings.
   B. The completed contract method produces more volatile earnings than does the percent-of-completion method.
   C. Revenue should be recognized when the earnings process is complete, costs can be reliably determined, and payment is assured.
   D. Under the accrual concept, revenue is recognized when the earnings process is completed and ultimate realization is assured.

2. Accounting income could be *best described* as being based on the:
   A. firm's economic rate of return adjusted for risk.
   B. cash flows occurring during the accounting period.
   C. firm's current and probable future cash collections and expenses.
   D. matching of expenses with the revenues generated by those expenses.

3. Which of the following is NOT necessary to recognize revenue?
   A. Revenue and expenses must be estimable or measurable.
   B. The activity must be substantially complete and ownership must have been transferred.
   C. The transaction must be an arm's length transaction with an independent party.
   D. The transaction must be either for cash or in the company's main line of business.

4. Which principle requires that the cost of goods sold be recognized in the same period in which the sale of the related inventory is recorded?
   A. Accrual.
   B. Certainty.
   C. Matching.
   D. Economic.

5. Revenues that are collected in the same accounting period as the time of sale should be accounted for using the:
   A. sales basis method.
   B. installment sales method.
   C. completed contract method.
   D. percentage-of-completion method.

6. A difference between the percentage-of-completion method and the completed contract method is:
   A. interim equity is lower under the completed contract method.
   B. income is reported earlier under the percentage-of-completion method.
   C. sales and net income are more volatile under the completed contract method.
   D. all of the above.

Use the following data to answer Questions 7 and 8.

AAA has a contract to build a building for $100,000 with an estimated time to completion of three years. A reliable cost estimate for the project would be $60,000. In the first year of the project, AAA incurred costs totaling $24,000.

7. Under the percentage-of-completion method, AAA will report a first-year profit of:
   A. $16,000.
   B. $36,000.
   C. $40,000.
   D. $76,000.

8. Under the completed contract method, AAA will report a first-year profit of:
   A. $0.
   B. $16,000.
   C. $36,000.
   D. $40,000.

9. All of the following items are reported net of taxes below net income from continuing operations on the income statement EXCEPT:
   A. extraordinary items.
   B. unusual or infrequent items.
   C. income from discontinued operations.
   D. the cumulative effect of accounting changes.

10. Which of the following would *least likely* be classified as an extraordinary item?
   A. Uninsured losses from earthquakes.
   B. Expropriations by a foreign government.
   C. Losses from the early retirement of debt.
   D. Losses from the disposal of a business segment.

11. Which of the following statements about nonrecurring items is FALSE?
   A. Cumulative effects resulting from a change in the accounting method for inventory are reported in the cost of goods sold.
   B. Unusual or infrequent items are reported before taxes above net income from continuing operations.
   C. A change in accounting principle is reported in the income statement net of taxes after extraordinary items and before net income.
   D. Gains or losses from extraordinary items and discontinued operations are reported net of taxes at the bottom of the income statement before net income.

12. Which of the following statements about accounting for revenues or costs under the percentage-of-completion method is TRUE?
   A. All current and estimated future costs are charged off as an expense in the first year of the project.
   B. The costs that can be charged against income are calculated by multiplying the total estimated cost by the proportion of revenues paid thus far to the total estimated revenues.
   C. Revenues can be recognized based on engineering estimates of the proportion of work completed.
   D. No costs can be charged off until all revenues are received.

13. Which of the following statements about stockholders' equity is FALSE?
A. The statement of stockholders' equity lists ownership interest in order of payment preference upon liquidation of the firm.
B. Retained earnings are the total earnings of the company since its inception less all the dividends ever paid out.
C. Common stock is listed at its sale price with the excess over par listed in a contra account called additional paid-in capital.
D. Preferred stock receives dividends and any cash during liquidation before common shareholders.

14. In the case of long-term contracts, the method prescribed when there is a contract for the goods and it is possible to reliably estimate revenues and costs is the:
A. installment method.
B. percentage-of-completion method.
C. cost recovery method.
D. completed contract method.

15. Which of the following would NOT be found in the statement of stockholders' equity?
A. Extraordinary items.
B. The cumulative effect of exchange rate changes.
C. The minimum liability for underfunded pension plans.
D. The changes in the market value of noncurrent investments.

16. Which of the following choices is NOT a common method used by management to manipulate earnings?
A. Make losses appear to be extraordinary so that they will not affect income from continuing operations.
B. Adjust the timing of costs so that earnings are increased in bad years and decreased in good years, thereby smoothing earnings.
C. Adjust the timing of costs so that earnings are further decreased in bad years.
D. Make financing costs appear to be operating expenses, so that they will not affect net income from continuing operations.

17. Under which revenue recognition method is income the *poorest* measure of the future earning power of the company, requiring an analyst to use the cash flow statement to gain an understanding of the operating process?
A. Sales basis method.
B. Percentage-of-completion method.
C. Completed contract method.
D. Installment sales method.

18. When accounting for long-term projects, which revenue recognition method should be used when the revenues are paid up front, but the costs, which can be estimated, will be incurred over the next three years?
A. Sales basis method.
B. Percentage-of-completion method.
C. Completed contract method.
D. Installment sales method.

19. When accounting for long-term projects, which revenue recognition method should be used when the revenues are paid up front, but the costs are highly uncertain and will be incurred over the next three years?
A. Sales basis method.
B. Percentage-of-completion method.
C. Completed contract method.
D. Installment sales method.

20. Which revenue recognition method should be used when the costs are all incurred at the time of sale, but the proceeds will be received over the next year with a high likelihood of collection?
A. Sales basis method.
B. Completed contract method.
C. Installment sales method.
D. Cost recovery method.

21. Which of the following tactics would *least likely* be used to make earnings appear more stable?
A. Classification of good news/bad news.
B. Income smoothing.
C. Big bath behavior.
D. Accounting changes.

22. Which of the following statements concerning when a company announces it is discontinuing a business segment is FALSE?
A. The income or loss from the discontinued operations is reported separately.
B. Past income statements must be restated, separating the income or loss from the discontinued operations.
C. Any expected gain on the disposal is reported in the year of the announcement.
D. Income and losses from discontinued operations are reported net of tax after net income from continuing operations.

23. Assuming a project is in process, which of the following *best describes* a difference between the percentage-of-completion method versus the completed contract method for revenue recognition? The:
A. completed contract method generates higher cash flows.
B. percentage-of-completion method results in higher earnings volatility.
C. completed contract method results in a lower liabilities-to-equity ratio.
D. percentage-of-completion method generally results in higher total assets.

24. Firms with a continuing flow of profitable projects that use the percentage-of-completion method as opposed to the completed contract method to recognize revenue generally have which of the following?
A. Higher liabilities.
B. Lower total assets.
C. Lower shareholder equity.
D. Lower ratio of liabilities-to-equity.

25. An analyst gathered the following information for the current fiscal year on a construction company:
- The company has a 10-year project to build a canal for $5,000,000.
- Cash received on the contract is $500,000.
- The firm incurred costs of $400,000 during the fiscal year.
- An unreliable estimate of the total project cost is $4,000,000.

In the current fiscal year, the firm would report gross profit for the project of:

A. $0.
B. $100,000.
C. $600,000.
D. $1,000,000.

26. Construction Project R has both a reliable contract price and an unknown cost estimate. Construction Project S has an unreliable cost estimate. Which revenue recognition method(s) should be used?

	Project R	Project S
A.	Completed contract	Percentage-of-completion
B.	Completed contract	Completed contract
C.	Percentage-of-completion	Completed contract
D.	Percentage-of-completion	Percentage-of-completion

Use the following data to answer Questions 27 and 28.

DDD Inc. has a 5-year construction contract to build a canal for $600,000. The estimate of total costs is $400,000. Year 1 and Year 2 incurred costs are, respectively, $100,000 and $20,000.

27. If ultimate payment is assured and the cost estimate is reliable, DDD would report realized profits of:

	Year 1	Year 2
A.	$0	$0
B.	$10,000	$50,000
C.	$40,000	$40,000
D.	$50,000	$10,000

28. If the estimate of costs is unreliable, DDD would report the following realized profits of:

	Year 1	Year 2
A.	$0	$0
B.	$10,000	$50,000
C.	$40,000	$40,000
D.	$50,000	$10,000

29. Which of the following statements about the percentage-of-completion and completed contract methods during the life of a project is TRUE?

A. Reported earnings are higher under the completed contract method than the percentage-of-completion method.
B. The percentage-of-completion method can be used with unreliable cost estimates.
C. The completed contract method must be used if reliable cost estimates can be obtained.
D. Periodic profit is not recognized under the completed contract method prior to the project completion.

30. RRR, Inc., has a $500,000 airport construction project contract. The estimated total costs are $400,000. In the first year, incurred costs are $200,000. What is the firm's change in retained earnings at the end of the first fiscal year if it uses the following revenue recognition methods?

	Percentage-of-Completion Method	Completed Contract Method
A.	$0	$0
B.	$50,000	$50,000
C.	$50,000	$0
D.	$100,000	$50,000

Comprehensive Problem – Accounting Income and Assets: The Accrual Concept

Acme has entered into a project to build a bridge which it estimates will cost $1.5 million and take three years to complete. Assume the following: total revenues on the project will be $2.3 million; billings will be $800,000 for each of the first two years and $700,000 in the final year; costs will be $500,000 each year; cash flows will be $600,000 in years 1 and 2 and $1.1 million in year 3.

Complete the following entries for the second year of the project under the two methods of revenue recognition:

	Percentage of Completion	Completed Contract
Revenue		
Expense		
Net income		
Cash flow		
Net CIP or AB (identify which and whether asset or liability)		
Accounts receivable		

ANSWERS – CONCEPT CHECKERS: ACCOUNTING INCOME AND ASSETS: THE ACCRUAL CONCEPT

1. A Income from continuing operations is considered the best indicator of future earnings.

2. D Accounting income is based on the matching principle.

3. D There is no requirement for the company to make a sale in its normal line of business.

4. C The matching principle facilitates the measurement of periodic income.

5. A The sales-basis method recognizes revenue at the time of sale, where title is transferred and the sale is for cash or accounts receivable.

6. D All statements are differences between the percentage-of-completion method and the completed contract method.

7. A $24,000/$60,000 = 40% of the project completed. 40% of $100,000 = $40,000 revenue. $40,000 – $24,000 = $16,000 profit for the period.

8. A The completed contract method does not recognize any revenue until the entire project is complete.

9. B Unusual or infrequent items are reported below recurring items from continuing operations, but above net income from continuing operations.

10. D Losses from the disposal of a business segment would be reported as part of operating income (or as discontinued operations when appropriate).

11. A Effects of accounting changes are reported after net income from continuing operations.

12. C Engineering estimates can be used to estimate proportionate revenues.

13. C Common stock is recorded at *par value* with the excess over par recorded as additional paid-in capital.

14. B Percentage-of-completion method is used for long-term contracts when there is a reliable estimate for revenues and costs.

15. A Extraordinary items are found in the income statement.

16. D Interest expenses and operating expenses equally affect net income from continuing operations. The other responses are all earnings manipulation techniques: A is income classification, B is income smoothing, and C is big bath behavior.

17. C Since revenues are not recognized until the end of the project under the completed contract method, income is a poor measure of economic activity.

18. B The percentage-of-completion method is used when there are reliable estimates of revenues and expenses.

19. C The completed contract method is used when estimates of costs are unreliable.

20. A The sales basis method is used when the goods or services have been provided when the sale was made, and there is a high likelihood of payment.

21. C Big bath behavior makes earnings look even worse during a bad year. Classification of good news/bad news may be used to smooth earnings.

22. C Any expected gain on the disposal cannot be reported until after the sale is completed.

23. D Both methods generate the same cash flows, while the percentage-of-completion method has higher total assets and lower income volatility.

24. D Generally, firms with a continuing flow of profitable projects will have higher total assets, lower liabilities, higher shareholder equity, and a lower ratio of liabilities-to-equity by using the percentage-of-completion method as compared to the completed contract method.

25. A Since the cost estimate is unreliable, the completed contract method for the revenue recognition should be used. This method does not recognize periodic profit prior to the completion of the contract period.

26. B The completed contract method should be used when the selling price or cost estimates are unreliable, while the percentage-of-completion method can be used when payment is assured and cost estimates are reliable. Neither Project R or S meets the requirements for using percentage-of-completion.

27. D Since ultimate payment is assured and the cost estimate is reliable, DDD may use the percentage-of-completion method. Total expected profit is $600,000 – $400,000 = $200,000. In year 1, 25% of the total costs of the project ($100,000/$400,000) are incurred, hence, reported year 1 profit is 25% × $200,000 = $50,000. In year 2, 5% of the total costs of the project ($20,000/$400,000) are incurred. Hence, year 2 profit is 5% × $200,000 = $10,000.

28. A Since the estimate of costs is unreliable, the company must use the completed contract method and defer all profit recognition until the end of the contract.

29. D Generally, firms with a continuing flow of profitable projects will have higher total assets, lower liabilities, higher shareholder equity, and a lower ratio of liabilities-to-equity by using the percentage-of-completion method as compared to the completed contract method. The completed contract method should be used when the selling price or cost estimates are unreliable while the percentage-of-completion method can be used when ultimate payment of the contract is assured and cost estimates are reliable. The completed contract method does not report periodic profit.

30. C The completed contract method does not report periodic profit. Hence, if the firm uses the completed contract method, retained earnings will be $0 in year 1. If the percentage-of-completion method is used, retained earnings will increase by $50,000 = [(200,000/400,000) × (500,000 – 400,000)].

ANSWER – COMPREHENSIVE PROBLEM: ACCOUNTING INCOME AND ASSETS: THE ACCRUAL CONCEPT

Percentage of completion year 2:

$\text{revenue} = \frac{\$500,000}{\$1,500,000} \times \$2,300,000 = \$766,667$, expense = $500,000, net income = $266,667, cash flow = $600,000, construction in progress = $1,533,334, advance billings = $1.6 million

Net balance sheet entry is as follows:

advance billings = $66,666 (liability), accounts receivable = $1.6 million – $1.2 million = $400,000

Completed contract year 2:

revenue = 0, expense = 0, net income = 0, cash flow = $600,000, construction in progress = $1 million, advance billings = $1.6 million, net difference is advance billings = $600,000 (liability), accounts receivable = $1.6 million – $1.2 million = $400,000

	Percentage of Completion	Completed Contract
Revenue	$766,667	0
Expense	$500,000	0
Net income	$266,667	0
Cash flow	$600,000	$600,000
Net CIP or AB (identify which and whether asset or liability)	$66,666 Advance billings liability	$600,000 Advance billings liability
Accounts receivable	$400,000	$400,000

The following is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

THE STATEMENT OF CASH FLOWS

Study Session 7

EXAM FOCUS

The statement of cash flows is one of the most important topics in the Level I accounting curriculum. It provides information on a firm's operating, investing, and financing activities and is the link between the firm's income statement and the changes in its cash balances. On the Level 1 exam, candidates should be prepared to classify a firm's cash flows into one of the three categories. Candidates should also be prepared to calculate cash flows from operation using the indirect method, starting with net income and adjusting for noncash items and changes in balance sheet accounts to arrive at CFO.

CHANGES IN CASH

Net income based on accrual accounting is not cash earnings. Therefore we need a statement of cash flows to provide information about a company's sources and uses of cash. Remember, 'cash and cash equivalents' includes currency, coins, bank deposits, money market funds, and T-bills and other debt securities with maturities of less than 90 days.

Some understanding of the basics of constructing a statement of cash flows can be gained by looking at our basic accounting relations. Since:

assets = liabilities + equity, it must be that:

Δassets = Δliabilities + Δequity, and we can write:

Δcash + Δnon-cash assets = Δliabilities + Δequity

and Δcash = Δliabilities + Δequity – Δnon-cash assets.

If we buy a machine (a non-cash asset), cash goes down and non-cash assets go up. If we sell a machine or building, non-cash assets go down and cash goes up. If we borrow money, both cash and assets go up. If we issue stock or make cash profits, both cash and equity increase. If we pay dividends, retained earnings are less, so both equity and cash are less. Try to keep this framework in mind as you study the following material.

LOS 35.a: Identify the principal purposes and uses of the statement of cash flows.

The **statement of cash flows** provides information beyond that available from earnings and other financial data. This is because cash flow is essential to the continued operation of a business. The primary purpose of the statement of cash flows is to provide:

- Information about a company's cash receipts and cash payments during an accounting period.
- Information about a company's operating, investing, and financing activities.

Important information for investment decision making presented in the statement of cash flows includes whether:

- Regular operations generate enough cash to sustain the business.

- Enough cash is generated to pay off existing debts as they mature.
- The firm is likely to need additional financing.
- Unexpected obligations can be met.
- The firm can take advantage of new business opportunities as they arise.

The Financial Accounting Standards Board (FASB) states that financial statements should include information about:

- How the firm obtains and spends cash.
- The firm's borrowing and debt repayment activities.
- The firm's sale and repurchase of its ownership securities.
- The firm's dividend payments and other cash distributions to owners.
- Other factors affecting the firm's liquidity and solvency.

LOS 35.b: Compare and contrast the three major classifications (i.e., cash provided or used by operating activities, investing activities, and financing activities) in a statement of cash flows, and describe how noncash investing and financing transactions are reported.

The **statement of cash flows** provides information on cash flows from operations, investing activities, and financing activities. Information on noncash activities must also be reported along with the statement.

The statement of cash flows relates the firm's income statement to changes between the firm's beginning-of-period and end-of-period balance sheets. The objective of the statement of cash flows is to show the sources of cash and all the uses of cash during the accounting period. The statement of cash flows has the format shown in Figure 1.

Figure 1: Statement of Cash Flows for the Period 1/1/xx to 1/1/xx+1

Cash flow from operations (CFO)	+/– $xx
Cash flow from investing (CFI)	+/– $yy
Cash flow from financing (CFF)	+/– $zz
Change in the cash account	Δ cash
Beginning of period cash	+ Beginning cash
Ending cash balance	**Ending cash**

Cash flow from operations represents changes in the working capital accounts (e.g., accounts receivable, inventory, and accounts payable) and all items that flow through the income statement (e.g., cash receipts from customers, payments for good sold, wages):

- Net cash flow from operations focuses on the *liquidity* of the company rather than on profitability.
- Under Statement of Financial Accounting Standards (SFAS) 95, interest and dividend revenue and interest expense are considered operating activities, but dividends paid are considered financing activities.
- All income taxes are considered operating activities, even if some arise from financing or investing.

Cash flow from investing represents the purchase or sale of productive assets (physical assets and investments) for cash:

- Investing cash flow essentially deals with the items appearing on the lower left-hand portion of the balance sheet (fixed assets).
- Investing cash flow includes:
  - Capital expenditures for long-term assets.

- Proceeds from the sales of assets.
- Cash flow from investments in joint ventures and affiliates and long-term investment in securities.

Cash flow **from financing** represents acquiring and dispensing ownership funds and borrowings:

Financing cash flow deals with the lower right-hand portion of the balance sheet (long-term debt and equity). Examples include cash flows from additional debt and equity financing:

- Debt financing includes both short- and long-term financing.
- Dividends paid are a financing cash flow because dividends flow through the retained earnings statement.

Noncash investing and financing activities do not flow through the statement of cash flows because they do not require the use of cash. Examples are:

- Retiring debt securities by issuing equity securities to the lender.
- Converting preferred stock to common stock.
- Acquiring assets through a capital lease (only the initial purchase entries).
- Obtaining long-term assets by issuing notes payable to the seller.
- Exchanging one noncash asset for another noncash asset.
- The purchase of noncash assets by issuing equity or debt securities.

While these activities do not flow through the statement of cash flows, they should be disclosed in either the footnotes or on a separate schedule as investing or financing events that did not affect cash.

LOS 35.c: Calculate and analyze, using the indirect method, the net cash flow provided or used by operating activities, investing activities and financing activities.

The calculation of **cash flow from operations using the indirect method** starts with income after taxes (the bottom of the income statement) and adjusts backwards for noncash and other items. Changes in balance sheet items are used to adjust net income under the indirect method. Figure 2 identifies changes in balance sheet accounts as either sources of cash (added to net income) or uses of cash (subtracted from net income).

Figure 2: Balance Sheet Items in the Cash Flow Statement

	Increase	*Decrease*
Current assets	use of cash	source of cash
Current liabilities	source of cash	use of cash

Net income

Adjust for:

\+ Noncash expenses or losses

– Noncash revenues or gains

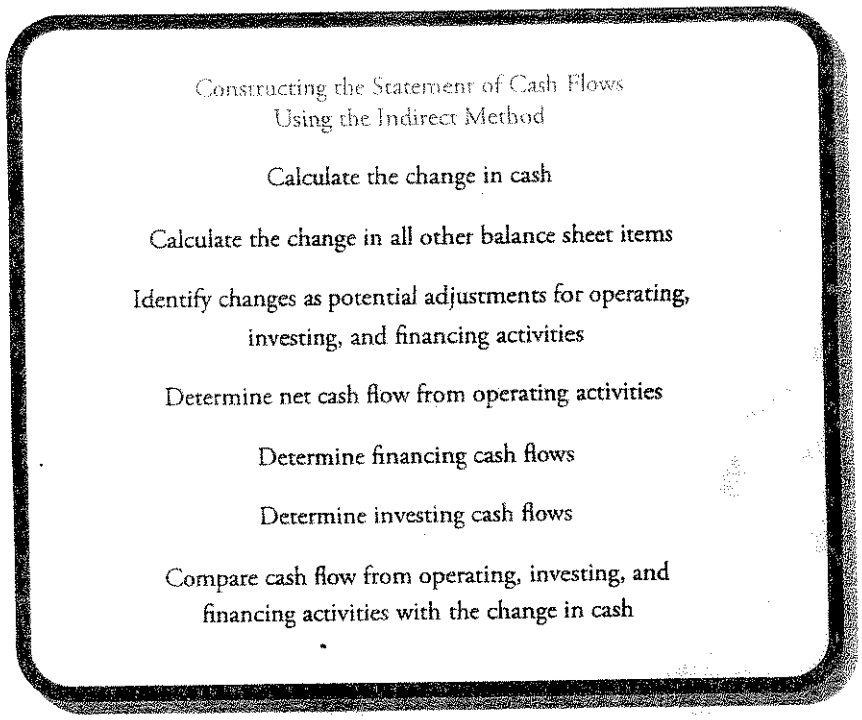
Adjust for changes in working capital:

+/– Changes in operating asset accounts (e.g., *accounts receivable)*

+/– Changes in operating liability accounts (e.g., *accounts payable)*

= Cash flow from operations

Figure 3: Cash Flow Statement Construction



Example: Statement of cash flows using the indirect method

Given the following income statement and balance sheet information, calculate the statement of cash flows using the indirect method.

Income Statement	
Sales	$1,600
Cost of goods sold	(1,350)
Gross profit	250
Depreciation expense	(100)
Interest expense	(47)
Equity in earnings of investment	2
Gain on the sale of old machine	10
Income before taxes	$115
Income taxes:	
Current	(35)
Deferred	(10)
Net income after taxes	$70

Balance Sheet	1/1/end	1/1/beg	Net Change
Assets			
Cash	$292	$100	$192
Accounts receivable	280	200	80
Inventory	700	800	(100)
Property, plant, and equipment	1,020	1,000	20
Accumulated depreciation	(340)	(300)	(40)
Investments	12	10	2
Total assets	$1,964	$1,810	$154
Liabilities and Equity			
Accounts payable	$470	$450	$20
Mortgage	550	600	(50)
Bank note	100	0	100
Deferred taxes	90	80	10
Common stock	410	400	10
Retained earnings	344	280	64
Total liabilities and equity	$1,964	$1,810	$154

Additional information:

1. Dividends of $6 were paid to shareholders.
2. One new common share was sold at par value. Par is $10 per share.
3. Fixed assets were sold for $30. Original cost of these assets was $80, and $60 of accumulated depreciation has been charged to the original cost.
4. New fixed assets were purchased for $100. To pay for this acquisition, a 10-year, $100 note was issued to a bank.
5. The firm recognized a $2 gain from a subsidiary using the equity method. No cash was received.

Cash flow from operations (indirect method):		
Net income		$70
Add (subtract) adjustments		
Depreciation	$100	
Deferred taxes	10	
Gain on the sale of machinery	(10)	
Equity in long-term investment	(2)	
Accounts receivable (use)	(80)	
Inventory (source)	100	
Accounts payable (source)	20	
		138
Net cash flow from operations		$208

Professor's Note: It is important to remember that only the current period's depreciation is considered on the statement of cash flows under the indirect method.

You might be wondering what happened to the $60 in accumulated depreciation written off when the old machine was sold. The answer is that the depreciation was entered into the cash flow computations in earlier periods.

Let's scrutinize the SCF and talk a bit about its construction:

- Depreciation and deferred taxes are noncash expenses which reduce net income. Adding them back to net income eliminates any effect on cash flows.
- The gain on the sale of machinery is equal to the market value of the machine ($30) minus the book value of the machine at the time of the sale ($80 historical cost—$60 accumulated depreciation). Observe that the full $30 is listed as a cash flow from investing, so the $10 gain is double counting and must be removed from net income when deriving CFO.
- The gain from the subsidiary is equity investment income that does not result in receipt of cash. Thus, it is eliminated from net income in deriving CFO.
- Accounts receivable and accounts payable are operating (working capital) accounts whose change is classified via sources/uses. That is, changes in accounts receivable, inventory and accounts payable are adjustments to reflect funding from customers and suppliers.

Investing Activities and Financing Activities

Determining cash flow from **investing activities** tends to be easier than calculating cash from operations. Each investing activity is classified as a cash inflow or a cash outflow. The individual items are then added together to compute cash from investing.

Continuing with our example from the previous LOS:

Investing cash flows	
Purchase fixed assets (use)	($100)
Sale of old machine (source)	30
Net cash flow from investing	**($70)**

- The purchase of fixed assets is a cash expenditure and is reflected as a cash outflow.
- The entire amount received from the sale of the old machine (fixed assets) is reflected as a cash inflow.

Cash receipts and payments from each financing activity are analyzed individually and then totaled to compute **cash flow from financing.**

Financing cash flows	
10-year note (source)	$100
Sale of common stock (source)	10
Dividends paid (use)	(6)
Repayment of mortgage note (use)	(50)
Net cash flow from financing	$54

- The issuance of the 10-year $100 note and the sale of common stock represent cash inflows to the firm.
- Dividends paid flow through retained earnings and are classified as a financing cash outflow.
- The repayment of the mortgage note principal constitutes a use of cash.

Completed Statement of Cash Flows

Cash flow from operations (indirect method):		
Net Income		$70
Add (subtract) adjustments		
Depreciation	$100	
Deferred taxes	10	
Gain on the sale of machinery	(10)	
Equity in long-term investment	(2)	
Accounts receivable (use)	(80)	
Inventory (source)	100	
Accounts payable (source)	20	
		138
Net cash flow from operations		**$208**
Investing cash flows		
Purchase fixed assets (use)	($100)	
Sale of old machine (source)	30	
Net cash flow from investing		**($70)**
Financing cash flows		
10-year note (source)	$100	
Sale of common stock (source)	10	
Dividends paid (use)	(6)	
Repayment of mortgage note (use)	(50)	
Net cash flow from financing		**$54**
Net cash flow		
Net increase in cash		$192

The net increase in cash is $192. Note that this is equal to the net increase in cash shown on the balance sheet ($292 – $100 = $192).

KEY CONCEPTS

1. The primary purpose of the statement of cash flows is to provide information about a company's cash receipts and payments as well as its sources and uses of cash from and for investing and financing activities.
2. Classifications of cash flows:
   - *Cash flow from operations* represents changes in the working capital accounts and all items that flow through the income statement.
   - *Cash flow from investing* represents the purchase or sale of assets.
   - *Cash flow from financing* represents cash expended to pay dividends, repurchase stock, or make principal payments on debt, or taken in from the sale of securities or borrowing.
3. The *indirect method* of constructing a statement of cash flows begins with income after taxes (net income) and then makes adjustments for non-cash items. Changes in balance sheet items are used to adjust net income.
4. *Cash flow from investing* is calculated by classifying each investing activity as a non-cash transaction, a cash inflow (+), or an outflow (–), and summing the individual items.
5. *Cash flow from financing* is calculated by summing the cash receipts (+) and payments (–) from each financing source.

CONCEPT CHECKERS: THE STATEMENT OF CASH FLOWS

1. The statement of cash flows is *least likely* to provide which of the following items of information for investment decision making?
   A. Whether unexpected obligations of the firm can be met.
   B. Whether the firm is likely to need additional financing.
   C. Whether the firm can take advantage of new business opportunities as they arise.
   D. Whether the firm's management has demonstrated sound fiscal management.

2. Torval Inc. retires debt securities by issuing equity securities. This is considered a:
   A. cash flow from operations.
   B. cash flow from investing.
   C. cash flow from financing.
   D. non-cash transaction.

3. Net income for Monique Inc. for the fiscal period ended December 31, 2005 is $78,000. Its accounts receivable balance at December 31, 2005 is $121,000 and it was $69,000 at December 31, 2004. Its accounts payable balance at December 31, 2005 is $72,000 and it was $43,000 at December 31, 2004. Depreciation for 2005 is $12,000 and there is an unrealized gain of $15,000 included in 2005 income from the change in value of trading securities.

   Which of the following amounts represents Monique's cash flow from operations for 2005?
   A. $52,000.
   B. $67,000.
   C. $82,000.
   D. $98,000.

4. Martin Inc. had the following transactions during 2005:
   Purchased new fixed assets for $75,000.
   Converted $70,000 worth of preferred shares to common shares.
   Received cash dividends of $12,000. Paid cash dividends of $21,000.
   Mortgage principal repayment of $17,000.

   Which of the following amounts represents Martin's cash flows from investing and cash flows from financing in 2005, respectively?

	Cash Flows From Investing	Cash Flows From Financing
A.	($5,000)	($21,000)
B.	($75,000)	($21,000)
C.	($5,000)	($38,000)
D.	($75,000)	($38,000)

ANSWERS – CONCEPT CHECKERS: THE STATEMENT OF CASH FLOWS

1. D "Sound fiscal management" is a very subjective term that cannot always be directly or reasonably measured from the statement of cash flows. The other three answers are important information presented in the Statement of Cash Flows.

2. D The exchange of debt securities for equity securities is a non-cash transaction.

3. A

Net income	$78,000
Add: depreciation	$12,000
Deduct: unrealized gain	($15,000)
Change in accounts receivable – use of cash	($52,000)
Change in accounts payable – source of cash	$29,000
Cash flows from operations	$52,000

4. D Purchased new fixed assets for $75,000 – cash outflow from investing
Converted $70,000 worth of preferred shares to common shares – non-cash transaction
Received dividends of $12,000 – cash inflow from operations
Paid dividends of $21,000 – cash outflow from financing
Mortgage repayment of $17,000 – cash outflow from financing
CFF = –21,000 – 17,000 = –$38,000

The following is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

ANALYSIS OF CASH FLOWS

Study Session 7

EXAM FOCUS

The key to this topic review is the classification of cash flows into three categories: (1) cash flows from operations, which are cash flows related to the normal operations of a company; (2) cash flows from investing, which reflect the acquisition or retirement of assets; and (3) cash flows from financing, which are flows related to the firm's financing decisions. Some classifications are straightforward, but some are not. Know that cash interest expense, interest revenue, and dividend revenue are operating cash flows, while dividends paid are a financing cash flow. For success on the Level 1 exam, you will need to create a statement of cash flows using both the indirect and direct methods. When making adjustments to balance sheet items, memorize that there is an inverse relationship between changes in assets and cash flow, and a positive relationship between changes in liabilities and cash flow.

LOS 36.a: Classify a particular transaction or item as cash flow from 1) operations, 2) investing, or 3) financing.

Items on the cash flow statement come from two sources: (1) income statement items and (2) changes in balance sheet accounts. The cash flow statement divides cash flow into three components.

Cash flow from operations (CFO) reports the cash generated from sales and the cash used in the production process. These items essentially flow through the firm's income statement and working capital accounts. Working capital accounts are current assets and current liabilities. The key elements are:

- Cash collections from sales.
- Cash inputs into the manufacturing or retail process.
- Cash operating expenses.
- Cash interest expense.
- Cash tax payments.

Cash flow from investing (CFI) reports the cash used for property, plant, and equipment; investments; acquisitions; and the cash generated from sales of assets or businesses. These items are found in the noncurrent portion of the asset section of the balance sheet. Key elements are:

- Purchases of property, plant, and equipment.
- Investments in joint ventures and affiliates.
- Payments for businesses acquired.
- Proceeds from sales of assets.
- Investments (or sales of investments) in marketable securities.

Cash flow from financing (CFF) reports capital structure transactions. These items are found in the long-term capital section of the balance sheet and the statement of retained earnings (RE). Key elements are:

- Cash dividends paid.
- Increases or decreases in short-term borrowings.

- Long-term borrowings and repayment of long-term borrowings.
- Stock sales and repurchases.

Note that even though cash interest expense is considered to be a financing cash flow from an economic perspective, it is classified as an operating cash flow for accounting purposes.

Classifying Cash Flows

In most cases the classification of cash flows is straightforward. Items that affect cash flow are either an income statement account or a *change* in a balance sheet account. As a general rule, an increase in an asset account or a decrease in a liability account requires the use of cash and, therefore, decreases the cash flow to the firm. For example, purchasing more inventory (increase in an asset account) or retiring trade credit (decrease in a liability) results in the use of cash and a decrease in cash flow. Likewise, a decrease in an asset account or an increase in a liability account represent a source of cash or an increase in the firm's cash flow. For example, collecting accounts receivable (decrease in an asset account) or an increase in notes payable (increase in a liability) both result in cash inflows for the firm.

Operating cash flows (CFO). All items affecting income are included as a component of operating cash flow. Changes in asset or liability accounts that are a result of the sales or production process also are classified as operating cash flows.

Examples of balance sheet items that are classified as operating cash flows include changes in:

- Receivables.
- Inventories.
- Prepaid expenses.
- Taxes, interest, and miscellaneous payables.
- Deferred taxes.

Examples of income statement items that are classified as operating cash flows include:

- Cash sales.
- Cash cost of sales.
- Cash general and administrative expenses.
- Cash taxes.
- Interest paid and received.
- Dividends received.

Investing cash flows (CFI). Changes in asset accounts, typically long-term assets (and potentially corresponding liability accounts), that reflect capital investment in the company are classified as investing cash flows. Examples of items that are classified as investing cash flows include changes in:

- Most gross fixed-asset accounts.
- Marketable securities.

Financing cash flows (CFF). Changes in equity accounts, including dividends, and changes in liabilities that are part of the capital structure are classified as financing cash flows. Examples of items that are classified as financing cash flows include:

- Dividends paid to the company's shareholders.
- A change in liability accounts that represent financing (typically interest-bearing debt or deep-discount debt).
- A change in equity accounts.

Noncash transactions. Some transactions do not result in immediate cash inflows or cash outflows. These transactions are disclosed in footnotes. However, these transactions typically involve an investing and/or financing decision. For example, if a firm acquires a building and real estate by assuming a mortgage, the firm has made an investment and financing decision. Economically, this is equivalent to borrowing the purchase amount. Another example of a noncash transaction is an exchange of debt for equity. Analysts should be aware of the firm's noncash transactions and incorporate them into analysis of past and current performance, and include their effects in projections of the future.

LOS 36.b: Compute and interpret a statement of cash flows, using the direct method and the indirect method.

The statement of cash flows comprises three sections: cash flow from operating activities (CFO), investing cash flow (CFI), and financing cash flow (CFF). Under U.S. and IAS GAAP, the CFO can be presented two ways—using the *direct method* and the *indirect method*. The direct method presents more information (and requires more information to prepare) and is better for analysis. However, most firms use the indirect method for financial reporting. Thus, it is important to understand how each method presents the data used to compute CFO. An analyst must also possess the knowledge and skills to convert the indirect method to the direct method for analysis purposes.

The following is the format of the basic statement of cash flows:

Statement of Cash Flows (SCF)
for the period 1/1/2006 to 12/31/2006

	Cash flow from operations (CFO)
+	Cash flow from investing (CFI)
+	Cash flow from financing (CFF)
	Change in the cash account
+	Beginning of period cash
	Ending cash balance

Professor's Note: Throughout the discussion of the direct and indirect methods, remember the following points:

- *CFO is calculated differently, but the result is the same under both methods.*
- *The calculation of CFI and CFF is the same under both methods.*
- *There is an inverse relationship between changes in assets and changes in cash flow. In other words, an increase in an asset account (e.g., accounts receivable) is a use of cash, whereas a reduction in an asset account is a source of cash.*
- *There is a positive relationship between changes in liabilities and changes in cash flow. Said differently, an increase in a liability account is a source of cash and a decrease in a liability is a use.*
- *Sources of cash are always positive numbers in the SCF; uses of cash are always negative numbers.*

Direct method. The direct method presents operating cash flow by taking each item from the income statement and converting it to its cash equivalent by adding or subtracting the changes in the corresponding balance sheet accounts. Footnotes are often helpful in learning how inflows and outflows have affected the balance sheet accounts. The following are some common examples of operating cash flow components:

- Cash collections is the principle component of CFO. The actual amount of cash received during the period is measured with: net sales (a source), adjusted for changes in accounts receivable, and cash advances from customers.
- Cash outflows consist of cash inputs, cash operating expenses, cash interest, and cash taxes. One component of cash operating expenses is the cash used in the production of goods and services, which is measured with: cost of goods sold (COGS) adjusted for changes in inventory, changes in accounts payables, and changes in

other liabilities for inputs. Other cash operating expenses are cash expenses related to selling, administration, and research and development, adjusted for changes in related operating liabilities.

- The cash interest component only recognizes interest expense paid in cash. Accrued interest expense is not included. Cash interest is computed using interest expense (which includes noncash interest components) and removing the affect of changes in noncash interest components (such as accrued interest, the amortization of bond discounts and premia, and accretion).
- Finally, the cash tax component only recognizes taxes paid in cash. Total taxes paid are netted against changes in deferred tax accounts. Cash taxes are computed using: tax expense, changes in taxes payable, and changes in deferred taxes. Similar to our discussion of interest expense above, tax expense on the income statement includes noncash items such as taxes payable and deferred taxes.

Professor's Note: A common "trick" in direct method questions is to provide information on depreciation expense along with other operating cash flow components. When using the direct method, ignore depreciation expense—it's a noncash charge. We'll see later that we do consider depreciation expense in indirect method computations, but we do this solely because depreciation expense and other noncash expenses are embedded in net income (our starting point) and need to be "backed out" of the computation.

Investing cash flows (CFI) are calculated by finding the changes in the appropriate gross fixed-asset account. Changes in noncash fixed-asset accounts, such as accumulated depreciation and goodwill, are not included since they do not represent a cash transaction. Any gains or losses from the disposal of an asset must also be reflected in cash flow.

cash from asset disposal = decrease in asset + gain from sale

Financing cash flows are determined by measuring the cash flows occurring between the firm and its suppliers of capital. Cash flows between the firm and creditors result from new borrowings and debt repayments. Note, interest paid is technically a cash flow to the creditors but it is already accounted for in CFO. Cash flows between the firm and the shareholders or owners occur as equity issued, share repurchases, and dividends. CFF is the sum of these two measures:

net cash flows from creditors = new borrowings – principal repaid

net cash flows from owners = new equity issued – share repurchases – cash dividends

where:
cash dividends are measured using dividends paid and changes in dividends payable
CFF = net cash flows from creditors + net cash flows from owners

Finally, total cash flow is equal to the sum of cash flow from operations, cash flow from investments, and cash flow from financing. If done correctly, the total cash flow will equal the change in the cash balance from the beginning-of-period balance sheet to the end-of-period balance sheet.

Example: Direct method for computing CFO

Prepare a statement of cash flows using the direct method for a company with the following income statement and balance sheets (Figures 1 and 2). Keep track of the balance sheet items used to calculate CFO by marking them off the balance sheet. They will not be needed again when determining CFI and CFF.

Figure 1: Income Statement for 2004

Income Statement	
Sales	$100,000
Expenses	
Cost of goods sold	$40,000
Wages	5,000
Depreciation	7,000
Interest	500
Total expenses	$52,500
Income from continuing operations	$47,500
Gain from sale of land	10,000
Pretax income	57,500
Provision for taxes	20,000
Net income	$37,500
Common dividends declared	$8,500

Figure 2: Balance Sheet for 2003 and 2004

Balance Sheet	2004	2003
Assets		
Current assets		
Cash	$33,000	$9,000
Accounts receivable	10,000	9,000
Inventory	5,000	7,000
Noncurrent assets		
Land	$35,000	$40,000
Gross plant and equipment	85,000	60,000
less: Accumulated depreciation	(16,000)	(9,000)
Net plant and equipment	$69,000	$51,000
Goodwill	10,000	10,000
Total assets	$162,000	$126,000
Liabilities		
Current liabilities		
Accounts payable	$9,000	$5,000
Wages payable	4,500	8,000
Interest payable	3,500	3,000
Taxes payable	5,000	4,000
Dividends payable	6,000	1,000
Noncurrent liabilities		
Bonds	$15,000	$10,000
Deferred taxes	20,000	15,000
Stockholders' equity		
Common stock	$40,000	$50,000
Retained earnings	59,000	30,000
Total liabilities & stockholders' equity	$162,000	$126,000

Answer:

Professor's Note: There are many ways to think about these calculations and lots of sources and uses and pluses and minuses to keep track of. It's likely easier if you use a "+" sign for net sales and a "–" sign for cost of goods sold and other cash expenses used as the starting points. Doing so will allow you to consistently follow the rule that an increase in assets or decrease in liabilities is a use of cash and a decrease in assets or an increase in liabilities is a source. We'll use this approach in the answer to the example. Remember, sources are always + and uses are always –.

Cash from operations:

cash collections = net sales – increase in receivables
= $100,000 – $1,000 = $99,000

cash inputs = – cost of goods sold + decrease in inventory + increase in accounts payable
= –$40,000 + $2,000 + $4,000 = –$34,000

cash expenses = – wages – decrease in wages payable
= –$5,000 – $3,500 = –$8,500

cash interest = – interest expense + increase in interest payable
= –$500 + $500 = 0

cash taxes = – tax expense + increase in taxes payable + increase in deferred taxes
= –$20,000 + $1,000 + $5,000 = –$14,000

Cash collections	$99,000
cash inputs	(34,000)
cash expenses	(8,500)
cash interest	0
cash taxes	(14,000)
Cash flow from operations	$42,500

Investing cash flow:

In this example, we have two components of investing cash flow: the sale of land and the change in gross plant and equipment (PP&E).

cash from sale of land = decrease in asset (a source) + gain on sale (a source)
= $5,000 + $10,000 = $15,000

Note: If the land had been sold at a loss, we would have subtracted the loss amount from the decrease in assets.

change in gross PP&E = 2004 ending balance – 2003 ending balance
= $85,000 – $60,000 = $25,000 (use)

Cash from sale of land	$15,000
Purchase of plant and equipment	(25,000)
Cash flow from investments	($10,000)

Financing cash flow:

change in bond account = 2004 ending balance – 2003 ending balance
= $15,000 – $10,000 = $5,000 (source)

change in common stock = $40,000 – $50,000 = –$10,000 (use, or a net share repurchase of $10,000)

cash dividends = – dividend + increase in dividends payable
= –$8,500* + $5,000 = –$3,500 (use)

**Note:* If the dividend declared/paid amount is not provided, you can calculate the amount as follows: dividends declared = beginning retained earnings + net income – ending retained earnings. Here, $30,000 + $37,500 – $59,000 = $8,500.

Sale of bonds	$5,000
Repurchase of stock	(10,000)
Cash dividends	(3,500)
Cash flow from financing	($8,500)

Total cash flow:

Cash flow from operations	$42,500
Cash flow from investments	(10,000)
Cash flow from financing	(8,500)
Total cash flow	$24,000

The total cash flow of $24,000 is equal to the increase in the cash account. The difference between beginning cash and ending cash should be used as a check figure to ensure the total cash flow calculation is correct.

Indirect method. The three components of cash flow are equal to the same values as they were under the direct method. The only difference is that cash flow from operations is calculated in a different manner. The indirect method calculates cash flow from operations in four steps:

Step 1: Begin with net income.

Step 2: Subtract gains or add losses that result from financing or investment cash flows (such as gains from sale of land).

Step 3: Add back all noncash charges to income (such as depreciation and goodwill amortization) and subtract all noncash revenue components.

Professor's Note: Goodwill is no longer systematically amortized under U.S. GAAP and is instead subject to an "impairment determination" each year to see if any goodwill is to be written off to the income statement. Under IAS GAAP, goodwill may still be amortized.

Step 4: Add or subtract changes to operating accounts as follows:

- Increases in the balances of operating asset accounts are subtracted, while decreases in those accounts are added.
- Increases in the balances of operating liability accounts are added, while decreases are subtracted.

Cash flow from investments and cash flow from financing are calculated the same way as under the direct method. As was true for the direct method, total cash flow is equal to the sum of cash flow from operations, cash

flow from investments, and cash flow from financing. If done correctly, the total cash flow will be equal to the increase in the cash balance over the period.

Example: Indirect method for computing CFO

Calculate cash flow from operations using the indirect method for the same company in the previous example.

Answer:

Step 1: Start with net income of $37,500.

Step 2: Subtract gain from sale of land of $10,000.

Step 3: Add back noncash charges of depreciation of $7,000.

Step 4: Subtract increases in receivables and inventories and add increases of payables and deferred taxes.

Net income	$37,500
– Gain from sale of land	(10,000)
+ Depreciation	7,000
Subtotal	$34,500
Changes in operating accounts	
– Increase in receivables	($1,000)
+ Decrease in inventories	2,000
+ Increase in accounts payable	4,000
– Decrease in wages payable	(3,500)
+ Increase in interest payable	500
+ Increase in taxes payable	1,000
+ Increase in deferred taxes	5,000
Cash flow from operations	$42,500

Discrepancies between the changes in accounts reported on the balance sheet and those reported in the statement of cash flows are typically due to two events: mergers and acquisitions, and changes in exchange rates.

Under SFAS 95, inventory and accounts receivable acquired in a merger or purchase of another company are treated as a component of investing activities, not operating activities. Translation gains and losses associated with exchange rate changes are excluded from CFO, CFI, and CFF. Thus, there may be some discrepancies between changes in balance sheet items (e.g., accounts receivable) and statement of cash flow items using the methodology presented here. Translation gains and losses are reported separately and can be used to reconcile any discrepancies that may exist. Differences between changes in inventory and receivables on the balance sheet and adjustment amounts on the statement of cash flows can be used to estimate the value of inventory and receivables acquired through merger or purchase of a company.

Interpretation of Cash Flows

- Operating cash flow tells an analyst how much cash is being generated by the sales activity of the company. It is the most important component of cash flow analysis.
- Cash flows can indicate problems with liquidity and solvency. Negative operating cash flows indicate that the company will have to rely on external sources of financing to fund operations.
- Trends in cash flows can be extrapolated to estimate how the company will be performing over the next few years. Trend analysis is particularly useful when compared to the trend of income over time. Discrepancies between the trends in income and cash flow can suggest that earnings trends are not reliable.

- Interrelationships between cash flow components, such as cash inputs and cash collections, can give insight similar to ratio analysis with income statement figures.

LOS 36.c: Convert an indirect statement of cash flows to a direct basis.

The only difference between the indirect and direct methods of presentation is in the cash flow from operations (CFO) section. CFO under the direct method can be computed using a combination of the income statement and a statement of cash flows prepared under the indirect method.

There are two major sections in the CFO under the direct method: cash inflows (receipts) and cash outflows (payments). We will illustrate the conversion process using commonly used accounts. Please note that the list below is for illustrative purposes and is far from all-inclusive of what may be encountered in practice. The general principal here is to begin with an income statement item and adjust the item for non-cash transactions which have been included and cash transactions that have not been included.

Cash collections from customers:

1. Begin with net sales from the income statement.
2. Deduct (add) any increase (decrease) in the accounts receivable (AR) balance as disclosed in the indirect method. If the company has sold more on credit than has been collected from customers on accounts receivable, the AR balance will have increased, and cash collected will be less than net sales.
3. Add any advances from customers. Cash received from customers when the goods or services have yet to be delivered is not included in net sales, so such advances must be added to net sales in calculating cash collections.

Cash payments for inputs:

1. Begin with cost of goods sold (COGS), a negative number, as disclosed in the income statement.
2. If depreciation and/or amortization have been included in COGS, they must be added (they reduce COGS) in computing actual cash costs of inputs.
3. Add (subtract) any increase (decrease) in the accounts payable balance as disclosed in the indirect method. If payables have increased, then more was spent on credit purchases of inputs during the period than was paid on existing payables, so cash payments are reduced by the amount of the increase in payables.
4. Subtract (add) any increase (decrease) in the inventory balance as disclosed in the indirect method. Increases in inventory are not included in COGS for the period but still represent the purchase of inputs so they increase cash payments for inputs.
5. Add any write-off of inventory value over the period. A decrease in inventory (for example from applying lower of cost or market) will reduce the ending inventory and increase COGS for the period, but no cash expenditure is associated with such a reduction in ending inventory.

Other items in a statement of cash flows under the direct method follow the same principles. Cash taxes paid, for example, can be derived from income tax expense on the income statement. Adjustment must be made for changes in related balance sheet accounts (deferred tax assets and liabilities, and income taxes payable). Cash SG&A expense is SG&A from the income statement increased (decreased) by any increase (decrease) in prepaid expenses. An increase in prepaid expenses is a cash outflow for expenses not included in SG&A for the current period.

LOS 36.d: Explain the two primary-factors (i.e., acquisitions/divestitures and translation of foreign subsidiaries) that may cause discrepancies between balances of operating assets and liabilities reported on the balance sheet and those reported in the cash flow statement.

Acquisitions and Divestitures

Cash flow from operations (CFO) includes *operating* transactions and events only. The discrepancy arises when a *non-operating* transaction, such as an acquisition, results in the consolidation of the operating assets and liabilities of an existing firm to the balance sheet of the acquiring firm. Thus, the change reported in the cash flow statement in arriving at CFO will not equal the change on the balance sheet because the acquisition transaction is only reported on the balance sheet.

Translation of Foreign Subsidiaries

Translation gains and losses resulting from exchange rate fluctuations will directly flow through to the balance sheet upon translation to the reporting currency. However, given the nature of translation gains and losses as non-operating and non-cash transactions, there will be no effect on any of the three categories in the cash flow statement. The amount of the exchange rate translation effect will appear as a reconciling item in calculating the change in cash.

LOS 36.e: Describe and compute free cash flow.

Free cash flow (FCF) attempts to measure the cash available for discretionary purposes. This is the fundamental cash flow measure and is often used for valuation purposes. FCF for discretionary purposes (including growth opportunities) is operating cash flow minus those cash flows necessary to maintain the firm's present productive capacity. However, it is not practical for an analyst to determine which capital expenditures are necessary to maintain capacity and which are made to take advantage of growth opportunities. Consequently, free cash flow is often measured by:

free cash flow = operating cash flow – net capital expenditures

where:
net capital expenditures = total capital expenditures – after-tax proceeds from asset sales

When used for valuation purposes, some adjustments to free cash flow must be made. If the analyst is interested in free cash flow to the firm (all investors), after-tax interest expense must be added back [$I \times (1 - t)$] to CFO.

LOS 36.f: Distinguish between U.S. GAAP and IAS GAAP classifications of dividends paid or received and interest paid or received for statement of cash flow purposes.

Under U.S. GAAP (SFAS 95), dividends that are paid to the company's shareholders are classified as cash from financing (CFF) and *all other interest and dividend receipts and payments are classified as CFO.*

Under IAS GAAP (IAS 7):

- Interest and dividends received may be classified as either CFO *or* CFI.
- Dividends paid to the company's shareholders and interest paid on the company's debt may be classified as either CFF *or* CFO.

KEY CONCEPTS

1. Cash flows are divided into three categories:
   - Cash flow from operations measures the cash generated from sales and the cash used in the production process.
   - Investing cash flow reports the cash used for property, plant, equipment, investments, acquisitions, and the cash generated from sales of assets or businesses.
   - Financing cash flows include dividends paid, changes in equity accounts, and changes in liabilities that are part of the capital structure.
2. The direct method calculates cash flow from operations by calculating cash collections (the cash equivalent of sales), cash inputs (the cash equivalent of cost of goods sold), cash operating expenses, cash interest expense, and cash taxes.
3. The indirect method calculates cash flow from operations by starting with net income, subtracting out gains and adding back losses resulting from financing or investment cash flows, adding back all noncash charges, and adding and subtracting changes in asset and liability balance sheet accounts that result from operations.
4. CFO under the direct method is the net of cash inflows (receipts) minus cash outflows (payments) and can be computed using a combination of the income statement and the operating cash flow portion of the statement of cash flows prepared using the indirect method.
5. The two primary factors that may cause discrepancies between balances of operating assets and liabilities reported on the balance sheet and the cash flow statement are (1) consolidations to account for acquisitions and divestitures, and (2) currency translation gains and losses related to foreign subsidiaries.
6. Free cash flow—the cash available for discretionary purposes—is equal to operating cash flow minus net capital expenditures.
7. Under U.S. GAAP, all interest and dividend cash flows are classified as CFO except for the dividends that are paid to the company's shareholders—which are classified as CFF. Under IAS GAAP (IAS 7):
   - Interest and dividends received may be classified as either CFO *or* CFI.
   - Dividends paid to the company's shareholders may be classified as either CFF *or* CFO.
   - Interest paid on the company's debt may be classified as either CFO *or* CFF.

CONCEPT CHECKERS: ANALYSIS OF CASH FLOWS

1. Using the following information, what is the firm's cash flow from operations?

Net income	$120
Decrease in accounts receivable	20
Depreciation	25
Increase in inventory	10
Increase in accounts payable	7
Decrease in wages payable	5
Increase in deferred taxes	15
Profit from the sale of fixed assets	2

A. $142.
B. $158.
C. $170.
D. $174.

Use the following data to answer Questions 2 through 4.

Net income	$45
Depreciation	75
Taxes paid	25
Interest paid	5
Dividends paid	10
Cash received from sale of company building	40
Sale of preferred stock	35
Repurchase of common stock	30
Purchase of machinery	20
Issuance of bonds	50
Debt retired through issuance of common	45
Paid off long-term bank borrowings	15
Profit on sale of building	20

2. The cash flow from *operations* is:
A. $70.
B. $100.
C. $120.
D. $185.

3. The cash flow from *investing activities* is:
A. –$30.
B. $20.
C. $70.
D. $50.

4. The cash flow from *financing activities* is:
A. $30.
B. $55.
C. $75.
D. $85.

5. Given the following:

Sales	$1,500
Increase in inventory	100
Depreciation	150
Increase in accounts receivable	50
Decrease in accounts payable	70
After tax profit margin	25%
Gain on sale of machinery	$30

The cash flow from *operations* is:
A. $25.
B. $115.
C. $275.
D. $375.

Use the following data to answer Questions 6 through 15.

Balance Sheet Data

Assets	2003	2002
Cash	$290	$100
Accounts receivable	250	200
Inventory	740	800
Property, plant, & equipment	920	900
Accumulated depreciation	(290)	(250)
Liabilities		
Accounts payable	$470	$450
Interest payable	15	10
Dividends payable	10	5
Mortgage	$535	$585
Bank note	100	0
Common Stock	$430	$400
Retained earnings	350	300

Income Statement for the Year 2003	2003
Sales	$1,425
Cost of goods sold	1,200
Depreciation	100
Interest Expense	30
Gain on sale of old machine	10
Taxes	45
Net income	$60

Notes:

- Dividends declared to shareholders were $10.
- New common shares were sold at par for $30.
- Fixed assets were sold for $30. Original cost of these assets was $80, and $60 of accumulated depreciation has been charged to their original cost.
- The firm borrowed $100 on a 10-year bank note—the proceeds of the loan were used to pay for new fixed assets.
- Depreciation for the year was $100 (accumulated depreciation up $40 and depreciation on sold assets $60).

6. The cash flow from operations, using the *indirect* method, equals:
   A. $125.
   B. $145.
   C. $165.
   D. $185.

7. Cash collections equal:
   A. $1,250.
   B. $1,375.
   C. $1,425.
   D. $1,475.

8. Cash inputs equal:
   A. $1,000.
   B. $1,020.
   C. $1,120.
   D. $1,280.

9. Other cash expenses equal:
   A. $45.
   B. $65.
   C. $70.
   D. $75.

10. Cash flow from operations, using the *direct* method, equals:
    A. $125.
    B. $145.
    C. $165.
    D. $185.

11. Cash flow from *financing* equals:
    A. –$90.
    B. $65.
    C. $75.
    D. $85.

12. Cash flow from *investing* equals:
    A. –$80.
    B. –$70.
    C. $75.
    D. $85.

13. Total cash flow is:
    A. –$190.
    B. $100.
    C. $190.
    D. $290.

14. Free cash flow, considering flows available to shareholders, is:
    A. $115.
    B. $165.
    C. $195.
    D. $215.

15. What would be the impact on investing cash flow and financing cash flow if the company leased the new fixed assets instead of borrowing the money and purchasing the equipment?
    A. There would be no change in either type of cash flow.
    B. Investing cash flow would be higher and financing cash flow would be the same.
    C. Investing cash flow would be the same and financing cash flow would be lower.
    D. Investing cash flow would be higher and financing cash flow would be lower.

16. Which of the following items is NOT considered a cash flow from a financing activity in the statement of cash flows?
A. Receipt of cash from the sale of capital stock.
B. Receipt of cash from the sale of bonds.
C. Payment of cash for dividends.
D. Payment of interest on debt.

17. Which of the following would NOT cause a change in investing cash flow?
A. The sale of a division of the company.
B. The purchase of new machinery.
C. An increase in the depreciation expense.
D. The sale of obsolete equipment with no remaining book value.

18. Which of the following would NOT cause a change in cash flow from operations?
A. A decrease in notes payable.
B. An increase in interest expense.
C. An increase in accounts payable.
D. An increase in cost of goods sold.

19. Which of the following statements about the cash flow statement is TRUE?
A. The change in the cash balance will always be higher than the sum of operating, financing, and investing cash flows.
B. The calculation of cash flow under the direct and indirect methods will be identical except when the company is leasing equipment.
C. The purchase of cars could be considered an operating cash flow for a car dealership, and could be considered an investment cash flow for a manufacturing company.
D. Investment cash flow always is equal to the negative of operating cash flow.

20. Sales of inventory would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

21. Sale of bonds would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

22. Sale of land would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

23. Increase in taxes payable would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

24. Increase in notes payable would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

25. Increase in interest payable would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

26. Increase in dividends payable would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

27. The write-off of obsolete equipment would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

28. Sale of obsolete equipment would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

29. Interest expense would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

30. Depreciation expense would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

31. Dividends paid to shareholders would be classified as:
A. operating cash flow.
B. investment cash flow.
C. financing cash flow.
D. no cash flow impact.

32. Which of the following is *most likely* to cause discrepancies between changes in balance sheet operating assets and liabilities and those reported on the cash flow statement?
    A. Issuance of discount debt.
    B. Depreciation.
    C. Foreign currency translation gains.
    D. Accrual of liabilities.

ANSWERS – CONCEPT CHECKERS: ANALYSIS OF CASH FLOWS

1. C Net income – profits from sale of land + depreciation + decrease in receivables – increase in inventories + increase in accounts payable – decrease in wages payable + increase in deferred taxes = 120 – 2 + 25 + 20 – 10 + 7 – 5 + 15 = $170. Note that the profit on the sale of land should be subtracted out of net income (to avoid double counting the gain in net income and investing activities).

2. B Net income – profits from sale of building + depreciation = 45 – 20 + 75 = $100. Note that taxes and interest are already included in net income, and the profit on the sale of the building should be subtracted back from net income.

3. B Cash from sale of building – purchase of machinery = 40 – 20 = $20

4. A Sale of preferred + issuance of bonds – payment of bank borrowings – repurchase of common stock – dividends = 35 + 50 – 15 – 30 – 10 = $30. Note that we did not include $45 of debt retired through issuance of common stock as this was a noncash transaction. Knowing how to handle noncash transactions is important. For example, assume there was a noncash transaction where the firm acquired some PP&E assets by issuing mortgage debt. Since no cash was involved in these transactions, they should not appear on the statement of cash flows.

5. C Net income = $1,500 × 0.25 = $375, and cash flow from operations = net income – gain on sale of machinery + depreciation – increase in receivables – increase in inventories – decrease in accounts payable = 375 – 30 + 150 – 50 – 100 – 70 = $275.

6. D Net income – gain on sale of machinery + depreciation – increase in receivables + decrease in inventories + increase in accounts payable + increase in interest payable = 60 – 10 + 100 – 50 + 60 + 20 + 5 = $185.

7. B Sales – increase in receivables = 1,425 – 50 = $1,375

8. C –Cost of goods sold + decrease in inventory + increase in accounts payable = –1,200 + 60 + 20 = –$1,120. (Note that the question asks for cash inputs, so no negative sign is needed in the answer.)

9. C –Interest expense + increase in interest payable – tax expense = –30 + 5 – 45 = –$70. (Note that the question asks for cash expenses so no negative sign is needed in the answer.)

10. D The easiest way is to use the answer to Question 6, because it will be the same as cash flow from operations under the indirect method. Or you can calculate cash collections – cash inputs – cash expenses = 1,375 – 1,120 – 70 = $185.

11. C Sale of stock + new bank note – payment of mortgage – dividends + increase in dividends payable = 30 + 100 – 50 – 10 + 5 = $75.

12. B Sale of fixed assets – new fixed assets = 30 – 100 = –$70.

    Don't make this hard. We sold assets for 30 and bought assets for 100. Assets sold had original cost of 80, so (gross) PP&E only went up by 20.

13. C The easiest way is to simply take the change in cash from the balance sheet. However, adding the three components of cash flow will yield 185 – 70 + 75 = $190.

14. A Cash flow from operations – capital spending + sale of fixed assets = $185 – 100 + 30 = $115. Note that we are not asked for FCF to the firm. If we were asked about FCF to the firm, then we would have added back I(1 – t).

15. D The company would spend less on investments but would not have inflows from the borrowing.

16. D The payment of interest on debt is an *operating* cash flow.

17. C Depreciation does not represent a cash flow.

18. A Changes in notes payable represent a financing cash flow.

19. C Cars would be inventory to a dealership, while they would be fixed assets to most other businesses.

20. A Sales of inventory would be classified as operating cash flow.

21. C Sale of bonds would be classified as financing cash flow.

22. B Sale of land would be classified as investment cash flow.

23. A Increase in taxes payable would be classified as operating cash flow.

24. C Increase in notes payable would be classified as financing cash flow.

25. A Increase in interest payable would be classified as operating cash flow.

26. C Increase in dividends payable would be classified as financing cash flow.

27. D Write-off of obsolete equipment would be classified as no cash flow impact.

28. B Sale of obsolete equipment would be classified as investment cash flow.

29. A Interest expense would be classified as operating cash flow.

30. D Depreciation expense would be classified as no cash flow impact.

31. C Dividends would be classified as financing cash flow.

32. C Currency translation gains and losses do not affect cash flows but affect operating assets and liabilities. Issuance of debt and depreciation of assets do not affect operating cash flows. Increases in operating liabilities from accrual do not lead to discrepancies.

The following is a review of the Financial Statement Analysis principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

WORLDWIDE ACCOUNTING DIVERSITY AND INTERNATIONAL STANDARDS

Study Session 7

EXAM FOCUS

From this topic review, you should learn how the five factors listed influence accounting practices and the three primary problems caused by worldwide accounting diversity. The arguments for harmonization are that it would provide solutions to these three primary problems. Know that arguments against harmonization include nationalism, that differences among countries require different accounting practices, and that efficiently functioning global capital markets will naturally lead to the optimal amount of harmonization.

LOS 37.a: Discuss the factors influencing and leading to diversity in accounting and reporting practices throughout the world and explain why worldwide accounting diversity causes problems for capital market participants.

Meek and Saudagaran[1] identified five factors that are typically cited in the accounting literature as important in influencing the diversity of accounting and reporting practices throughout the world. The primary factors are differences among countries':

1. Legal systems.
2. Tax laws.
3. Sources of financing.
4. Inflation rates.
5. Political and economic ties.

Legal System

Countries with legal systems based on common law (primarily English-speaking countries) tend to have accounting standards that are developed by the accounting profession or other non-governmental bodies to supplement a smaller amount of statute law on the subject. The FASB in the U.S. is one (perhaps extreme) example of this model. The FASB has produced 156 Statements of Accounting Standards as of this writing which comprise U.S. Generally Accepted Accounting Principles (GAAP). This work is supplemented by voluminous guidance, clarification, and related pronouncements.

Countries which have primarily code-based legal systems typically have corporation law that lays out a basic framework for financial reporting but provides much less detail than the common law alternative discussed above. The statutes governing financial reporting originate in the national legislature rather than with a professional body.

1. Gary K. Meek and Sharokh M. Saudagaran, "A Survey of Research on Financial Reporting in a Transnational Context", *Journal of Accounting Literature*, 1990, 145–182.

Taxation

The important distinction between countries here is whether tax accounting and financial accounting must conform. In countries such as Germany, where conformity is the rule, corporations make accounting choices in order to minimize taxes, which lead to lower reported earnings on the firm's financial statements. The U.S. on the other hand, permits differences in accounting methods (e.g., depreciation methods) used for financial statements and for tax returns. This allows U.S. firms to increase reported earnings by making tax minimizing choices for the tax return, and to choose accounting methods that result in higher reported earnings per share when preparing financial statements in compliance with SEC requirements for reporting to shareholders.

Sources of Financing

In countries where public equity and publicly-traded debt are important sources of capital, financial reporting tends to be much more detailed. Public share ownership, especially, demands a more detailed focus on the income statement and earnings per share.

In countries where private funds and bank loans are the primary sources of corporate capital, detailed financial statements are less important. Under these circumstances, those who require financial performance information often have access to internal company information through their participation on or access to the board of directors. When bank debt financing is a primary source of financing, there tends to be more of a focus on the balance sheet and less on the income statement oriented disclosures that equity shareholders require.

Inflation Rates

In countries where very high inflation rates are, or have been typical, the problems associated with historical cost accounting are extreme. Latin American countries with a history of very high inflation rates typically have accounting rules that include inflation adjustments to historical cost.

Political and Economic Ties

Not surprisingly, former colonies of Britain and France have adopted systems of financial reporting consistent with their former colonizers. Mexico and Canada, great trading partners of the U.S., both have adopted practices similar to those of the U.S.

There is positive correlation between factors that influence accounting practices. Those countries that follow the common law tradition also tend to be those that allow differences between tax and financial reporting methods and where financing through public share offerings is more important.

Problems Caused by Worldwide Accounting Diversity

Capital markets participants encounter problems in comparing companies, even those in the same industry, when the companies are domiciled in different countries and prepare their financial statements in accordance with different accounting rules and conventions.

Companies that desire to raise capital outside their home countries can encounter problems related to accounting diversity. Foreign firms that want to list their shares on the U.S. exchanges, for example, must present results in accordance with U.S. GAAP. This can be a time consuming and expensive proposition.

Firms that do business in many countries through foreign subsidiaries face additional problems. Often, the foreign subsidiary must report in the local currency and follow local law and practices. The parent company is faced with the challenge of converting the financial statements of their subsidiaries to the accounting rules and practices of their home countries. This is in addition to problems associated with converting local currency results to the functional currency of the parent.

LOS 37.b: Discuss the importance of the hierarchical model of accounting diversity.

A **hierarchical model** of accounting diversity is one in which the accounting practices of many countries are classified, according to the various factors that drive differences in accounting practices, into successive levels or layers. The importance of such a model is that it identifies clusters of countries which are quite similar in accounting practices and it allows for conclusions about the degree of similarity (or diversity) between and among the accounting practices of different countries.

LOS 37.c: Discuss the arguments for and against harmonization and discuss the role of the International Accounting Standards Board (IASB).

Harmonization, here, refers to reducing the differences in worldwide accounting standards. The *arguments for harmonization* are essentially that it solves the problems of diversity in accounting practices. Harmonization would (1) increase the comparability of financial statements and results, (2) decrease the problems and expense of raising capital in foreign markets and reduce the cost of capital in general, and (3) decrease the problems and expense of preparing consolidated financial statements when foreign subsidiaries are subject to different accounting rules than the parent.

One argument against harmonization is that nationalism and resistance to accepting the practices of another country, or those imposed by an international body, will prevent it. Countries with great economic power may not see the value in adopting a system that incorporates foreign practices to any significant degree. Another argument against harmonization is that differences among countries in key factors, such as how capital is typically raised or inflation rates, actually require and give value to cross-border differences in accounting practices. A third argument against harmonization initiatives is that global capital markets will provide an efficient level of harmonization on their own as firms weigh the costs and benefits of both harmonization and diversity.

The International Accounting Standards Board (IASB) has 14 members from nine different countries. The IASB is responsible for issuing International Financial Reporting Standards (IFRS). Sixty-six countries require the use of IFRS for domestic company reporting, including those of the European Union. Many other countries permit the use of IFRS. In the U.S., the SEC allows foreign companies to use IFRS but requires a statement reconciling those statements to U.S. GAAP.

The IASB is and has been working with the FASB in the U.S. to work toward harmonization. In order to achieve convergence between FASB standards (U.S. GAAP) and IASB standards (IASB GAAP), both bodies are participating in projects with short-term and longer-term goals. The subjects of these projects include accounting for business combinations, performance reporting, revenue recognition, and development of a common conceptual framework.

KEY CONCEPTS:

1. Differences in accounting practices in different countries are due primarily to differences in legal systems, tax laws, financing sources, inflation rates, and political and economic ties.
2. Differences in financial reporting rules and practices (1) make it difficult to compare the financial results of firms based in different countries, (2) lead to additional effort and expense for parent companies to convert financial statements of foreign subsidiaries to their home country standards, and (3) increase the costs associated with listing shares on foreign stock exchanges.
3. A hierarchical model of accounting diversity classifies countries' accounting practices into successive layers to identify clusters of countries where the standards are similar.
4. Arguments for harmonization of global accounting practices include increasing the comparability of financial results, reducing the expense of raising capital globally, and reducing the problems multinational firms face when consolidating the results of foreign subsidiaries.
5. Arguments against harmonization stem from nationalistic resistance to accepting externally imposed standards, the value that diverse accounting practices have in addressing country differences in inflation rates and how firms are funded, and a belief that efficient global capital markets will result in an optimally efficient level of diversity in accounting regulation.
6. The IASB is working to establish a set of worldwide accounting standards and is working with the U.S. FASB on several projects designed to achieve convergence between the accounting standards of the two bodies.

CONCEPT CHECKERS: WORLDWIDE ACCOUNTING DIVERSITY AND INTERNATIONAL STANDARDS

1. All of the following are important factors in the diversity of global accounting standards EXCEPT:
   A. tax laws
   B. inflation rates.
   C. compliance costs.
   D. legal systems and political ties.

2. When an analyst classifies the accounting practices of various countries according to the factors that cause the differences between them, she is creating a:
   A. cluster model.
   B. diversity model.
   C. hierarchical model.
   D. harmonization model.

3. Which of the following problems is *least likely* to be solved by harmonization?
   A. Historical costs are less meaningful for firms in countries that have experienced high rates of inflation.
   B. Analysts should adjust earnings results when comparing global firms with U.S. firms to reflect the differences in tax laws.
   C. Multinational companies need to convert foreign subsidiaries' results to their domestic standards when they report consolidated financial statements.
   D. Before they can raise capital outside their home countries, companies must present results according to the standards of the country where they plan to issue securities.

ANSWERS – CONCEPT CHECKERS: WORLDWIDE ACCOUNTING DIVERSITY AND INTERNATIONAL STANDARDS

1. C Differences in legal systems, political ties, tax laws and inflation rates have all contributed to the development of diverse global practices. Compliance costs are a primary argument for harmonizing global accounting standards.

2. C In a hierarchical model, the accounting practices of many countries are classified into successive levels or layers by the various factors that drive differences in accounting practices. Such a model identifies clusters of countries where accounting practices are similar.

3. A The wide variation in different countries' historical inflation rates is one of the arguments against harmonization. In countries that have experienced rapid inflation, financial statements can better reflect economic reality if accounting standards allow price level adjustments to historical costs.