



Analysts use financial statement data to evaluate a company's past performance and current financial position in order to form opinions about the company's ability to earn profits and generate cash flow in the future.

## Financial Statement Analysis

### An Introduction

#### The roles of financial reporting and financial statement analysis:

The **role of financial reporting** is described by the IASB in its "Framework for the Preparation and Presentation of Financial Statements":

The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is useful to a wide range of users in making economic decisions.

The **role of financial statement analysis** is to use the information in a company's financial statements, along with other relevant information, to make economic decisions. Examples of such decisions include whether to invest in the company's securities or recommend them to other investors, or whether to extend trade or bank credit to the company. Analysts use financial statement data to evaluate a company's past performance and current financial position in order to form opinions about the company's ability to earn profits and generate cash flow in the future.

#### The role of key financial statements (income statement, balance sheet, statement of cash flows, and statement of changes in owners' equity) in evaluating a company's performance and financial position.

The **income statement** reports on the financial performance of the firm over a period of time. The elements of the income statement include revenues, expenses, and gains and losses.

The **balance sheet** reports the firm's financial position at a point in time. The balance sheet consists of assets, liabilities, and owners' equity. Transactions are measured so that the fundamental accounting equation holds:  $\text{assets} = \text{liabilities} + \text{owners' equity}$

The **cash flow statement** reports the company's cash receipts and outflows. These cash flows are classified as either operating, investing, or financing.

The **statement of changes in owners' equity** reports the amounts and sources of changes in equity investors' investment in the firm in a period of time.

**The importance of financial statement notes and supplementary information, including disclosures of accounting methods, estimates, and**

**assumptions, and management's discussion and analysis.**

**Financial statement notes (footnotes)** include disclosures that offer further detail about the information summarized in the financial statements. Footnotes allow users to improve their assessments of the amount, timing, and uncertainty of the estimates reported in the financial statements.

**Supplementary schedules** contain additional information. Examples of such disclosures include operating income or sales by region or business segment, reserves for an oil and gas company, and information about hedging activities and financial instruments.

**Management's Discussion and Analysis (MD&A)** provides an assessment of the financial performance and condition of a company from the perspective of its management. For publicly held companies in the U.S., 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, and a general business overview based on known trends.

**Ex:**

The Management Discussion and Analysis (MD&A) portion of the financial disclosure is required to discuss all of the following EXCEPT:

- A) expected effects of marketplace events.**
- B) capital resources and liquidity.**
- C) results of operations.**

What amounts should Ponca report in its year-end income statement and balance sheet as a result of its investment in securities X and Y?

Soln: Correct (A)

The MD&A portion of the financial disclosure is required to discuss results of operations, capital resources and liquidity and a general business overview based on known trends. A discussion of expected effects of marketplace events may voluntarily be included by a firm, but is not required in the MD&A portion.

**The objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls.**

An audit is an independent review of an entity's

financial statements. Public accountants conduct audits and examine the financial reports and supporting records. The objective of an audit is to enable the auditor to provide an opinion on the fairness and reliability of the financial statements.

The auditor's opinion gives evidence of an independent review of the financial statements that verifies that appropriate accounting principles were used, that standard auditing procedures were used to establish reasonable assurance that the statements contain no material errors, and that management's report on the company's internal controls has been reviewed.

An unqualified opinion indicates that the auditor believes the statements are free from material omissions and errors. If the statements make any exceptions to the accounting principles, the auditor may issue a qualified opinion and explain these exceptions in the audit report. The auditor can issue an adverse opinion if the statements are not presented fairly or are materially nonconforming with accounting standards.

Under U.S. GAAP, the auditor must state an opinion on the company's internal controls, the processes by which the company ensures that it presents accurate financial statements. The auditor can provide this opinion separately or as the fourth element of the standard auditor's opinion.

Under the Sarbanes-Oxley Act, management is required to provide a report on the company's internal control system.

**Information sources other than annual financial statements and supplementary information that analysts use in financial statement analysis.**

Besides the annual financial statements, an analyst should examine a company's:

- Quarterly or semiannual reports: These reports update the major financial statements and footnotes, but may not be audited.
- SEC filings: These include Form 8-K, which is used to report acquisitions and disposals of major assets or changes in management or corporate governance. Companies' annual and quarterly financial statements are also filed (Forms 10-K and 10-Q).
- Proxy statements, which 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,

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management qualifications, and the issuance of stock options.

- Corporate reports and press releases, which are written by management and are often viewed as public relations or sales materials. Not all of the material is independently audited.

An analyst should also review information on the economy and the company's industry and compare the company to its competitors.

Ex:

Earlier this year, Ponca Corporation purchased non-dividend paying equity securities which it classified as trading securities. Information related to the securities follows:

Security	Cost	Fair value at year-end
X	\$400,000	\$435,000
Y	\$550,000	\$545,000

What amounts should Ponca report in its year-end income statement and balance sheet as a result of its investment in securities X and Y?

Income Statement	Balance Sheet
A) \$30,000 unrealized gain	\$980,000
B) \$30,000 unrealized gain	\$950,000
C) No gain or loss	\$980,000

Soln: **Correct (a)**

Trading securities are reported in the balance sheet at fair value. At the end of the year, the fair value of the securities was \$980,000 (\$435,000 + \$545,000). The unrealized gains and losses from trading securities are recognized in the income statement. Thus, Ponca would recognize an unrealized gain of \$30,000 (\$980,000 fair value \$950,000 cost).

Ex:

On January 1, 2008, Tenant Company leased office space from Landlord Inc. for 5 years at \$75,000 per month. On that same date, Tenant made the following payments to Landlord:

First month's rent	\$75,000
Last month's rent	75,000
Security deposit	100,000
Lease improvements	1,500,000

The leasehold improvements include build-out costs to install office walls, restrooms, and a

kitchen. Tenant allocates the cost of the leasehold improvements over the lease term using the straight-line method. What amount of total lease expense should Tenant report for the year ended 2008 and what is the balance of all of the lease related assets on December 31, 2008, assuming the lease payments are made on the first day of each month?

Lease expense	Lease related assets
A) \$1,200,000	\$1,200,000
B) \$375,000	\$1,375,000
C) \$1,200,000	\$1,375,000

Total annual lease expense is \$1,200,000 [\$75,000 monthly payment × 12 months] + (\$1,500,000 lease improvements / 5 years). At the end of 2008, Tenant will report lease related assets of \$1,375,000 [\$75,000 prepaid rent + 100,000 deposit + \$1,200,000 book value of leasehold improvements].

The steps in the financial statement analysis framework.

1. **State the objective and context:** Determine what questions the analysis is meant to answer, the form it needs to be presented in, and what resources are available to perform the analysis.
2. **Gather data:** Acquire the firm's financial statements and other relevant data on its industry and the economy. Ask questions of the firm's management, suppliers, and customers, and visit firm sites.
3. **Process the data:** Make any appropriate adjustments to the financial statements. Calculate ratios. Prepare exhibits such as graphs and common-size balance sheets.
4. **Analyze and interpret the data:** Use the data to answer the questions stated in the first step. Decide what conclusions or recommendations the information supports.
5. **Report the conclusions or recommendations:** Prepare a report and communicate it to its intended audience. Be sure the report and its dissemination comply with the Code and Standards that relate to investment analysis and recommendations.

Update the analysis: Repeat these steps periodically and change the conclusions or recommendations when necessary.

# Financial Reporting Mechanics

## The relationship of financial statement elements and accounts, and classify accounts into the financial statement elements.

Transactions are recorded in accounts that form the financial statement elements of assets, liabilities, owners' equity, revenues, and expenses.

- **Assets** are the firm's economic resources.
- **Liabilities** are creditors' claims on the firm's resources.
- **Owners' equity** includes paid-in capital (common and preferred stock), retained earnings, and other comprehensive income.
- **Revenue** includes sales, investment income, and gains.
- **Expenses** include the cost of goods sold, selling and administrative expenses, depreciation, interest and tax expenses, and losses.

Ex: Information related to Bledsoe Corporation's inventory, as of December 31, 2007, follows:

Estimated selling price	\$3,500,000
Estimated disposal costs	50,000
Estimated completion costs	300,000
Original FIFO cost	3,200,000
Replacement cost	3,300,000

- Using the appropriate valuation method, what adjustment is necessary to accurately report Bledsoe's inventory at the end of 2007, and will this adjustment affect Bledsoe's quick ratio?

Adjustment	Quick ratio
A) \$50,000 write-down	Yes
B) \$100,000 write-up	No
C) \$50,000 write-down	No

Soln: Correct (c).

Inventories are valued on the balance sheet at the lower of cost or net realizable value. Net realizable value is equal to \$3,150,000 (\$3,500,000 selling price \$300,000 completion costs \$50,000 disposal costs). Since the original cost of \$3,200,000 exceeds the net realizable value of \$3,150,000, a \$50,000 write-down is necessary. An inventory write-down has no impact on the quick ratio since inventory is excluded from both the numerator and denominator of the quick ratio.

## The accounting equation in its basic and expanded forms.

The **basic accounting equation** is the relationship among the three balance sheet elements:

$$\text{assets} = \text{liabilities} + \text{owners' equity}$$

Owners' equity consists of capital contributed by the firm's owners and the cumulative retained earnings, so the **expanded accounting equation** is:

$$\text{assets} = \text{liabilities} + \text{contributed capital} + \text{ending retained earnings}$$

Ending retained earnings for an accounting period is the result of adding that period's retained earnings to beginning retained earnings. So the expanded accounting equation can also be stated as:

- A) -\$150.
- B) \$150.
- C) \$450.

**Soln: Correct (a)**

$$(1,200 - 750 - 600) = -150$$

Ex. The following amounts were drawn from the records of JME Company: total assets = \$1,200; total liabilities = \$750; contributed capital = \$600. Based on this information alone, retained earnings must be equal to:

$$\begin{aligned} \text{Assets} &= \text{Liabilities} \\ &+ \text{Contributed Capital} \\ &+ \text{Beginning Retained Earnings} \\ &+ \text{Revenue} \\ &- \text{Expenses} \\ &- \text{Dividends} \end{aligned}$$

## The process of recording business transactions using an accounting system based on the accounting equations.

Keeping the accounting equation (A = L + E) in balance requires double entry accounting, in which a transaction is recorded in at least two accounts. An increase in an asset account, for example, must be balanced by a decrease in another asset account or by an increase in a liability or owners' equity account.

## The need for accruals and other adjustments in preparing financial statements.

Revenues and expenses are not always recorded at the same time cash changes hands. The **principle of accrual accounting** requires that revenue is

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recorded when the firm earns it and expenses are recorded when the firm incurs them, regardless of whether cash has actually been paid. Accruals fall into four categories: unearned revenue, accrued revenue, prepaid expenses, and accrued expenses.

Accruals require an accounting entry when the earliest event occurs and one or more offsetting entries as the exchange is completed. The effect of accrual accounting is to recognize revenues or expenses in the appropriate period.

Most assets are recorded on the financial statements at their historical cost. In some cases, however, accounting standards require balance sheet values of certain assets to reflect their current market values. Entries that update these assets' values are called **valuation adjustments**. To keep the accounting equation in balance, changes in asset values are also changes in owners' equity, through gains or losses on the income statement or in other comprehensive income.

Ex: BIKAJI Ltd. issued 50,000 equity shares of Rs.10 each at par payable as

Rs.2 per share on application.

Rs.5 per share on allotment.

The balance on the first and the final call. Call money on 1,000 shares was not received. These shares were forfeited. Out of forfeited shares, 600 shares were reissued to Mr. Saketh at Rs.8 per share. Later, 100 shares were reissued to Mr. Vasanth at their paid up value the remaining 300 shares were subsequently reissued to Mr. Sachin at Rs.11 per share.

The amount transferred from shares forfeited account to capital reserve in respect of 300 shares reissued to Mr. Sachin is

Answer: **Rs.2,100**

Soln: Amount transferred to forfeited shares account is  $1000 \text{ shares} \times \text{Rs.7} = 7,000$

Less amount of Discount on reissued of 600 shares @ Rs.2 1,200

The amount transferred to capital reserve gain on 600 shares 3,000

$600 \times \text{Rs.7} = \text{Rs.4,200}$  (DB) Rs.1200

Amount transferred to capital reserve the gain on 100 shares which  $100 \times \text{Rs.7}$  are issued at par 700

Amount transferred to capital reserve the gain on 300 shares which are issued at premium  $300 \times \text{Rs.7} = 2,100$

Ex: Mazigon Ltd. issued 10,000 shares of Rs.100 each at a premium of Rs.20 per share of which 9,000 shares

are subscribed for. The amount to be paid is as follows: Rs.50 - on application, including premium of Rs.20.

Rs.50 - on allotment.

Rs.20 - on first and final call.

Call money was not received on 1,000 shares. On forfeiture of these shares, the amount standing to the credit of securities premium account is

Answer : Rs.1,80,000

Reason: The amount received on account of securities premium is  $9,000 \text{ shares} \times \text{Rs.20} = \text{Rs.1,80,000}$ . There is no impact of forfeiture of shares on securities premium account. The amount of premium received is to be utilized as per the provisions of the Companies Act.

### **The relationships among the income statement, balance sheet, statement of cash flows, and statement of owners' equity.**

The balance sheet summarizes the company's financial position at the end of the accounting period. Changes in the balance sheet during an accounting period are reflected in the income statement, the cash flow statement, and the statement of owners' equity.

Ex Alpha Company reported the following financial statement information:

December 31, 2006:		
Assets		\$70,000
Liabilities		45,000
December 31, 2007:		
Assets		82,000
Liabilities		55,000
During 2007:		
Stockholder investments	3,000	
Net income	?	
Dividends		6,000

Calculate Alpha's net income for the year ended December 31, 2007 and the change in stockholders' equity for the year ended December 31, 2007.

<u>Net income</u>	<u>Change in stockholders' equity</u>
A) \$5,000	\$2,000 increase
B) (\$3,000)	\$2,000 increase
C) \$5,000	\$2,000 decrease

**Soln: Correct (A)**

Stockholders' equity, as of December 31, 2006, was \$25,000 (\$70,000 assets \$45,000 liabilities) and stockholders' equity, as of December 31, 2007, was \$27,000 (\$82,000 assets \$55,000 liabilities).

Stockholders' equity increased \$2,000 during 2007. Net income for 2007 was \$5,000 (\$27,000 ending equity + \$6,000 dividends \$3,000 stockholder investments \$25,000 beginning equity).

**The flow of information in an accounting system.**

Information flows through an accounting system in four steps:

1. **Journal entries** record every transaction, showing which accounts are changed by what amounts. A listing of all the journal entries in order by date is called the "general journal."
2. The **general ledger** sorts the entries in the general journal by account.
3. At the end of the accounting period, an **initial trial balance** is prepared that shows the balances in each account. If any adjusting entries are needed, they will be recorded and reflected in an **adjusted trial balance**.
4. The account balances from the adjusted trial balance are presented in the **financial statements**.

**The use of the results of the accounting process in security analysis.**

An analyst doesn't have access to the detailed information that flows through a company's accounting system, but only sees its end product, the financial statements. The analyst needs to understand the various accruals, adjustments, and management assumptions that went into the financial statements. Much of this is often explained in the footnotes to the statements and in Management's Discussion and Analysis. With this information, the analyst can better judge the company's true performance.

Because adjustments and assumptions are to some extent at the discretion of management, the possibility exists that management can try to manipulate or misrepresent the company's financial performance. A good understanding of the accounting process can help an analyst identify financial statement entries that look suspiciously out of line.

Ex GTO Corporation purchased all of the common stock of Charger Company for \$4 million. At the time, Charger reported total assets of \$3 million and total liabilities of \$1 million. At the acquisition date, the fair value of Charger's assets was \$3.5 million and the fair value of Charger's liabilities was \$1.3 million. What amount of goodwill should GTO report as a result of the acquisition and is it necessary for GTO to amortize the goodwill?

<u>Goodwill</u>	<u>Amortization required</u>
A) \$1.8 million	No
B) \$1.8 million	Yes
C) \$2.2 million	No

Soln: Correct (a)

The acquisition goodwill is equal to \$1.8 million [\$4 million purchase price \$2.2 million fair value of net assets acquired (\$3.5 million assets at fair value \$1.3 million liabilities at fair value)]. Under IFRS or U.S. GAAP, goodwill is not amortized but is subject to an annual impairment test.

Ex At the beginning of the year, Alpha Corporation purchased 10,000 shares of Beta Corporation for \$20 per share. During the year, Beta paid a \$2,000 cash dividend to Alpha. At the end of the year, Beta's stock was selling for \$22 per share. What amount should Alpha recognize in its year-end income statement if the investment is treated as an available-for-sale security and what amount should be recognized in the income statement if the investment is treated as a trading security?

<u>Available-for-sale</u>	<u>Trading security</u>
A) \$2,000	\$20,000
B) \$0	\$22,000
C) \$2,000	\$22,000

Soln: Correct (c)

Unrealized gains and losses from trading securities are recognized in the income statement while unrealized gains and losses from available-for-sale securities bypass the income statement and are reported as other comprehensive income, a component of stockholders' equity. Cash dividends are recognized in the income statement for both trading and available-for-sale securities. Thus, Alpha will recognize only the \$2,000 dividend if the shares are considered available-for-sale and will recognize \$22,000 (\$2,000 dividend + \$20,000 unrealized gain) if the shares are considered trading securities.

Ex: For the year ended December 31, 2007, Gremlin Corporation reported the following transactions:

- Issued 5,000 shares of preferred stock for land with a fair value of \$4.8 million.
- Purchased a patent for \$3.3 million cash.
- Acquired 40% of the common stock of an affiliate for \$2.7 million cash which was borrowed from a bank.
- Exchanged equipment with a book value of \$1.7 million for equipment valued at \$2.1 million. The

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exchange was an even trade.

- Converted bonds payable with a book value of \$5 million to 50,000 shares of common stock with a fair value of \$6 million.

Calculate Gremlin's cash flow from investing activities and cash flow from financing activities for the year ended December 31, 2007.

Cash flow from investing activities

- A) \$1.7 million inflow
- B) \$6.0 million outflow
- C) \$2.7 million outflow

Cash flow from financing activities

- \$1.3 million outflow
- \$2.7 million inflow
- \$6.0 million inflow

Soln: Correct (B)

Only the acquisition of common stock of the affiliate for \$2.7 million and the purchase of the patent for \$3.3 million are included in cash flow from investing activities. Since the acquisition of the stock purchase was financed with a bank loan, \$2.7 million will be reported as a financing inflow. Both remaining transactions are non-cash transactions and are disclosed in the notes to or in a supplementary schedule to the cash flow statement.

## IMPORTANT FORMULAS

Market Capitalisation	=PRICE X NO.OF SHARES
PE (Price To Earning)	=PRICE / EPS
EPS (Earning Per Shares)	=(NET PROFIT - PREFERRED DIVIDEND) / NO.OF SHARES
Book Value Per Share (BVPS)	=NETWORTH / NO. OF SHARES
PRICE TO Book Value	=PRICE / BV
NETWORTH	=EQUITY PAID UP + RES. & SURPLUS- Revaluation Reserves
DIVIDEND YIELD	=DIVIDEND % (annualized) X FV / DLY PRICE
DIVIDEND IN RS	=DIVIDEND % X FV / 100
PBIDT	=OPERATING PROFIT (in Cline theory only)
PBDT	=GROSS PROFIT (in Cline theory only)
APAT	=NET PROFIT
CPM	=CASH PROFIT MARGIN
GROWTH QUERY	(CURRENT YR - PREVIOUS YR) / PREVIOUS YR * 100
ENTERPRISE VALUE	MCAP+DEBT CASH & BANK BALANCE
IN CASE OF BANKS	MCAP+DEPOSITS+BORROWINGS CASH & MONEY
CAGR	$\left(\frac{[FINANCE_2].[NP]}{[FINANCE_1].[NP]}\right)^{(1/5)-1} * 100$
CASH PROFIT	NETPROFIT + Depreciation
FREE FLOAT	TOTAL NO. OF SHARES - PROMOTERS HOLDING
VALUE OF PROMOTER HOLDING	HOLDINGS].[NSPROMOTER] * [DLYPRICE].[CLOSE]
OUTSTANDING SHARE =	EQUITY CAPITAL / FACE VALUE
Cost of production :	Raw material cost + Power & fuel + Employee Cost + Director Remuneration + other operating expense + Depreciation + Insurance + opening stock of WIP - closing stock of WIP
Value of Output:	Net Sales + change in stock
Selling Cost:	Advertisement + Distribution Expenses+ Commission expenses on sales

Total Assets/Liabilities (Excluding Reval & W.off) :	Share Capital + Reserves + Debt + Current Liab & provision Misc. Exp
Average Days of Debtors :	Debtors / (Cost of Production / 365 days)
Average Days of Creditors :	(Creditors / (Cost of Production + Selling Cost)/(closing stock of Finished Goods-opening stock of Finished Goods)/365 days)
CP (Cash Profit) :	Net Profit (PAT) + Depreciation

### Valuation Ratio

PE :	Close Price / EPS
Price to BV :	Close price / Book Value
Price / Cash Earning Per Share :	closing price / (Net profit - preference dividend - dividend tax + Depreciation) / Equity paid up * FV
EV/EBITA :	(Market Cap + Debt-Cash and Bank) / (GP + Interest)
In case of Banks EV= Market Cap + Deposits + Borrowings Cash & Money	
Market Cap /Sales	= Market cap / Gross Sales in case of Banks & Finance company Sales is including other income

### Dupont Model

Fixed asset:	Net block + capital work in progress
NET working capital :	Current asset-current liabilities
Net asset :	Fixed asset+NW capital+ investment
For Banks: Sales :	Sales + other Income

### Ratio

PBIDT \Sales % :	(GP + interest) / Gross sales*100
Sales / Net Asset :	Gross Sales / Net Asset
PBDIT/Net Assets :	PBIDT (operating Profit) / Net Asset
PAT/PBIDT(%) :	Net Profit / PBIDT *100
Net Assets/Net Worth :	Net Asset / Net worth (Excluding Revaluation reserve)
ROE :	(Adjusted net profit preference dividend) / (equity paid up + reserves) * 100
DPS :	Dividend amount * Face Value / Equity Paid up

**NOTE :** ALL BALANCE SHEET ITEMS ARE AVERAGE OF TWO YEARS AND PROFIT AND LOSS FIGURES ARE ANNUALISED. **NOTE :** In Margin Ratio Capital Market Taking Gross Sales.