Chapter 18

INTERPRETATION OF ACCOUNTS

Parties interested in Financial Statement Analysis

- Shareholder, investors and security analysis
- Managers
- Employees
- Vender and other suppliers
- Customers
- Govt./Regulatory agencies
- Other parties

Conflict among diverse parties

- Shareholders and managers
- Shareholders and creditors
- Shareholders and customers

Reasons of Financial Statement Analysis

- Potential of the information to reduce uncertainty
- Availability of competing information sources

The areas of analysis depends upon the user

Trade creditors	Net current assets Composition of net current assets Priority of payment Past earning and growth record
Bankers	Adequacy of profit level Presence of other charges Current debt / equity ratio
Potential takeover bidders	Profit including unusual items Return on capital employed Indication of true value of assets Level of liquid assets
Potential small investors	Trends of costs, sales and profit Dividend cover Dividend payout ratio Earning per share Price earning ratio

Types

Internal

- Carried out by the management using
- Actual date
- Latest operating results
- Future projection and forecasts

External

- Carried out by users of F.S based on the published accounts
- Manipulated
- Obsolete
- Historic

Techniques

A- Horizontal Analysis
B- Ratio Analysis
C- Trend Analysis

A- Horizontal Analysis

Horizontal analysis is the 'inter temporal' analysis i.e. line by line comparison of:

- Sales
- Cost of sales
- Gross profit
- Operating expenses
- Operating profit
- Financial charges
- Profit after tax
- Dividends

Note use common sized financial statements if Horizontal Analysis is made within two enterprises.

B- Ratio Analysis

Interpretation is normally done using ratio analysis. Ratio analysis reveals the strengths and weaknesses of the entity.

Assumptions for the ratio analysis

- To control for the effect of size different across firm or over time
- To proof a theory in which a ratio is the variable of the interest
- To exploit on observed empirical regularity between a financial ratio and the estimation or predictions of a variable of interest.

Computational issues in calculating ratios

- Negative denomination
- Outlier observations
  - Accounting classification
  - Accounting methods
  - Economic
  - Structural change

Areas of analysis

- Profitability
- Capital / investment structure
- Liquidity / working capital
- Security

Comparison with

- Prior period
- Similar business
- Industry averages

Problems of ratios:

i) Seasonal and other factors may mean that the balance sheet values may be typical
ii) There may be window dressing
iii) Concern the past
iv) They are of little value if not used in comparisons.

I. *Profitability Ratios*

Return on ordinary equity $\dfrac{PAITAPD}{Average\ ordinary\ equity}\times 100$

Purpose: this ratio measure the residual profit in relation to owner's equity

Return on capital employed $\frac{PBITAPD}{Capital + \mathrm{Re}\,serves + Long\ Term\ Liabilities + PS} \times 100$

Purpose: Shows how productively a business is using its resources. It relates overall profit performance to the total amount of capital employed.
Meaning: If ROCE is low or falling

- Usually a bad sign and the business are not using its resources efficiently.
- Need to investigate further, there may be a need to sell certain assets and may be invested elsewhere to earn high returns

Comparison: - 1. Previous years ROCE- But be ware that the following factors may create distortions.
   - Assets which are written down to low book value (Overstating ROCE)
   - Revaluations will depress ROCE
   - Timing of debt / share issue
   - Changes in accounting policies

2. Enterprise's target ROCE
3. ROCE should exceed the borrowing cost
4. Other enterprises in the same industry keeping in view the following factors
   - Different accounting policies
   - Aging of plant and equipment
   - Certain leased assets

Interrelationship with other ratios

ROCE $\frac{\mathrm{Pr}\,ofit}{Sales} \times \frac{Sales}{Capital\ employes}$

Gross profitability x Asset Turnover

Profitability
- Gross profit %
- Net profit %

Efficiency
- Asset turnover
- Long term asset turnover
- Inventory turnover
- Debtors turnover
- Creditors turnover

Price earning ratio $\frac{Market\ value}{Earning\ per\ share}$

Purpose: to measure, as a multiple, the quality of current and prospective earnings.
Meaning: Shows the number of years it would take to recoup the investment from its share of profits. If the ratio is high then the investor is confident that the enterprise will perform better in future and expect faster growth in EPS.

Dividend yield $\frac{Dividend\ per\ share}{Mv\ per\ share}$

Purpose: A measure of return on (dividend) on the investment.

EPS $\frac{Net\ operating\ profit\ after\ tax\ and\ \text{int}erest}{No.of\ ordinary\ shraes}$

Purpose: this ratio measures the profit per share

Meaning: As the new projects do not generate cash flows immediately therefore, for a new project the EPS may be low. Further, the profits of entities are affected by the accounting policies adopted, therefore, in making comparison of different entities this fact should be kept in mind.

Earning yield $\frac{EPS}{Mv}$

Purpose: -This ratio measures the return on cost of investment (i.e. market value)

Dividend payout ratio $\frac{Dividend\ per\ share}{EPS}$

Purpose: - This ration tells about the portion of total profit, which has been paid/declared as dividend.

Gross Profit Ratio $\frac{Gross\ profit\ X100}{Sales}$

Purpose: provides an insight into the relationship of sales, production cost/purchases

If gross profit ratio is declining this may be due to any of the following: -

- Fall is sale price
- Increase is purchase prices
- Change in production mix
- Increased production cost
- Opening inventories may be overstated
- Closing inventories may be understated
- Sales prices may be reduced due to launch of new products or attempting to get more market share

More in-depth analysis can be made by breaking down the cost of production into its elements i.e. purchase prices, labor cost and production overheads.

Operating profit to sale ratio $\frac{Operating\ profit\ X100}{Sales}$

Purpose; to show the overall profitability after deducting all the expenses

Meaning: it shows the control over operating expenses

Further analysis can be done by calculating the various expenses to sales ratio

Contribution to Sales (C/S) $\frac{Sales - Variable\ Cost\ X\ 100}{Sales}$

Purpose: The C/S ratio is a measure of how much contribution is earned from each penny of sales. The C/S ratio should be used in relation with G.P and N.P ratios.

Cost to Sales Ration

Cost of sales to sales ratio $\frac{Cost\ of\ Sales\ \ X\ 100}{Sales}$

Distribution cost to sales ratio $\frac{Distribution\ \text{cos}\ t\ X\ 100}{Sales}$

Administrative cost to sales ratio $\frac{Ad\ \text{min}\ istrative\ \text{cos}\ t\ X\ 100}{Sales}$

When particular area of weakness are to find

Material cost to sales ratio	$\frac{Material\ costs\ X\ 100}{Sales\ value\ of\ production}$
Works labor cost to sales ratio	$\frac{Works\ Labour\ Cost\ X\ 100}{Sales\ value\ of\ production}$
Production overheads to sale ratio	$\frac{Production\ overheads\ X\ 100}{Sales\ value\ of\ production}$

II ***Capital investment structure***

Capital structure → Debt equity or Gearing ratio

$$\frac{Long\ term\ debt}{Long\ term\ debt\ and\ equity}$$

Purpose: - to measure the proportion of borrowed funds to the owner's equity and provide information about the financial risk of the business.

The main advantage of debt is cheapness and main disadvantage is increase in financial risk.

Investment structure

$$\frac{Long\ term\ debt\ and\ equity}{Fixed\ assets}$$

$\frac{F.A}{T.A}$, $\frac{C.A}{T.A}$

Investments / T.A.

III ***The Liquidity / Working Capital Ratios***

Current ratio $\frac{Current\ assets}{Current\ liabilities}$

Purpose: - To measure the adequacy of current assets to meet current liabilities

Quick ratio $\frac{Current\ assets - stocks}{Current\ liabilities}$

Purpose: - To measure the immediate liquidity of the business

Debtor turnover ratio $\frac{Credit\ sales}{Average\ debtors}$

$$365 \times \frac{Average\ debtors}{Credit\ sales}$$

Creditor turnover ratio $\frac{Credit\ purchases}{Average\ creditors}$

$$365 \times \frac{Average\ creditors}{Credit\ purchases}$$

Stock turnover ratio

F.G	$\frac{COGS}{Average\ stock}$	$\frac{Average\ stock}{COGS} \times 365$
Mat	$\frac{COMU}{Average\ stock}$	$\frac{Average\ stock}{COMU} \times 365$
W.I.P	$\frac{COGM}{Average\ stock}$	$\frac{Average\ stock}{COGM} \times 365$

IV *Security ratios*

Creditors – L.T $\frac{Net\ worth}{L.T.creditors}$

- S.T. $\frac{Net\ worth}{S.T.creditors}$

Lenders

Interest cover $\frac{Net\ profit\ before\ tax\ and\ \text{int}\ erets}{Interest}$

Purpose: - To show the extent to which the return on debt is covered by the profits.
Meaning: - This ratio is normally used by the lenders to determine vulnerability of interest payments due to drop in profits.

Share holders

Dividends cover $\frac{Net\ profit\ after\ tax}{Dividend}$

Purpose: - To show the number of times the dividends are covered by the profits.
Meaning: - Exceptional items should be excluded to avoid the distortions.

Dividend payment $\frac{Dividend}{Net\ profit\ after\ tax}$

Trend Analysis

That is by including a summary of the results of the company for the last few years within annual financial statements, the reader is shown how the company has arrived at its present position.

Factors to be considered in trend analysis

- Change in accounting policy
- Inflation

Layout of the Report

The contents of the report are: -

- Index
- Address, date and title
- Introduction
- Key assumptions
- Information used – source
- Discussion of the results
- Conclusion
- Appendices for calculations of various ratios trends

Z test

$$z = 0.12x_1 + 0.014x_2 + 0.033x_3 + 0.006x_4 + 0.01x_5$$

$$x_1 = \frac{w.c}{T.assets} \quad x_2 = \frac{\text{Re}\,tained\ earnings}{total\ assets}$$

$$x_3 = \frac{Earning\ before\ \text{int}\,erest\ and\ tax}{total\ assets} \quad x_4 = \frac{Mv\ of\ \Sigma q}{book\ value\ of\ debts}$$

$$x_5 = \frac{Sales}{total\ assets} \qquad Z \geq 2.675\ (survive)$$

PAST PAPERS

Q.1

(a) To analyze financial statements, two methods viz. horizontal and vertical analysis are used. What is the difference between horizontal analysis and vertical analysis? **(04)**

(b) To ascertain the following ratios which of the above two methods has to be applied to each of them?

- (i) Increase in sales by 20%
- (ii) Net sales to cost of sales 1.2 : 1.00
- (iii) Increase in gross profit 5% over previous year
- (iv) Gross profit to sales 25%
- (v) Decrease in administration expenses 10%
- (vi) Net sales to fixed assets 3 : 1
- (vii) Net profit to equity 10%
- (viii) Financial charges decreased by 5%
- (ix) Dividend distributed 2% more than previous year
- (x) Current assets to current liabilities 1.5 : 1.00

Q.2

Mehran Industries Limited is a private limited company, incorporated in Pakistan, which started its business some ten years ago and its main business is manufacturing of high quality towels.

In September 2004 the management of the company requested its bankers for long term finance of Rs. 100 million for modernization of plant and machinery. The company has provided the following significant ratios (with industry comparison):

Key ratios	**2004**	**2003**	**2002**	**2001**	**Industry average**
Debt : Equity ratio	0.20	0.10	0.00	0.00	0.50
Quick ratio	0.70	1.10	1.60	1.40	1.00
Current ratio	2.20	2.90	3.20	2.70	2.50
Stock turnover (times)	2.80	4.30	6.90	N/A	6.00
Debtors days	50	37	34	N/A	33
Fixed assets turnover	12.40	10.80	11.60	N/A	13.00
Total assets turnover	1.90	2.60	3.10	N/A	2.60
Return on total assets %	2.80	6.30	12.30	N/A	9.00
Profit margin on sales %	1.40	2.40	3.90	N/A	3.50

Required:

a) Draw up a 'Memorandum' for the bank manager showing the strengths and weaknesses of the above financial ratios.

b) What other factors the bank manager should consider before approving or rejecting the loan? **(15)**

Q.3

As a credit analyst in a bank, you have been given the following summarized profit and loss statement and balance sheet of XYZ Limited:

Profit and loss account
For the year ended September 30, 2005

	Rs. '000
Sales	62,400
Cost of goods sold	51,090
	11,310
Selling and administrative expenses	1,560
Profit before interest and tax	9,750
Interest expense	1,755
Profit before tax	7,995
Tax	3,198
Profit after tax	4,797

Balance Sheet
As on September 30, 2005

	Rs. '000'
Capital and liabilities	
Paid up capital 1,365,000 shares of Rs.10 each	13,650
Retained earnings	4,680
Debentures	29,250
Creditors	7,020
Bills payable	780
Other current liabilities	3,120
	58,500
Assets	
Net fixed assets	31,200
Inventory	15,600
Debtors	7,825
Marketable securities	1,925
Cash	1,950
	58,500

Current market price per share is Rs.22/-
Industry's averages are as follows:

• Current ratio	2.3
• Quick ratio	1.6
• Sales to inventory	7.0
• Average collection period	32 days
• Price per share / book value of the share	1.4
• Debt to assets ratio	38%
• Time interest earned	7
• Profit margin	8%
• Price to earning ratio	10
• Return on total assets	10%

Required:

(i) XYZ Limited has applied for a short term loan of Rs.20 million. You are required to evaluate the financial position of XYZ Limited and advise whether the loan may be sanctioned.

(ii) What will be your evaluation if sales to inventory ratio and average collection period are reduced to the industry average? **(12)**

Q.4

Mr. Hali, a stock investor, wants to invest in ordinary and/or preference shares of Ibrahim Limited, a company listed on all stock exchanges of Pakistan. He has contacted you to study the following financial information of Ibrahim Limited:

Profit and Loss Account for the Year Ended June 30, 2007

	Rs. in million
Profit before tax	2,400
Less: Income tax @ 35%	(840)
Profit after tax	1,560
Less: Preference dividend	(200)
Retained profits attributable to ordinary shareholders	1,360

Balance Sheet as at June 30, 2007

	Rs. in million
ASSETS	
Fixed assets	23,000
Current assets	12,400
	35,400
EQUITY AND LIABILITIES	
1,000,000,000 ordinary shares of Rs. 10 each	10,000
10% preference shares of Rs. 10 each	2,000
	12,000
Accumulated profit	3,400
Total equity	15,400
Long term loans – from commercial banks	9,800
Current liabilities	10,200
	35,400

Additional Information:

(i) At the balance sheet date, the market values of the ordinary and preference shares of Ibrahim Limited were Rs. 15 per share and Rs. 11 per share respectively.

(ii) The board of directors announced 10% cash dividend for the year ended June 30, 2007.

(iii) The pre-tax profits for the next year are forecasted to be 5% higher as compared to the current year.

(iv) The fair value of fixed assets as at June 30, 2007 is estimated at Rs. 26,000 million.

Required:

(a) Analyze the significant financial features which should be considered before any decision is taken by Mr. Hali to invest in Ibrahim Limited's ordinary and / or preference shares.

(b) List any four types of information which may help you in a better analysis. **(15)**

Q.5

You are working as a Financial Analyst in Brown Venture Capital Limited. Your company has received an offer for equity investment in a large group of companies. While reviewing the consolidated financial statements of the group and detailed offer documents, you have noted the following significant judgments, estimates and assumptions used in preparation of the consolidated financial statements, which may have an impact on the independent evaluation of the affairs and operations of the group.

Operating Lease Commitments
The Group has entered into commercial property leases as a Lessee. The Group has determined, based on an evaluation of the terms and conditions of the arrangements, that it does not acquire all the significant risks and rewards of ownership of these properties and so accounts for the contracts as operating leases.

Convertible Preference Shares
The Group has determined, based on an evaluation of the significant terms and conditions of the issue, that these securities fall under the category of liability rather than equity, and have been disclosed and accounted for accordingly.

Pension and Other Post Employment Benefits
The cost of defined benefit pension plans and other post employment benefits is determined using actuarial valuations. The actuarial valuation involves making assumptions about discount rates, expected rates of return on assets, future salary increases, mortality rates and future pension increases. Due to the long term nature of these plans, such estimates are subject to significant uncertainty.

Impairment of Non-Financial Assets
All non-financial assets including goodwill and other intangibles are assessed for impairment at each reporting date and at any other time when there are indications of impairment. When value in use calculations are undertaken, management has to estimate the expected future cash flows from the asset or cash-generating unit and choose a suitable discount rate in order to calculate the present value of such cash flows.

Useful Lives of Property, Plant And Equipment
The Group has invested significant amounts in acquisition of items of property, plant and equipment (PPE). Generally, the Group follows a prudent practice and estimates the useful economic lives of such assets to the enterprise on a minimum side.

Provision for Decommissioning
The activities of the Group normally give rise to obligations for site restoration. In determining the amount of the provision, assumptions and estimates are required in respect of discount rates and the expected cost of dismantling and removing the plants from the site.

Required:
You have assessed that the managements judgments, estimates and assumptions may turn out to be incorrect. What will be the impact of any error in management's estimates and assumptions, on the following:
- Liquidity, profitability and gearing ratios of the group;
- Business valuation of the group.

Give brief explanations to justify your conclusions. **(20)**

Q.6

Sachal Limited (SL) is planning to acquire 100% shareholdings in Waris Limited (WL). Before submission of financial proposal, SL is carrying out an analysis of WL's financial and operating performance. The CFO of SL has gathered the following information which is based on the financial statements for the year ended December 31, 2008:

Description	**WL's Ratios**	**Industry Ratios**		
		High	**Low**	**Average**
Operating Performance Ratios				
Gross profit	29%	30%	20%	25%
Operating profit	11%	15%	10%	13%
Return on shareholders equity	9%	13%	7%	10%
Working Capital Ratios				
Current ratio	1.54 : 1	2:01	1:01	1.5 : 1
Inventory turnover days	83 days	114 days	81 days	91 days
Receivables collection	93 days	95 days	60 days	74 days
Gearing Ratios				
Debt equity ratio	55 : 45	60 : 40	40 : 60	50 : 50
Interest cover	1.3 times	3 times	1.2 times	2 times
Investors Ratios				
Earnings per share	Re. 0.9	Rs. 1.8	Re. 0.75	Rs. 1.2
Dividend per share	Re. 0.2	Re. 0.9	Re. 0.25	Re. 0.6

Required:

(a) Draft a report to the board of directors, on behalf of the CFO, analyzing the financial performance of Waris Limited by evaluating each category of ratios in comparison with the industry. ***(Do not write your name or any identification in the report)*** **(12)**

(b) List any four types of additional information which would have helped you in a better analysis. **(04)**

Q.7

Following are the extracts from the latest annual published accounts of the two companies which are engaged in similar types of businesses.

Statement of Financial Position

	AB Limited	**XY Limited**
	Rupees in million	
Property, plant and equipment	275	390
Inventories	125	45
Account receivables	130	50
Cash and bank balances	10	6
	540	**491**
Share capital (Shares of Rs. 10 each)	210	215
Retained earnings	190	90
Long term liabilities	60	105
Current liabilities (other than bank overdraft)	80	60
Bank overdraft	-	21

	540	**491**

Income Statement for the year

Sales	900	825
Cost of sales	(500)	(530)
Gross profit	**400**	**295**
Operating and other expenses	(135)	(150)
Financial expenses	(6)	(10)
Profit before taxation	**259**	**135**
Taxation	(100)	(55)
Profit after taxation	**159**	**80**
Share market price at year end	**140**	**50**

Required:

(a) Comment on the strategic outlook of the management of the above companies based on their debt equity ratio and liquidity position.

(b) Based on the price earnings ratio comment on the attractiveness of the two companies, from the investors point of view. ***(10 marks)***

Q.8

Primate Mart Limited (PML) operates a network of several retail stores throughout the country. In order to retain its market share and achieve growth in revenue, PML has extended substantial credit facilities to its major customers. Consequently, PML's bank borrowings have increased substantially over the past few years. PML has recently requested its bank for further increase in its borrowing facilities.

The bank is concerned about the increase in the quantum of loans extended to PML and has appointed you to analyse the financial performance of PML for the last three years. The information available in respect of the company is as follows:

(i) Statement of financial position

	2012	**2011**	**2010**
	Rs. in million		
Property, plant and equipment	322	290	278
Stock-in-trade	620	540	440
Trade debts	443	385	344
Cash	15	12	12
	1,400	1,227	1,074
Share capital	90	90	90
Retained earnings	282	288	291
	372	378	381
Long term loans from bank	420	355	212
Short term running finance	320	200	200
Trade creditors	280	284	277
Tax payable	8	10	4
	1,400	1,227	1,074

(ii) Income statement

	2012	**2011**	**2010**
	Rs. in million		

Sales – Cash	1,050	940	790
– Credit	450	380	320
Total sales	1,500	1,320	1,110
Cost of sales	(996)	(864)	(723)
Gross profit	504	456	387
Other operating costs	(384)	(341)	(288)
Profit from operations	120	115	99
Financial charges	(102)	(79)	(57)
Profit before taxation	18	36	42
Taxation	(6)	(12)	(14)
Profit for the year	12	24	28
Depreciation for the year	33	36	42
Proposed dividend	10%	20%	20%

(iii) The present borrowing limit sanctioned to PML is Rs. 750 million.

Required:
Prepare a report for the bank containing an analysis of the financial performance of the company for the period covered by the financial statements. Your report should focus on the particular concern of the bank regarding the rapidly increasing level of lending exposure to PML and suggest matters which the bank may discuss with the PML's management. ***(Assume your name is Bashir Ahmed)*** (15)

SHARE VALUATION METHODS

1. Dividend yield = $\frac{Dividend}{M.V}$

   First calculate the dividend yield of quoted co and add 10% to 20% to get the dividend yield of unquoted co.

2. Earning yield = $\frac{EPS}{M.V}$

   First calculate the earning yield of quoted co and then add 10% to 20% to get the earning yield of unquoted co.

3. P.E ratio = EPS x P.E. (adjusted from quoted co.)

   First calculate the P.E ratio of quoted co and then minus 10% to 20% of it and get the P.E ratio of unquoted co.

4. Merger = $V_o = \frac{Y_o(1+g)}{y-g}, y_o =$ the combined earnings

   Minus form this value the value of holding co to get the maximum value of S co.

5. Net tangible Assets basis, simple (i) replacement (ii) realizable basis and divide by the no. of share

6. Capitalization of profits

   Without growth $V_o = \frac{Average\ profits}{requried\ reate\ of\ return}$

   With growth = $\frac{Average\ profits\ (1+g)}{requried\ rate\ of\ return - g}$ $\quad g = growth$

7. Berliner Method

   Take the average of all the methods or some from earning based methods and some from asset based and take the simple average.

8. Dual capitalization method

   Calculate the earnings available to tangible assets and leftover earnings should be for intangible assets. Capitalize the earnings to get the value of intangible assets.

   Value = $\frac{Value\ of\ \tan gible\ assets + vlaue\ of\ \operatorname{int} angible\ assets}{No.of\ shares}$

9. Discounted cash flow method

   Adjust the profits to cash flows and capitalize the last year profit using required rate of return discount all the cash flows and current year.

   Value $= \frac{Total\ of\ discounted\ cashflows}{No.of\ shares}$

10. Capitalization method scientific

    Deduct from the earning the non-operating earnings. Capitalize the operating earnings and add the market value of the assets whose earnings are deducted and divide by the no. of shares.

Q-1

XL (Private) Limited is a long established company and provides a range of services to business organizations for development of their human resources. Most of its staff consists of qualified and experienced professionals.

The company plans to expand its business by establishing a research division. In this respect, XL is evaluating a proposal for raising finance by issuing ordinary shares. To

estimate value of its shares, XL has identified a listed company, PL Limited, which is engaged in similar business.
Financial statistics and other information as of 30 September 2011, for XL and PL, are given below:

	XL Limited Rs. (million)	PL Limited Rs. (million)
Ordinary share capital as at 1 October 2010 (Rs. 10 each)	400	1,000
10% cumulative preference shares as at 1 October 2010 (Rs. 10 each)	120	--
Right shares issued on 1 April 2011 (Rs. 10 each)	--	100
Total comprehensive income	292	600
Dividend paid	168	500

PL issued right shares on 1 April 2011 at Rs. 25 per share. The prevailing market price per share on the date of issue and on 30 September 2011 was Rs. 35 and Rs. 40 respectively.
PL's total comprehensive income includes unrealized gain of Rs. 15 million on investments available for sale.
Annual rate of growth in earnings and dividends for XL and PL is estimated at 5% and 4.5% respectively. The cost of equity of companies having similar businesses is estimated at 15% per annum.
Required: -

a) Compute the value of XL's shares as on 30 September 2011 based on:-
   i) P/E ratio
   ii) Dividend yield
b) Identify any weaknesses of each of the above valuation methods.