

Pondicherry University
Directorate of Distance Education

MBA – 1ST SEMESTER
ACCOUNTING FOR MANAGER

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Unit -2 – Depreciation & Ratio Analysis

Prepared by
Dr. V. Umasri,
Assistant Professor,
Directorate of Distance Education,
Pondicherry University

Depreciation

Depreciation reduces the value of assets on a residual basis. It also reduces the profits of the current year.

Depreciation indicates reduction in value of any fixed assets. Reduction in value of assets depends on the life of assets. Life of assets depends upon the usage of assets.

There are many deciding factors that ascertain the life of assets. For example, in case of a building, the deciding factor is time. In case of leased assets, the deciding factor is the lease period. For plant and machinery, the deciding factor should be production as well as time. There can be many factors, but the life of assets should be ascertained on some reasonable basis.

Provision for depreciation is essential to ascertain the true profit earned or true loss incurred by a business house during a year and to show a correct financial position in the balance sheet at the end of the year.

Why Do We Need to Account for Depreciation?

Needs to provide depreciation:

To ascertain the true profit during a year, it is desirable to charge depreciation.

To ascertain the true value of assets, depreciation should be charged. Without calculating the correct value of assets, we cannot ascertain the true financial position of a company.

Instead of withdrawal of overstated profit, it is desirable to make provisions to buy new assets to replace old asset. The accumulated value of depreciation provides additional working capital.

Depreciation helps in ascertaining uniform profit in each accounting year.

Depreciation allows to take the advantage of tax benefit.

Basic Factors of Depreciation

While calculating depreciation, there are certain basic factors which have to be taken into consideration.

These factors are as follows

- (i) **Cost of the asset** : Depreciation has to be calculated on the basis of the cost of the asset to be depreciated. The cost includes the price paid for the asset, the amount spent on its acquisition, freight, octroi, carriage and installation of the asset.
- (ii) **Useful life of the asset** :- Another factor that affects the amount of depreciation is the useful life of the asset. A machinery may be capable of running for 15 years but if the firm is expected to replace it after 10 years due to obsolescence the estimated useful life of the machine will be considered to be 10 years for the purpose of calculating depreciation.
- (iii) **Scrap Value** : The scrap value of the asset at the end of the useful life of the asset The estimated scrap value is deducted from the cost of the asset for calculating depreciation. If in a question, the scrap value of the asset is not given, it should be assumed that it is nil. So much depreciation has to be provided as will reduce the value of the asset to its scrap value at the end of its estimated life.

Accounting Entries Related to Assets and Depreciation

Accounting entries related to assets and depreciation:

S.No.	Particulars	Journal Entries	
1	Purchase of Fixed Assets	Asset A/c To Bank A/c	Dr.
2	Expenses on purchase of Fixed Assets	Related Asset A/c To Cash/Bank A/c	Dr.
3.	For Providing depreciation	Depreciation A/c To Assets A/c	Dr.
4.	Transfer of depreciation to Profit & Loss a/c	Profit & Loss A/c To Depreciation A/c	Dr.
5.	Sale of Assets	Bank A/c To Assets A/c	Dr.

$$\text{Depreciation} = \frac{\text{Cost of Assets} - \text{Scrap Value of Assets}}{\text{Estimated Life of Assets}}$$

Format of ledger accounts

ASSET ACCOUNT

Date	Particulars	L.F.	Amt	Date	Particulars	L.F.	Amt
25-06 -13	To Bank		xxx	31-03-14	By Depreciation		xx
					By Balance c/d		xx
	Total		xxx	Total			xxx
01-04-14	To Balance	xx			By Depreciation		xx

Methods of Depreciation

Depreciation can be calculated using any of the following methods, however the most popular methods remain (a) Straight Line Method and (b) Written Down Value Method.

1. *Straight Line Method*
2. *Written Down Value Method*
3. *Annuity Method*
4. *Insurance Policy Method*
5. *Machine Hour Rate Method*
6. *Depletion Method*
7. *Revaluation Method*
8. *Depreciation Fund Method*

Straight Line Method

It is called Fixed Percentage on Original Cost Method or Fixed Installment Method. Under this method, a suitable percentage of original cost is written off the asset annually.

Thus, if an asset costs is Rs. 100,000/- and depreciation rate is 10% per annum then the amount of depreciation is Rs. 10,000 will be provided every year if scrap value of the asset at the end of its estimate life of 10 years is considered to be nil. To ascertain annual depreciation, the following formula may be remembered :

$$\text{Depreciation} = \frac{\text{Cost of Assets} - \text{Scrap Value of Assets}}{\text{Estimated Life of Assets}}$$

$$\frac{1,00,000 - 0}{10 \text{ Years}} = 10,000$$

Straight Line Method – Example problem

1.B. Co. Purchased machinery as follows :

Date of Purchase	Cost of Machine (Rs.)
1.4.2006 →	60,000 ,
1.10.2006 →	40,000 ,
1.7.2007 →	20,000

On 1.1.2008 one-third of the machinery which was purchased on 1.4.2006 became obsolete and was sold for Rs. 6,000. The machinery was to be depreciated by Fixed Installment Method at 10% p a. Show how the Machinery Account would appear in the ledger of the Company for the years 2006, 2007 and 2008.

Assume that the accounting year of the Company ends on 31st December every year.

Machinery Account (Straight Line Method)

Dr.

Cr.

Date	Particular	Amount	Amount Rs.	Date	Particular	Amount	Amount Rs.
01-04-2006	To Bank A/c Purchase		60,000	31-12-2006	By Depreciation A/c		5,500
01-10-2006	To Bank A/c Purchase		40,000	31-12-2006	By Balance c/d		94,500
			1,00,000				1,00,000
01-01-2007	To Balance b/d		94,500	31-12-2007	By Depreciation A/c		11,000
01-07-2007	To Bank A/c Purchase		20,000	31-12-2007	By Balance c/d		1,03,500
			1,14,500				1,14,500
01-01-2008	To Balance b/d		1,03,500	01-01-2008	By Bank A/c - Sale		6,000
				01-01-2008	By Profit & Loss A/c		10,500
				31-12-2008	By Depreciation A/c		10,000
				31-12-2008	By Balance c/d		77,000
			1,03,500				1,03,500

Workings

Calculation of Depreciation (SLM)

2006	1. 10% on 60,000 for 9 Months - $60,000 \times \frac{9}{12} \times 10\%$	4,500
	2. 10% on 40,000 for 3 Months- $40,000 \times \frac{3}{12} \times 10\%$	1,000
		5,500
2007	1. 10% on 100,000 for 1 year $1,00,000 \times 10\%$	10,000
	2. 10% on 20,000 for 6 Months - $20,000 \times \frac{6}{12} \times 10\%$	1,000
		11,000
2008	1. 10% on 40,000 ($60,000 \times \frac{2}{3}$) for 1 year - $40,000 \times 10\%$	4,000
	2. 10% on 60,000 ($40,000 + 20,000$) for 1 Year - $60,000 \times 10\%$	1,000
		10,000

Calculation of Loss on Sale of Machinery (SLM)

Cost of Machinery on 1-4-2006	$60,000 \times \frac{1}{3}$	20,000
Less: Depreciation 10 % for 2006	$20,000 \times \frac{9}{12} \times 10\%$	1,500
Less: Depreciation 10% for 2007	$20,000 \times 10\%$	2,000
Cost of Machinery on 1-4-2008		16,500
Less: Sale Value on 1-4-2008		6,000
	Loss on Sale of Machinery	10,500

Diminishing Balance Method

According to the Diminishing Balance Method, depreciation is charged at a fixed percentage on the book value of the asset.

As the book value reduces every year, it is also known as the Reducing Balance Method or Written-down Value Method.

Since the book value reduces every year, hence the amount of depreciation also reduces every year.

Under this method, the value of the asset never reduces to zero.

Formulae are as follows:

Amount of depreciation = (Book Value x Rate of Depreciation) / 100

$$\text{Depreciation Rate} = 100 \left(1 - n \sqrt[n]{\frac{S}{C}} \right) \text{ where } n = \text{number of years}$$

S = Salvage value

C = Cost of asset

Prob No.1 Machinery Account (Written Down Value Method)

Dr.				Cr.			
Date	Particular	Amount	Amount Rs.	Date	Particular	Amount	Amount Rs.
01-04-2006	To Bank A/c Purchase		60,000	31-12-2006	By Depreciation A/c		5,500
01-10-2006	To Bank A/c Purchase		40,000	31-12-2006	By Balance c/d		94,500
			1,00,000				1,00,000
01-01-2007	To Balance b/d		94,500	31-12-2007	By Depreciation A/c		10,500
01-07-2007	To Bank A/c Purchase		20,000	31-12-2007	By Balance c/d		1,04,000
			1,14,500				1,14,500
01-01-2008	To Balance b/d		1,04,000	01-01-2008	By Bank A/c - Sale		6,000
				01-01-2008	By Profit & Loss A/c		10,650
				31-12-2008	By Depreciation A/c		8,740
				31-12-2008	By Balance c/d		78,610
			1,04,000				1,04,000

Workings		
Calculation of Depreciation (WDV)		
2006	1. 10% on 60,000 for 9 Months - $60,000 \times \frac{9}{12} \times 10\%$	4,500
	2. 10% on 40,000 for 3 Months- $40,000 \times \frac{3}{12} \times 10\%$	1,000
		5,500
2007	1. 10% on 94,500 for 1 year $95,000 \times 10\%$	9,450
	2. 10% on 20,000 for 6 Months - $20,000 \times \frac{6}{12} \times 10\%$	1,000
		10,450
2008	1 st Machinery 10% on 33,300 $((60,000 - 4,500 = 55,500 - 5,550 = (49,950 \times \frac{2}{3})$ for 1 year	3,330
	2 nd Machinery 10% on 35,100 $(40,000 - 1000 = 39,000 - 3,900 = 35,100)$	3,510
	3 rd Machinery 10% on 19,000 $(20,000 - 1000)$ for 1 Year	1,900
		8,740

Calculation of Loss on Sale of Machinery		
Cost of Machinery on 1-4-2006	$60000 \times \frac{1}{3}$	20,000
Less: Depreciation 10 % for 2006	$20000 \times \frac{9}{12} \times 10\%$	1,500
Less: Depreciation 10% for 2007	$18,500 \times 10\%$	1,850
Cost of Machinery on 1-4-2008		16,650
Less: Sale Value on 1-4-2008		6,000
	Loss on Sale of Machinery	10,650

2. M/s. Bharat and sons purchased a machine on 1 Apr 2015 for ₹400000 from ABC & Co. and paid ₹100000 on its installation. The useful life of the machine is 3 years and its estimated residual value is ₹40000. On 31st March 2018, M/s. Bharat and sons sell the machinery for 250000.

Charge depreciation as per the W.D.V. method @10 % p. a. Prepare the necessary ledger accounts in the books of Anil for the year ending 31st December every year.

Working Notes:

Calculation of amount of depreciation

Depreciation = Book Value x (Rate of depreciation/100)

2015: Depreciation = 500000 x 10/100 x 9/12 = 37500

2016: Depreciation = 462500 x 10/100 = 46250

2017: Depreciation = 416250 x 10/100 = 41625

2018: Depreciation = 374625 x 10/100 x 3/12 = 9366

Calculation of loss on sale of machinery

Loss = Book Value on 1 Jan 2018 – depreciation for 3 months – cash received
= 374625 – 9366 – 250000 = 115259

Machinery A/c

Date	Particulars	Amount	Date	Particulars	Amount
2015			2015		
01-Apr	To ABC & Co. A/c	400000	31-Dec	By Depreciation A/c	37500
	To Cash A/c (installation exp.)	100000	31-Dec	By balance c/d	462500
		<u>500000</u>			<u>500000</u>
2016			2016		
01-Jan	To balance b/d	462500	31-Dec	By Depreciation A/c	46250
			31-Dec	By balance c/d	416250
		<u>462500</u>			<u>462500</u>
2017			2017		
01-Jan	To balance b/d	416250	31-Dec	By Depreciation A/c	41625
			31-Dec	By balance c/d	374625
		<u>416250</u>			<u>416250</u>
2018			2018		
01-Jan	To balance b/d	374625	31-Mar	By Depreciation A/c	9366
			31-Mar	By Cash A/c	250000
				By Profit & Loss A/c (loss on sale)	115259
		<u>401625</u>			<u>401625</u>

Annuity Method

This method of depreciation considers the cost of the asset and also the amount of interest lost on the capital expenditure. Thus, it is based on the assumption that if the amount that is spent on the purchase of the asset was invested elsewhere, it would have earned a certain amount of interest.

Therefore, not only the cost of the asset should be allocated but also the amount of interest on it should be allocated over the useful life of the asset. In other words, this method determines the internal rate of return (IRR) on the cash flows of the asset.

Thus, the amount of depreciation is calculated using the Annuity Tables. The capital expenditure and interest accruing thereof are written off during the life of the asset. The amount of depreciation every year is constant. But, the interest charged in the initial years is more and that in later years is less. Hence, the amount of capital expenditure charged is less in the initial years and it is more in later years.

This method is suitable in case of long-term leases. On the contrary, it is not suitable where there are frequent additions or deductions in the asset because then the calculation of depreciation becomes difficult.

Journal Entries for Annuity Method

Date	Particulars		Amount (Dr.)	Amount (Cr.)
1. Charging interest on asset	Asset A/c	Dr.	xx	
	To Interest A/c			xx
	(Being interest charged on asset)			
2. Charging depreciation on asset	Depreciation A/c	Dr.	xx	
	To Asset / Provision for Depreciation A/c			xx
	(Being depreciation charged on asset)			
3. Transferring depreciation to Profit & Loss A/c	Profit & Loss A/c	Dr.	xx	
	To Depreciation A/c			xx
	(Being depreciation on asset transferred to Profit & Loss A/c)			
4. Transferring interest to Profit & Loss A/c	Interest A/c	Dr.	xx	
	To Profit & Loss A/c			xx
	(Being interest on capital expenditure on asset transferred)			

Q. A Ltd. purchased a 5 years lease on 1 April 2013 for Rs.5,00,000. It is decided to write off depreciation on lease using the Annuity Method. The rate of interest is presumed to be 6% p.a. The annuity for Rs.1 for 5 years at 6% interest is 0.237396. Prepare the Lease A/c and the Profit & Loss A/c for 5 years.

Ans: Amount of depreciation to be written off every year = 0.237396×500000
= Rs.118698

Profit & Loss A/c					
Date	Particulars	Amount	Date	Particulars	Amount
2013-14			2013-14		
31-Mar	To Depreciation A/c	118698	31-Mar	By Interest A/c	30000
2014-15			2014-15		
31-Mar	To Depreciation A/c	118698	31-Mar	By Interest A/c	24678
2015-16			2015-16		
31-Mar	To Depreciation A/c	<u>118698</u>	31-Mar	By Interest A/c	<u>19037</u>
2016-17			2016-17		
31-Mar	To Depreciation A/c	118698	31-Mar	By Interest A/c	13057
2017-18			2017-18		
31-Mar	To Depreciation A/c	<u>118698</u>	31-Mar	By Interest A/c	<u>6718</u>

Lease A/c

Date	Particulars	Amount		Date	Particulars	Amount
2013-14				2013-14		
01-Apr	To Bank A/c	500000		31-Mar	By Depreciation A/c	118698
31-Mar	To Interest A/c	30000		31-Mar	By balance c/d	411302
	(6% on 500000)					
		<u>530000</u>				<u>530000</u>
2014-15				2014-15		
01-Apr	To Balance b/d	411302		31-Mar	By Depreciation A/c	118698
31-Mar	To Interest A/c	24678		31-Mar	By balance c/d	317282
	(6% on 411302)					
		<u>435980</u>				<u>435980</u>
2015-16				2015-16		
01-Apr	To Balance b/d	317282		31-Mar	By Depreciation A/c	118698
31-Mar	To Interest A/c	19037		31-Mar	By balance c/d	217621
	(6% on 317282)					
		<u>336319</u>				<u>336319</u>
2016-17				2016-17		
01-Apr	To Balance b/d	217621		31-Mar	By Depreciation A/c	118698
31-Mar	To Interest A/c	13057		31-Mar	By balance c/d	111980
	(6% on 217621)					
		<u>230678</u>				<u>230678</u>
2017-18				2017-18		
01-Apr	To Balance b/d	111980		31-Mar	By Depreciation A/c	118698
31-Mar	To Interest A/c	6718				
	(6% on 111980)					
		<u>118698</u>				<u>118698</u>

Ratio Analysis

Ratio is an arithmetical expression of relationship between two numbers. Similarly, in finance, ratios are a correlation between two numbers, or rather two accounts. So two numbers derived from the financial statement are compared to give us a more clear understanding of them. This is an accounting ratio. Ratio analysis is used to evaluate a number of issues with an entity, such as its liquidity, efficiency of operations, and profitability. This type of analysis is particularly useful to analysts outside of a business, since their primary source of information about an organization is its financial statements. Ratio analysis is less useful to corporate insiders, who have better access to more detailed operational information about the organization.

Ratio analysis is particularly useful when used in the following two ways:

Trend line. Calculate each ratio over a large number of reporting periods, to see if there is a trend in the calculated information. The trend can indicate financial difficulties that would not otherwise be apparent if ratios were being examined for a single period. Trend lines can also be used to estimate the direction of future ratio performance.

Industry comparison. Calculate the same ratios for competitors in the same industry, and compare the results across all of the companies reviewed. Since these businesses likely operate with similar fixed asset investments and have similar capital structures, the results of a ratio analysis should be similar. If this is not the case, it can indicate a potential issue, or the reverse - the ability of a business to generate a profit that is notably higher than the rest of the industry. The industry comparison approach is used for sector analysis, to determine which businesses within an industry are the most (and least) valuable.

Objectives of Ratio Analysis

Interpreting the financial statements and other financial data is essential for all stakeholders of an entity. Ratio Analysis hence becomes a vital tool for financial analysis and financial management. Let us take a look at some objectives that ratio analysis fulfils.

1] Measure of Profitability

Profit is the ultimate aim of every organization.. Gross Profit Ratios, Net Profit Ratio, Expense ratio etc provide a measure of profitability of a firm. The management can use such ratios to find out problem areas and improve upon them.

2] Evaluation of Operational Efficiency

Certain ratios highlight the degree of efficiency of a company in the management of its assets and other resources. It is important that assets and financial resources be allocated and used efficiently to avoid unnecessary expenses. Turnover Ratios and Efficiency Ratios will point out any mismanagement of assets.

3] Ensure Suitable Liquidity

Every firm has to ensure that some of its assets are liquid, in case it requires cash immediately. So the liquidity of a firm is measured by ratios such as Current ratio and Quick Ratio. These help a firm maintain the required level of short-term solvency.

4] Overall Financial Strength

There are some ratios that help determine the firm's long-term solvency. They help determine if there is a strain on the assets of a firm or if the firm is over-leveraged. The management will need to quickly rectify the situation to avoid liquidation in the future. Examples of such ratios are Debt-Equity Ratio, Leverage ratios etc.

5] Comparison

The organizations' ratios must be compared to the industry standards to get a better understanding of its financial health and fiscal position. The management can take corrective action if the standards of the market are not met by the company. The ratios can also be compared to the previous years' ratio's to see the progress of the company. This is known as trend analysis.

Advantages of Ratio Analysis

Ratios are essentially whistleblowers, they draw the managements attention towards issues needing attention.

1. Ratio analysis will help validate or disprove the *financing, investment and operating decisions* of the firm. They summarize the financial statement into comparative figures, thus helping the management to compare and evaluate the financial position of the firm and the results of their decisions.
2. It *simplifies complex accounting statements* and financial data into simple ratios of operating efficiency, financial efficiency, solvency, long-term positions etc.
3. Ratio analysis help identify problem areas and bring the attention of the management to such areas. Some of the information is lost in the complex accounting statements, and ratios will help *pinpoint such problems*.
4. Allows the company to conduct *comparisons with other firms, industry standards, intra-firm comparisons* etc. This will help the organization better understand its fiscal position in the economy.

Limitations of Ratio Analysis

While ratios are very important tools of financial analysis, they have some limitations, such as:

- The firm can make some year-end changes to their financial statements, to improve their ratios. Then the ratios end up being nothing but ***window dressing***.
- Ratios ***ignore the price level changes due to inflation***. Many ratios are calculated using historical costs, and they overlook the changes in price level between the periods. This does not reflect the correct financial situation.
- Accounting ratios completely ***ignore the qualitative aspects of the firm***. They only take into consideration the monetary aspects (quantitative)
- There are ***no standard definitions*** of the ratios. So firms may be using different formulas for the ratios. One such example is Current Ratio, where some firms take into consideration all current liabilities but others ignore bank overdrafts from current liabilities while calculating current ratio.
- And finally, accounting ratios ***do not resolve any financial problems*** of the company. They are a means to the end, not the actual solution.

Types of Ratios

The types of ratios according to the functional classification are:

- Liquidity Ratio
- Leverage Ratios
- Activity Ratios
- Profitability Ratios
- Coverage Ratios

1] Liquidity Ratios

A firm needs to keep some level of liquidity, so stakeholders can be paid when they are due. All assets of the firm cannot be tied up, a firm must look after its short-term liquidity. These ratios help determine such liquidity, so the firm may rectify any problems. The two main liquidity ratios are Current ratio and Quick Ratio (or liquid ratio).

2] Leverage Ratios

These ratios determine the company's ability to pay off its long-term debt. So they show the relationship between the owner's fund and the debt of the company. They actually show the long-term solvency of a firm, whether it has enough assets to pay of all its stakeholders, as well as all debt on the Balance Sheet. This is why they are also called Solvency ratios. Some examples are Debt Ratio, Debt-Equity Ratio, Capital Gearing ratio etc.

3] Activity Ratios

Activity ratios help measure the efficiency of the organization. They help quantify the effectiveness of the utilization of the resources that a company has. They show the relationship between sales and assets of the company. These types of ratios are alternatively known as performance ratios or turnover ratios. Some ratios like Stock Turnover, Debtors turnover, Stock to Working Capital ratio etc measure the performance of a company.

4] Profitability Ratios

These ratios analyze the profits earned by an entity. They compare the profits to revenue or funds employed or assets of an entity. These ratios reflect on the entity's ability to earn reasonable returns with respect to the capital employed. They even check the soundness of the investment policies and decisions. Examples will include Operating Profit ratio, Gross Profit Ratio, Return on Equity Ratio etc.

5] Coverage Ratios

Shows the equation between profit in hand and the claims of outside stakeholders. These are stakeholders that are required by the law to be paid, even in case of liquidation. So these types of ratios ensure that there is enough to cover these payments to such outsiders. Some examples of coverage ratios are Dividend Payout Ratio, Debt Service ratio etc.

Liquidity Ratios

1. A firm has assets and liabilities to its name. Some are fixed in nature and then there are current assets and current liabilities. These are short-term in nature and easily convertible into cash.
2. The liquidity ratios deal with the relationship between such current assets and current liabilities.
3. Liquidity ratios evaluate the firm's ability to pay its short-term liabilities, i.e. current liabilities. It shows the liquidity levels, i.e. how many of their assets can be quickly converted to cash to pay of their obligations when they become due.
4. It is not only a measure of how much cash there is but also how easily current assets can be converted to cash or marketable securities.

Liquidity Ratios are:

1. *Current Ratio*
2. *Quick Ratio/Liquidity ratio /Acid Test Ratio*
3. *Absolute Cash Ratio*

1. *Current Ratio:*

The current ratio is also known as the working capital ratio. It will measure the relationship between current assets and current liabilities. It measures the firm's ability to pay for all its current liabilities, due within the next one year by selling off all their current assets.

The formula for is as follows

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$

Current Assets include,

Stock, Debtors, Cash and Bank Balances, Bills receivable, Accruals, Short term loans that are given and Short term Securities

Current Liabilities include

Creditors, Outstanding Expenses, Short Term Loans that are taken, Bank Overdrafts, Provision for taxation and Proposed Dividend

Note: The ideal current ratio, according to the industry standard is 2:1.

2. Quick Ratio

The liquidity ratio is also called as Quick Ratio, or acid test ratio. This ratio will measure a firm's ability to pay off its current liabilities (minus a few) with only selling off their quick assets. Quick assets are those which can be easily converted to cash with only 90 days notice. The formula is

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities/Quick Liabilities}}$$

$$\text{Quick Assets} = \text{All Current Assets} - \text{Stock} - \text{Prepaid Expenses}$$

$$\text{Quick Liabilities} = \text{All Current Liabilities} - \text{Bank Overdraft} - \text{Cash Credit}$$

Note: The ideal quick ratio is considered to be 1:1

3. Absolute Cash Ratio

This is an even more rigorous liquidity ratio than quick ratio. Here we measure the availability of cash and cash equivalents to meet the short-term commitment of the firm. The formula is:

$$\text{Absolute Cash ratio} = \frac{\text{Cash} + \text{Bank Balance} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

Activity Ratios

- These ratios basically measure the efficiency with which assets are being utilized or managed. This is why they are also known as productivity ratio, efficiency ratio or more famously as turnover ratios.
- These ratios show the relationship between sales and any given asset. It will indicate the ratio between how much a company has invested in one particular type of group of assets and the revenue such asset is producing for the company.

The following are the different kinds of activity ratios that measure the effectiveness of the funds invested and the efficiency of their performance

1. Stock Turnover Ratio
2. Debtors Turnover Ratio
3. Creditors Turnover Ratio
4. Stock to Working Capital Ratio

1] Stock Turnover Ratio

This ratio focuses on the relationship between the cost of goods sold and average stock. So it is also known as Inventory Turnover Ratio or Stock Velocity Ratio.

It basically counts the number of times a stock rotates (completes a cycle) in one given accounting period and the sales it effects in the same period. So it calculates the speed with which the company converts stock (lying about) to sales, i.e. revenue.

The formula for the ratio is as follows,

$$\text{Stock Turnover Ratio} = \text{Cost of Goods Sold (COGS)} \div \text{Average Stock}$$

$$\text{COGS} = \text{Sales} - \text{Gross Profit}$$

$$\text{Average Stock} = (\text{Opening Stock} + \text{Closing Stock}) \div 2$$

From a managerial standpoint, this is an important ratio to calculate. It allows them to figure out their inventory reordering schedule, by indicating when all the stock will run out. It also helps them analyze how efficiently the stock and its reordering is being managed by the purchasing department.

2] Debtors Turnover Ratio

This ratio measures the efficiency with which Accounts Receivable are being managed, hence it is also known as 'Accounts Receivable Turnover ratio'. The ratio shows the equation between credit sales (cash sales are not taken into consideration) and the average debtors of a firm. The formula is as below

$$\text{Debtors Turnover ratio} = \text{Credit Sales} \div \text{Average Debtors} \quad \text{OR}$$

$$\text{Debtors Turnover ratio} = \text{Credit Sales} \div (\text{Debtors} + \text{Bills Receivable})$$

$$\text{Average Collection Period} = \text{Number of days or weeks or months} \div \text{Debtors Turnover Ratio}$$

Both of these ratios are significant in managing the debtors and bills receivables of a company. Not only do they calculate the velocity with which debtors pay up, they help shape the credit policy of the firm as well.

3] Creditors Turnover Ratio

This ratio shows the relation between credit purchases (cash purchases are ignored in this context) and the average creditors of a company at any given time of the accounting year. This ratio is also the 'accounts payable turnover ratio'. While calculating the net purchases we will minus any purchase return.

The formula is as below,

$$\text{Creditors Turnover ratio} = \text{Credit Purchases} \div \text{Average Creditors} \quad \text{OR}$$

$$\text{Creditors Turnover ratio} = \text{Credit Purchases} \div \text{Creditors} + \text{Bills Payable}$$

$$\text{Average Creditors} = (\text{Opening Creditors} + \text{Closing Creditors}) \div 2$$

$$\text{Average Payment Period} = \text{Number of days or weeks or months} \div \text{Creditors Turnover Ratio}$$

4] Working Capital Turnover Ratio

This one of the activity ratios will measure the efficiency with which the firm is using their Working Capital to support their sale volumes. So any excess of current assets over the current liabilities of a firm is their working capital.

The formula for the ratio is

$$\text{Working Capital Turnover ratio} = \text{Total Sales} \div \text{Working Capital}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

Profitability Ratios

These profitability ratios help the management determine an entity's ability to use its assets and create earnings. The most useful comparisons for these ratios is to the performance of the previous years.

Profitability ratios are both revenue statement ratios and balance sheet ratios. They compare the revenue of a firm to different types of expense accounts within the Profit and Loss Statement. And then some profitability ratios also compare revenue to aspects of the balance sheet such as assets and equity.

The Profitability Ratios are:

1. Gross Profit Ratio
2. Operating Ratio
3. Net Profit Ratio
4. Return on Capital Employed
5. Earnings Per Share

1. Gross Profit Ratio

This ratio simply compares the gross profit of a company to its net sales. It signifies the basic profitability of the firm. This is why it is one of the most important profitability ratios. It shows the margin in the selling price before the company will incur losses from operations.

The formula is

$$\text{Gross Profit Ratio} = (\text{Gross Profits} \div \text{Net Revenue from Operations}) \times 100$$

$$\text{Net Revenue from Operations} = \text{Net Sales} = \text{Sales} - \text{Sale Returns}$$

$$\text{Gross Profit} = \text{Sales} - \text{Cost of Sales}$$

2. Operating Ratio

This ratio measures the equation between the cost of operating activities and the net sales, or revenue from operations. This ratio expresses the cost of goods sold as a percentage of the net sales.

Operating ratio also takes into account operating expenses such as administration and office expenses, selling and distribution costs, salaries paid, depreciation expenses etc. Also, it ignores the non-operating incomes such as interests, commissions, dividends etc.

$$\text{Operating Ratio} = [(\text{COGS} + \text{Operating Expenses}) \div \text{Net Sales from Operations}] \times 100$$

This ratio can actually help ascertain the efficiency of the organization along with its profitability. There is no standard ratio, but a trend analysis must be done on year on year basis to check the progress of the firm.

3. Net Profit Ratio

The net profit ratio includes the total revenue of the firm. It takes into account both the operating income as well as the non-operating income. Then it compares net profit to these incomes.

The formula for Net Profit ratio is,

$$\text{Net Profit Ratio} = (\text{Net Profit} \div \text{Net Sales}) \times 100$$

Net Profit = Net Profit after Tax (NPAT)

This ratio helps measure the overall profitability of the firm. It indicates the portion of the net revenue that is available to the proprietors. It also reflects on the efficiency of the business and is a very important ratio for investors and financiers.

4. Return on Capital Employed

This ratio is one of the important ones of the profitability ratios. It measures the overall efficiency of the utilization of the firm's funds. The ratio explores the relationship between the total income/profit earned by a firm and the total capital employed by the firm, or the total investment made. The formula is as follows,

$$\text{Return on Capital Employed} = (\text{PBIT}^* \div \text{Capital Employed}) \times 100$$

* PBIT = Profit Before Income and Tax

This ratio measures the efficiency with which the capital is being utilized and it indicates the productivity of the capital employed. It is a good tool to measure the overall profitability of the firm as well.

5. Earnings Per Share

This ratio represents the profit or the earnings of a company in the context of one share. It represents the earnings of a firm whether or not dividends were actually declared on such shares.

The formula for this ratio is

$$\text{Earnings Per Share (EPS)} = (\text{Profit available to Equity Shareholders} \div \text{Number of equity Shareholders}) \times 100$$

$$\text{Profit available to Equity Shareholders} = \text{NPAT} - \text{Preference Dividend}$$

This is an important ratio for the shareholders, it helps them decide whether to hold onto the shares or sell them. It also is a good indicator of the dividends to be declared and/or bonus issues.

Solvency Ratios

Solvency ratios also known as leverage ratios determine an entity's ability to service its debt. So these ratios calculate if the company can meet its long-term debt. It is important since the investors would like to know about the solvency of the firm to meet their interest payments and to ensure that their investments are safe. Hence solvency ratios compare the levels of debt with equity, fixed assets, earnings of the company etc.

One thing to make note of is the difference between solvency ratios and liquidity ratios. These two are often confused for the other. Liquidity ratios compare current assets with current liabilities, i.e. short-term debt. Whereas solvency ratios analyze the ability to pay long-term debt.

The solvency ratios are:

1. Debt to Equity Ratio
2. Debt Ratio
3. Proprietary Ratio
4. Interest Coverage Ratio

1] Debt to Equity Ratio

The debt to equity ratio measures the relationship between long-term debt of a firm and its total equity. Since both these figures are obtained from the balance sheet itself, this is a balance sheet ratio.

The formula is:

$$\text{Debt to Equity Ratio} = \text{Long-Term Debt} \div \text{Shareholders Funds}$$

Long Term Debt = Debentures + Long Term Loans

Shareholders Funds = Equity Share Capital + Preference Share Capital + Reserves – Fictitious Assets

Note: The maximum a company should maintain is the ratio of 2:1.

2] Debt Ratio

This ratio measures the long-term debt of a firm in comparison to its total capital employed. Alternatively, instead of capital employed, we can use net fixed assets. So the debt ratio will measure the liabilities (long-term) of a firm as a percent of its long-term assets. The formula is as follows,

$$\text{Debt Ratio} = \text{Long-Term Debt} \div \text{Capital Employed} \quad \text{OR}$$

$$\text{Long-Term Debt} \div \text{Net Assets}$$

Capital Employed = Long Term Debt + Shareholders Funds

Net Assets = Non-Fictitious Assets – Current Liabilities

This is one of the more important solvency ratios. It indicates the financial leverage of the firm. A low ratio points to a more financially stable business, better for the creditors. A higher ratio points to doubts about the firms long-term financial stability. But a higher ratio helps the management with trading on equity, i.e. earn more income for the shareholders. Again there is no industry standard for this ratio.

3] Proprietary Ratio

The third of the solvency ratios is the proprietary ratio or equity ratio. It expresses the relationship between the proprietor's funds, i.e. the funds of all the shareholders and the capital employed or the net assets. Like the debt ratio shows us the comparison between debt and capital, this ratio shows the comparison between owners funds and total capital or net assets.

The ratio is as follows:

$$\text{Proprietary Ratio} = \text{Shareholders Funds} \div \text{Capital Employed} \text{ OR} \\ \text{Shareholders Funds Net Assets}$$

A high ratio is a good indication of the financial health of the firm. It means that a larger portion of the total capital comes from equity. Or that a larger portion of net assets is financed by equity rather than debt. One point to note, that when both ratios are calculated with the same denominator, the sum of debt ratio and the proprietary ratio will be 1.

4] Interest Coverage Ratio

All debt has a cost, which we normally term as an interest. Debentures, loans, deposits etc all have an interest cost. This ratio will measure the security of this interest payable on long-term debt. It is the ratio between the profits of a firm available and the interest payable on debt instruments.

The formula is,

$$\text{Interest Coverage Ratio} = \text{Net Profit before Interest and Tax} \div \text{Interest on Long-Term Debt}$$

Problem 1. Perfect Ltd. gives the following Balance sheet. You are required to compute the following ratios.

(a) Liquid Ratio (b) Debt-Equity Ratio (c) Solvency Ratio (d) Stock of Working Capital Ratio

Balance Sheet

Equity share capital	1500000	Fixed Assets	1400000
Reserve fund	100000	Stock	500000
6% Debentures	300000	Debtors	200000
Overdraft	100000	Cash	100000
Creditors	<u>200000</u>		<u> </u>
	22,00,000		22,00,000
	-----		-----

Solution :

(a) Liquid Ratio= Liquid Assets / Liquid Liabilities (or) Liquid Assets / Current Liabilities

Debtors = 2,00,000 Cash = 1,00,000

LA = 3,00,000 Liquid Liabilities : Creditors = 2,00,000

$3,00,000 / 2,00,000 = 1.5$ or

(b) *Debt – Equity Ratio = External Equities / Internal Equities*

External Equities:

All outsiders loan Including current liabilities

$$3,00,000 + 1,00,000 + 2,00,000 = 6,00,000$$

Internal Equities :

It Includes share holders fund + Reserves

$$15,00,000 + 1,00,000 = 16,00,000$$

$$\text{Debt – Equity Ratio} = 600000 / 1600000 = 0.375$$

(c) *Solvency Ratio = Outside Liabilities or External Equities / Total Assets*

Outside Liabilities = Debenture + Overdraft + Creditors

$$= 3,00,000 + 1,00,000 + 2,00,000 = 6,00,000$$

$$\text{Solvency Ratio} = (600000 / 2200000) * 100 = 27.27\%$$

(d) *Stock of Working Capital Ratio = Stock / Working Capital*

Working Capital = Current Assets – Current Liabilities

$$= 8,00,000 - 3,00,000 = 5,00,000$$

$$\text{Stock of Working Capital Ratio} = (5L/5L) * 100 = 100\%$$

Prob 2: From the following compute current ratio, quick ratio, cash ratio and Net Working Capital

Stock	Rs. 36,500	Prepaid expenses	Rs. 1,000
Sundry Debtors	63,500	Bank overdraft	20,000
Cash in hand & bank	10,000	Sundry creditors	25,000
Bills receivable	9,000	Bills payable	16,000
Short term investments	30,000	Outstanding expenses	14,000
(i). Current Ratio	Current Assets		150000
= Current Assets/CL	Current Liabilities		75000
	Current Ratio =		2:1
(ii). Quick Ratio	Current Assets – Stock & Prepaid Exp.		112,500
	Current Liabilities/ Quick Liabilities		75,000/ 55,000
	Quick Ratio =		1.5:1 / 2.045:1
(iii). Cash Ratio	Cash Balance + Bank Balance +Short term Marketable Securities		40,000
	Current Liabilities		75,000
	Cash Ratio =		0.53:1
(iv) Net Working Capital	CA - CL		75,000

Prob3: **Calculate the amount of Current Assets and Current Liabilities.**
Current ratio 2.5 and Working capital Rs.60,000.

Working Capital = Current Assets - Current Liabilities		
Current Ratio = 2.5 Current Assets : 1 Current Liabilities		
Rs.60,000 = 2.5 x - 1 x;		
Rs.60,000 = 1.5 x	x =	60,000/1.5
	x =	40000
Current Assets (40,000 X 2.5)	Rs.1,00,000	
Current Liabilities	Rs. 40,000	

Activity Ratios : Prob 4: Calculate the Debtors Turnover Ratio and Average Collection Period from the following information:

- Total sales = Rs. 4,00,000
- Cash sales = 20% of total sales
- Debtors on 1.1.2004 = Rs. 40,000
- Debtors on 31.12.2004 = Rs. 1,20,000

Answer:

Debtors Turnover Ratio = Credit Sales / Average Debtors

Credit Sales = Total Sales – Cash Sales; Rs.4,00,000-Rs.80,000 (20% of Rs.4,00,000) = Rs.3,20,000

Average Debtors = (Opening Debtors + Closing Debtors)/2 = (Rs.40,000+Rs.1,20,000)/2 = Rs.80,000

Therefore DTR = Rs.3,20,000/Rs.80,000 = **4 Times**

Average Collection Period = No. of days in a year or months / DTR

= 365 Days (or) 12 Months / 4 Times

= **91 Days (or) 3 Months**

Prob.5: Calculate the Creditor's Turnover Ratio from the following figures.

- Credit purchases during 2005 = Rs. 12,00,000
- Creditors + Bills Payables on 1.1.2005 = Rs. 4,00,000
- Creditors + Bills Payables on 31.12.2005 = Rs. 2,00,000

Solution: Creditors Turnover Ratio = Credit Purchases / Average Creditors

$$\begin{aligned}\text{Average Creditors} &= (\text{Opening Creditors} + \text{Closing Creditors})/2 \\ &= (\text{Rs.4,00,000} + \text{Rs.2,00,000})/2 = \text{Rs.3,00,000}\end{aligned}$$

$$\text{Creditors Turnover Ratio} = \text{Rs.12,00,000}/\text{Rs.3,00,000} = \underline{\underline{4 \text{ Times}}}$$

$$\begin{aligned}\text{Average Collection Period} &= \text{No. of Days in a year (or) Months in a year} / \text{CTR} \\ &= 365 \text{ days (or) } 12 \text{ months} / 4 \text{ Times} \\ &= \underline{\underline{91 \text{ Days (or) 3 Months}}}\end{aligned}$$

Prob 6: From the following information, calculate stock turnover ratio :

- Opening Stock Rs. 18,000 Wages Rs. 14,000
- Closing Stock Rs. 22,000 Sales Rs. 80,000
- Purchases Rs. 46,000 Carriage Inwards Rs. 4,000

Answer:

Stock (or) Inventory Turnover Ratio = Net Sales or Cost of Goods Sold / Average

$$\text{Inventory Net Sales} = \text{Rs.80,000}$$

$$\begin{aligned}\text{Average Inventory} &= (\text{Opening Stock} + \text{Closing Stock})/2 \\ &= (\text{Rs.18,000} + \text{Rs.22,000})/2 = \text{Rs.20,000}\end{aligned}$$

$$\text{Therefore, Stock Turnover Ratio} = \text{Rs.80,000}/\text{Rs.20,000} = \underline{\underline{4 \text{ Times}}}$$

Prob.7: From the following information, calculate stock turnover ratio.

- Sales: Rs. 4,00,000, Gross Profit Ratio : 10% on Sales
- Opening stock = Rs. 38,500 Closing stock = Rs.41,500

Answer:

Stock Turnover Ratio = Net Sales or Cost of Goods Sold/Average

Inventory Net Sales = Rs.4,00,000

Average Inventory = (Opening Stock + Closing Stock)/2
= (Rs.38,500 + Rs.41,500)/2 = Rs.40,000

Therefore, Stock Turnover Ratio = Rs.4,00,000/Rs.40,000 = **10 Times**

Based on Cost of Goods Sold

Cost of Goods Sold = Sales – Gross Profit

= Rs.4,00,000 – Rs.40,000 = Rs.3,60,000

Average Inventory = (Opening Stock + Closing Stock)/2
= (Rs.38,500 + Rs.41,500)/2 = Rs.40,000

Therefore, Stock Turnover Ratio = Rs.3,60,000/Rs.40,000 = **9 Times**

Prob.8: The data extracted from the books of the two cement companies are provided below:

Required: Compute (i) Debtors Turnover Ratio (ii) Creditors Turnover Ratio and (iii) Stock Turnover Ratio

Particulars	Ambuja Cements (Rs.)	Acc Limited (Rs.)
Sales	2500	2250
Purchases	1450	1125
Opening Stock	450	225
Closing Stock	275	145
Creditors	120	130
Debtors	240	220
Bills Payable	85	115
Bills Receivable	115	135

Ratio	Formula	Ambuja Cements		Acc Limited	
		Calculation	Answer	Calculation	Answer
(i) Debtors Turnover Ratio	Net Credit Sales/Average Debtors	$=2500/(240+115)$	7.04 Times	$=2250/(220+135)$	6.34 Times
(ii) Average Collection Period	365 Days/DTR	$365/7.04$	51.85 Days	$365/6.34$	57.57 Days
(iii) Creditors Turnover Ratio	Net Credit Purchases/Average Creditors	$=1450/(120+85)$	7.07 Times	$=1125/(130+115)$	4.59 Times
(iv) Average Payment Period	365 Days/CTR	$=365/7.07$	51.63 Days	$=365/4.59$	79.52 Days
(v) Stock Turnover Ratio	Net Sales/Average Stock	$=2500/(450+275)$	3.45 Times	$=2250/(225+145)$	6.08 Times

Prob. 9: From the following information, calculate (i) Total Assets Turnover (ii) Fixed Assets Turnover and (iii) Working Capital Turnover Ratios:

	(Rs.)		(Rs.)
Preference Shares Capital	4,00,000	Plant and Machinery	8,00,000
Equity Share Capital	6,00,000	Land and Building	5,00,000
General Reserve	1,00,000	Motor Car	2,00,000
Profit and Loss Account	3,00,000	Furniture	1,00,000
15% Debentures	2,00,000	Stock	1,80,000
14% Loan	2,00,000	Debtors	1,10,000
Creditors	1,40,000	Bank	80,000
Bills Payable	50,000	Cash	30,000
Outstanding Expenses	10,000	Sales for the year 2018 were Rs. 30,00,000.	

Answer:

(i) Total Assets Turnover Ratio = (Net Sales / Total Assets)
= (Rs.30,00,000 / Rs.20,00,000) = 1.5 Times

(ii) Fixed Assets Turnover Ratio = (Net Sales / Fixed Assets)
= (Rs.30,00,000 / Rs.16,00,000) = 1.88 Times

(iii) Working Capital Turnover Ratio = (Net Sales / Net Working Capital)
Net Working Capital = Current Assets – Current Liabilities = Rs. 4,00,000 – Rs.2,00,000
= Rs.2,00,000
= (Rs.30,00,000 / Rs.2,00,000) = 15 Times

Prob .10 Profitability Ratios: The data extracted from the books of the two FMCG companies are provided below: Required: Compute (i) Gross Profit Ratio (ii) Net Profit Ratio (iii) Operating Ratio and (iv) Operating Profit Ratio

Particulars	Nestle (Rs.)	HUL (Rs.)
Sales	800000	650000
Other Income	50000	25000
Cost of Goods Sold	350000	300000
Employee Benefit Cost	120000	85000
Finance Cost	30000	15000
Other Expenses	50000	15000

Ratios	Formula	Nestle		HUL	
Gross Profit Ratio	$(\text{Gross Profit} / \text{Net Sales}) \times 100$	$= (450000 / 800000) \times 100$	56.25%	$= (350000 / 650000) \times 100$	53.85%
Gross Profit =	Sales - Cost of Goods Sold	$= 800000 - 350000$	450000	$= 650000 - 300000$	350000
Net Profit Ratio	$(\text{Net Profit} / \text{Net Sales}) \times 100$	$= (300000 / 800000) \times 100$	37.50%	$= (260000 / 650000) \times 100$	40.00%
Net Profit =	Sales + Other Income - Cost of Goods Sold - Employee Benefit Cost - Finance Cost - Other Expense	$= 800000 + 50000 - 350000 - 120000 - 30000 - 50000$	300000	$= 650000 + 25000 - 300000 - 85000 - 15000 - 15000$	260000
Operating Ratio	$((\text{Cost of Goods Sold} + \text{Operating Expenses}) / \text{Net Sales}) \times 100$	$= ((350000 + 120000 + 50000) / 800000) \times 100$	65.00%	$= ((300000 + 85000 + 15000) / 650000) \times 100$	61.54%
Operating Profit Ratio	$(\text{Operating Profit} / \text{Net Sales}) \times 100$	$= (280000 / 800000) \times 100$	35.00%	$= (250000 / 650000) \times 100$	38.46%
Operating Profit or EBIT=	Sales - Cost of Goods sold - Employee Benefit Cost - Other Expense	$= 800000 - 350000 - 120000 - 50000$	280000	$= 650000 - 300000 - 85000 - 15000$	250000

Ratios to Balance Sheet

Prob. 11 Future Retail Limited provides the following information as on 31.3.2018

Required to prepare a summarized Balance Sheet as at 31.03.2018

Particulars	Rs.
Working Capital	2,40,000
Bank Overdraft	40,000
Fixed Assets to Proprietary Funds ratio	0.75
Reserves and Surplus	1,60,000
Current ratio	2.5
Liquid ratio	1.5

Answer:

(i) **Current Assets and Current Liabilities:**

Current Ratio = 2.5:1 i.e 2.5 times Current Assets and 1 time Current liabilities

X denotes as amount therefore Current Ratio = 2.5X : 1X

Working Capital = Rs. 2,40,000

Working Capital = Current Assets – Current Liabilities

Therefore, Rs.2,40,000 = 2.5X - 1X

1.5X = Rs.240,000; X = 240000/1.5

X = Rs. 160,000

Current Assets = 2.5 X = 2.5 * Rs.160000 = **Rs.4,00,000**

Current Liabilities = 1X = 1 * Rs.160000 = **Rs.1,60,000**

(ii) Stock

Liquid Ratio = (Current Assets – Stock) / Current Liabilities

$$1.5 = (\text{Rs.4,00,000} - \text{Stock}) / \text{Rs.1,60,000}$$

$$1.5 \times \text{Rs.1,60,000} = \text{Rs.4,00,000} - \text{Stock}$$

$$\text{Stock} = \text{Rs.4,00,000} - \text{Rs.2,40,000} = \underline{\text{Rs.1,60,000}}$$

(iii) Fixed Assets and Shareholders Funds

Use Balance Sheet Equation for identifying the Fixed Assets and Shareholders' Funds

Balance Sheet Equation

Shareholders' Funds + Current Liabilities = Fixed Assets + Current Assets

Fixed Assets to Proprietary Funds ratio = 0.75

It means 0.75 time Fixed Assets and 1 Time Proprietary Funds Ratio

Assume X as amount, Therefore Fixed Assets is 0.75 X and Proprietary Funds is 1 X

Substitute Values into Equation

$$1X + \text{Rs.1,60,000} = 0.75X + \text{Rs.4,00,000}$$

$$1X - 0.75X = \text{Rs.4,00,000} - \text{Rs.1,60,000}$$

$$0.25X = \text{Rs.2,40,000}; X = \text{Rs.2,40,000} / 0.25 X = \text{Rs.9,60,000}$$

$$\text{Fixed Assets is } 0.75X = 0.75 * \text{Rs. 9,60,000} = \text{Rs.7,20,000}$$

$$\text{Shareholders' Funds is } 1X = 1 * \text{Rs.9,60,000} = \text{Rs.9,60,000}$$

Balance Sheet

Liability	Rs.	Assets	Rs.
Shareholders' Funds		Fixed Assets	720000
Share Capital	800000	Current Assets	
Reserves and Surplus	160000	Stock	160000
Current Liabilities		Other current assets	240000
Bank Overdraft	40000		
Other Current Liabilities	120000		
Total	1120000	Total	1120000

Prob.12: From the following information, prepare the Balance Sheet of ABB Ltd. Showing the details of working:

Paid up capital	Rs. 50,000
Plant and Machinery	Rs. 1,25,000
Total Sales (p.a.)	Rs. 5,00,000
Gross Profit	25%
Annual Credit Sales	80% of net sales
Current Ratio	2
Inventory Turnover	4
Fixed Assets Turnover	2
Sales Returns	20% of sales
Average collection period	73 days
Bank Credit to trade credit	2
Cash to Inventory	1 : 15
Total debt to current Liabilities	3

1. Net Sales=	Total Sales - Sales Return	
	= 5,00,000 - 1,00,000 = Rs. 4,00,000	
2. Credit Sales =	80% of Net Sales = 4,00,000 x 80% = Rs. 3,20,000	
3. Gross Profit	25% of Net sales = 4,00,000 x 25% = Rs. 1,00,000	
4. Cost of Goods Sold =	Net Sales - Gross Profit	
	= 4,00,000 - 1,00,000 = Rs. 3,00,000	
5. Inventory=	<u>Cost of Goods Sold</u> Inventory Turnover	
	$\frac{3,00,000}{4} = \text{Rs. } 75,000$	
6. Receivable Turnover	$\frac{365}{73} = 5$	
Receivables =	<u>Credit Sales</u> = <u>3,20,000</u>	
	Receivables Turnover 5 = 64,000	

7. Cash =	$1/5 \text{ of Inventory} = 1/5 \times 75,000 = \text{Rs. } 5,000$
8. Total Current Assets =	Inventory + Receivables + Cash $= 75,000 + 64,000 + 5,000 = \text{Rs. } 1,44,000$
9. Total Current Liabilities =	<u>Current Assets</u> 2 $= \frac{1,44,000}{2}$ $= \text{Rs. } 72,000$
10. Bank Credit =	$2/3 \times \text{Current Liabilities} = 2/3 \times 72,000 = \text{Rs. } 48,000$
11. Trade Credit =	$1/2 \text{ of Bank Credit OR } 1/3 \text{ of Current Liabilities} = \text{Rs. } 24,000$
12. Total Debt =	$\text{Current Liabilities} \times 3 = 72,000 \times 3 = \text{Rs. } 2,16,000$
13. Long term debt =	$\text{Total Debt} - \text{Current Liabilities} = 2,16,000 - 72,000 = \text{Rs. } 1,44,000$
14. Fixed Assets =	$1/2 \text{ of Net Sales} = 1/2 \times 4,00,000 = 1/2 \times 4,00,000 = \text{Rs. } 2,00,000$
15. Other fixed Assets =	$\text{Fixed Assets} - \text{Plant \& Machinery} = 2,00,000 - 1,25,000 = \text{Rs. } 75,000$
16. Total Assets =	$\text{Fixed Assets} + \text{Current Assets} = 2,00,000 + 1,44,000 = \text{Rs. } 3,44,000$
17. Net worth =	$\text{Total Assets} - \text{Total Debt}$ $= 3,44,000 - 2,16,000 = \text{Rs. } 1,28,000$
18. Reserves & Surplus =	$\text{Net worth} - \text{Paid Up capital} = 1,28,000 - 50,000 = \text{Rs. } 78,000$

Balance Sheet

LIABILITIES	AMOUNT	ASSETS	AMOUNT
Paid Up Capital	50,000	Plant & machinery	1,25,000
Reserves & Surplus	78,000	Other Fixed Assets	75,000
Long term Debt	1,44,000	Inventory	75,000
Bank credit	48,000	Receivables	64,000
Trade credit	24,000	Cash	5,000
	3,44,000		3,44,000