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The Working Capital and Its Ratios: A Qualitative Study

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Abstract: Working capital is necessary tool for a financial economics for a decision making. Unsuitable management of WC i.e. too low or too high of WC may suffer a financial firm, so a proper and sustainable WC is a key to smooth inflow of profit. Mainly WC refers the Current assets of a firm. Currents assets are Inventory, Cash, Receivables, Cash equivalents etc. It is necessary component of a financial firm because WC directly affects the liquidity of a financial firm. In this paper we calculated the different ratios such as Liquidity ratios, Profitability ratios and Leverage ratios. We used the secondary data of XYZ to calculate the above ratios in Excel that are mentioned.

Keywords: Working Capital, XYZ Firm, Liquidity Ratio, Profitability Ratio and Leverage Ratio

1. Introduction

The WC is a necessary tool for business entities. It estimates the firm's short term finance and efficiency. WC is calculated as current assets minus current liabilities and it is very important measure for a firm and it is easy to calculate. There are two definitions for a WC. One is simply gross WC and another is net WC. Gross WC is the total current assets such as Cash, including foreign currency, Investments, except for investments that cannot be easily liquidated, prepaid expenses, Accounts receivable, Inventory etc. Another is net WC; it is defined as current assets minus current liabilities. Current liabilities are Accounts payable, Sales taxes payable, Payroll taxes payable, Income taxes payable, Interest payable, Bank account overdrafts, Accrued expenses etc.

The size and composition of working capital can vary between industries (Atrill P, 2006). Further Atrill P, 2006 believe that the various elements of working capital are interrelated and can be seen as part of a short-term cycle.

According to Richard pike and Bill Neale "working capital refers to current assets less current liabilities - hence its alternative name of net current asset. Current assets include cash, marketable securities, debtors, and stocks. Current liabilities are obligations that are expected to be repaid within the year". Long term investment and financing decisions give rise to future cash flows which, when discounted by an appropriate cost of capital, determine the market value of a company.

However, such long term decision will only result in the expected benefits for a company if attention is also paid to short term decision regarding current assets and liabilities. Current assets and liabilities, that are assets and liabilities with maturities of less than one year, need to be carefully managed. Net working capital is the term given to the difference between current assets and current liabilities.

Watson D and Head A, 2007 argued that "maintaining adequate working capital is not just important in the short term. Adequate liquidity is needed to ensure the survival of the business in the long term". Even a profitable company may fail without adequate cash flow to meet its liabilities. It can be argue as according to ACCA paper 2.4, 2005, "an excessively conservative approach to working capital management resulting in high-level of cash holdings will harm profits because the opportunity make a return on the assets tied up as cash will have been missed".

Therefore, in short, working capital is money used to pay short-term obligations such as creditors, to purchase stock, for paying wages etc - costs that are used to make and sell your product or deliver your service and will ultimately be recovered from sales. Basically working capital represents the funds that are required to operate a business on a day to day basis. The management of working capital is an essential part of a business's short-term planning process. It is necessary for managers to decide how much of each element

should be held. Watson D and Head A, 2007 have noted that there are costs associated with holding both too much and too little of each element. Managers must be aware of these costs in order to manage effectively. They must also be aware that there may be other, more profitable uses for the funds of the business. Hence the potential benefits must be weighed against the likely costs in order to achieve the optimum investment. In this project/report we calculated the different ratios such as Liquidity ratios, Profitability ratios and Leverage ratios to explain the effects of those on a firm. There are three types of ratios such as Ratio analysis, Fund flow analysis and budgeting, but we are going to explain only Ratio analysis.

2. Meaning and Conceptual Frame of Working Capital

Working capital means the total amount of circulating funds and current assets. It requires a specified minimum level of current assets namely raw materials, stock in progress and finished goods and receivables apart from reasonable cash in hand and certain other current assets. Working capital is also known as MPBF (Maximum Permissible Finance).

The some classification is given in below table.

Particulars	Classification
Working capital	Current assets such as cash, stock, book-debts, other current assets
Net WC	Current assets-current liabilities or long term sources-long term uses
Working capital gap	CA-CL
WC limits	facilities needed to purchase current assets. The facilities are cash credit, overdraft, bills purchase etc.

3. Analysis of Working Capital

As we know working capital is the life blood and centre of a business. Adequate amount of working capital is very much essential for smooth running of a business. And the most important part is the efficient management of working capital in right time. The liquidity position of firm is totally effected by the management of working capital. So, a study of changes in the uses and sources of working capital is necessary to evaluate the efficiency with which the working capital is employed in a business. This involves the need of working capital analysis.

The analysis of working capital can be conducted through a number of devices, such as:

a) Ratio analysis.
b) Fund flow analysis.
c) Budgeting.

3.1. Ratio Analysis

A ratio is a simple arithmetical expression one number to another. The technique of ratio analysis can be employed for measuring short-term liquidity or working capital position of a firm. The following ratios can be calculated for these purposes:

1. Liquidity ratios
a) Current ratio
b) Quick ratio
2. Profitability ratios
a) Gross Profit Ratio
b) Net Profit Ratio
3. Leverage ratios
a) Assets turnover ratio
b) Working capital turnover ratio

3.2. Fund Flow Analysis

Fund flow analysis is a technical device designated to the study the source from which additional funds were derived and the use to which these sources were put. The funds flow analysis consists of

a. Preparing schedule of changes of working capital
b. Statement of sources and application of funds.

It is an effective management tool to study the changes in financial position (working capital) business enterprise between beginning and ending of the financial dates.

3.3. Working Capital Budgeting

A budget is a financial and/or quantitative expression of business plans and polices to be pursued in the future period time. Working capital budget as a part of the total budgeting process of a business is prepared estimating future long term and short term working capital needs and sources to finance them, and then comparing the budgeted figures with actual performance for calculating the variances, if any, so that corrective actions may be taken in future. He objective working capital budget is to ensure availability of funds as and needed, and to ensure effective utilization of these resources. The successful implementation of working capital budget involves the preparing of separate budget for each element of working capital, such as, cash, inventories and receivables etc.

4. Calculation of Ratios

4.1. Current Ratio

Current ratio is calculated by current assets upon current liabilities. It measures short term paying ability of the firm. The main question this ratio addresses is: "Does the business have enough current assets to meet the payment schedule of its current debts with a margin of safety for possible losses in current assets, such as inventory shrinkage or collectable accounts?"

Thus, current ratio measures firm's short-term solvency. It indicates firm's ability to cover its current liabilities with its current assets. In a more specific manner, it indicates the availability of current assets in rupees for every one rupee of current liability. As such, higher the current ratio, the larger is

the amount of rupees available per rupee of current liability, the more is the firm's ability to meet current obligations and greater is the safety of funds of short term creditors. Thus, current ratio measures margin of safety to the short-term creditors.

The current ratio is calculated by dividing current assets by current liabilities. Current assets include cash and those assets, which can be converted in to cash within one year such as marketable securities, debtors, inventories, and prepaid expenses. Current liabilities include all obligations those are matured within a year such as creditors, bills payable, accrued expenses, short-term loan, income tax liability and long-term debt maturing in the current year.

A current ratio of 2:1 or more is considered satisfactory. But, whether or not a specific ratio is satisfactory depends on the nature of the business and the characteristics of its current assets and liabilities. The minimum acceptable current ratio is obviously 1:1, but that relationship is usually playing it too close for comfort.

However, it may happen that the firm having higher current ratio may be struggling to meet its obligations and in reverse firms having lower current ratio may be doing well. This is because current ratio only measures total current assets and total current liabilities and does not measure qualities of current assets and current liabilities. So we cannot solely depend upon the current ratio. But at the same time we cannot ignore it because it is the crude and-quick measure of the firm's liquidity.

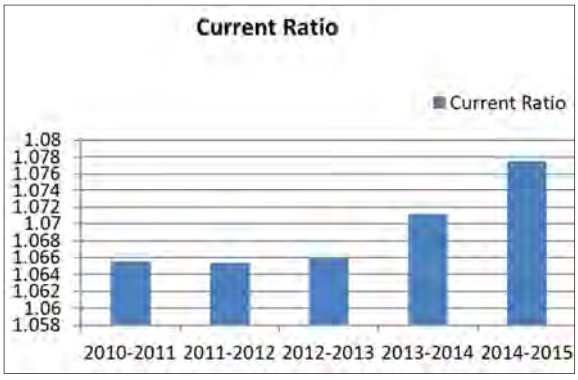
Formula

$$CurrentRatio = CurrentAssets \div CurrentLiabilities$$

Table 1. *Current ratio (times) of XYZ.*

Years	Current Ratio
2010-2011	1.06559548
2011-2012	1.065382145
2012-2013	1.065918067
2013-2014	1.071194461
2014-2015	1.077472083
Average	1.069112

From 2010-2011 to 2014-2015 (rs. In crores).



Current ratio of XYZ, from 2010-2011 to 2014-2015.

Figure 1. *Current ratio of XYZ firm.*

Significance:-In a figure 1 we can easily say that the firm can easily able to pay the payment for its creditors because the current ratio is greater than one. This ratio is able to payment for its creditors because the current ratio is above 1.

The Current Ratio of XYZ is shown in the Table No. 1. In XYZ, the Current Ratio shows fluctuating trend. It ranged between 1.06559543 times in the year 2010-2011 and 1.077472083 times in the year 2014-2015 with an average ratio of 1.069112 times.

The ratio shows increasing trend during the whole study period. Moreover, XYZ had not maintained the standard ratio of 2: 1 times during the whole study period but the current ratio is satisfactory.

Current ratio is shown in Figure 1 was above the average current ratio in the year 2013-2014 and 2015-2015. From the year 2010-2011 to 2012-2013, it was below the average current ratio. However, it was good from standard current ratio during whole study period.

As a whole, from the current ratio, it may be concluded that:

1) The XYZ has good current assets against current liabilities

2) The XYZ has enough current assets to meet the payment schedule of its current debts.

3) The liquidity position of XYZ is good.

4) The liquidity position of XYZ is improving as shown in figure 1.

4.2. Quick Ratio

The quick ratio or acid test ratio is a liquidity ratio that measures the ability of a company to pay its current liabilities when they come due with only quick assets. Quick assets are the current assets that can be converted to cash within 90 days or in a short term. Cash, cash equivalents or marketable securities, and current account receivables are considered quick assets. It measures short term paying ability by measuring short term liquidity.

The quick ratio measures firm's current financial condition. It indicates a firm's ability to meet its current liabilities with its most liquid (quick) assets. The quick ratio is calculated by dividing quick assets (current assets – inventories) by current liabilities.

Quick assets are those current assets which can be converted into cash immediately or at a short notice without diminution of value such as cash, marketable securities, debtors, and bills receivables excluding inventories.

This is so, because it requires some time for converting into cash, addedly their values tend to fluctuate.

Current liabilities include all obligations, which mature within a year such as creditors, bills payable, accrued expenses, short-term loan, income tax liability and long-term debt excluding overdraft, all of which quickly mature in the current year.

This ratio serves as a supplement to the current ratio in analyzing liquidity. This ratio is same as current ratio except it excludes inventories the least liquid portion of current assets. A quick ratio of 1:1 is considered as satisfactory. The Quick Ratio is a much more exact measure than the Current Ratio. By excluding inventories, it concentrates on the really

liquid assets, with value that is fairly certain.

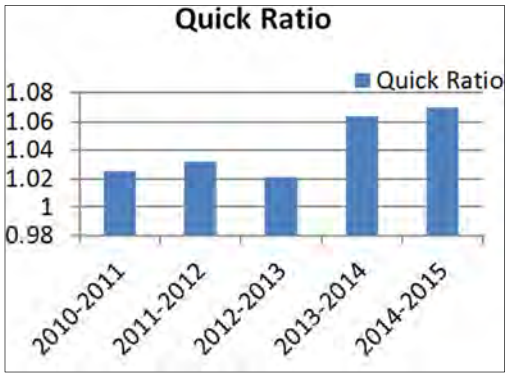
Formula

Quick Ratio = (Current Assets-Inventories) ÷ Cirrent Liabilities

Table 2. *Quick ratio (times) of XYZ.*

Years	Quick Ratio
2010-2011	1.025
2011-2012	1.032
2012-2013	1.021
2013-2014	1.064
2014-2015	1.070
Average	1.043

From 2010-2011 to 2014-2015 (rs. incrores).



Quick ratio of XYZ, from 2010-2011 to 2014-2015.

Figure 2. *Quick ratio of XYZ firm.*

Significance: The figure 2 shows us clearly that XYZ firm having ability to pay payment for its creditors. This ideal figure is 1. As you can see its quick ratio is 1.025 in year 2010-2011 as shown in a Table 2. This means that XYZ can pay off all of current liabilities with quick assets and still have some quick assets left over.

Quick ratio as presented in Table 2 the Quick Ratio also shows fluctuating trend. It ranged between 1.021 times in the year 2012-2013 and 1.070 in the year 2014-2015 with an average ratio of 1.043 times.

The Ratio shows increasing trend except in the year 2013-2014. Moreover, the XYZ had maintained more than the standard ratio of 1:1 in all the five year.

Quick ratio as presented in the Figure 2 was below the average quick ratio up to the year 2013. From the year 2013-2015, it was above the average the quick ratio.

As shown in Figure 2 the quick ratio show a jumps up in the year 2013-2014 due to two fold reasons: first, current assets increased and Second, current liabilities decrease.

As a whole, from the Quick ratio, it may be concluded that:

1) The XYZ has good Quick assets against current liabilities

2) The XYZ is able to meet its current obligations with the readily convertible 'quick' assets.

3) The short-term solvency of XYZ is not poor.

4.3. Gross Profit Ratio

Gross profit ratio indicates the efficiency of the production or operation of trading. The gross profit ratio shows the proportion of profits generated by the sale of products or services, before selling and administrative expenses. It is used to examine the ability of a business to create sellable products in a cost-effective manner. The ratio is of some importance, especially when tracked on a trend line, to see if a business can continue to provide products to the marketplace for which customers are willing to pay a reasonable price. Gross profit ratio (GP ratio) is a profitability ratio that shows the relationship between gross profit and total net sales revenue. It is a popular tool to evaluate the operational performance of the business. The ratio is computed by dividing the gross profit figure by net sales.

Formula

The following formula/equation is used to compute gross profit ratio:

$$Gross\ Profit\ Ratio = Gross\ Profit \div Net\ Sales$$

When gross profit ratio is expressed in percentage form, it is known as gross profit margin or gross profit percentage. The formula of gross profit margin or percentage is given below:

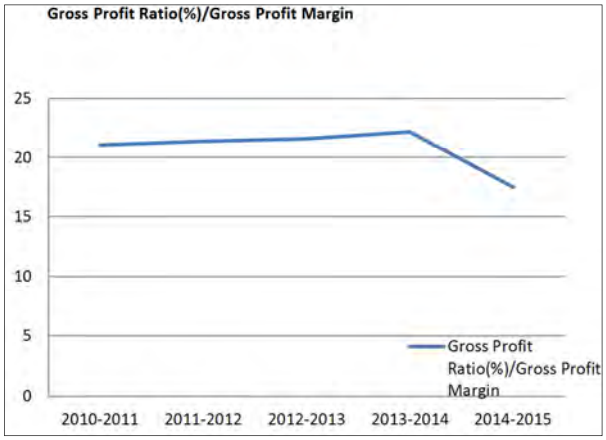
$$Gross\ Profit\ Margin = (Gross\ Profit \div Net\ Sales) \times 100$$

The basic components of the formula of gross profit ratio (GP ratio) are gross profit and net sales. Gross profit is equal to net sales minus cost of goods sold. Net sales are equal to total gross sales less returns inwards and discount allowed. The information about gross profit and net sales is normally available from income statement of the company.

Table 3. *Gross profit ratio (%) of XYZ.*

Years	Gross Profit Ratio/Gross Profit Margin
2010-2011	21.1
2011-2012	21.4
2012-2013	21.6
2013-2014	22.2
2014-2015	17.5

From 2010-2011 to 2014-2015 (Rs. In millions).



Gross profit ratio (%) of XYZ, from 2010-2011 to 2014-2015.

Figure 3. *Gross profit ratio of XYZ firm.*

Significance: Gross profit is necessary tool for a business. It should cover all the sufficient expenses and provide the profit.

There is no norm or standard to interpret gross profit ratio (GP ratio). Generally, a higher ratio is considered better.

The ratio can be used to test the business condition by comparing it with past years' ratio and with the ratio of other companies in the industry. A consistent improvement in gross profit ratio over the past years is the indication of continuous improvement.

This ratio indicates the degree to which the selling price of goods per unit may decline without resulting in losses from operations to the firm. If there is continuous increment in gross profit ratio then it means the selling price of goods is increasing day by day. But the ratio is increasing till 2014 after that it decreased as shown in figure 3.

4.4. Net Profit Ratio

Net profit ratio indicates efficiency of Profit & Loss Account of the firm. The net profit percentage is the ratio of after-tax profits to net sales. It reveals the remaining profit after all costs of production, administration, and financing have been deducted from sales, and income taxes recognized. As such, it is one of the best measures of the overall results of a firm, especially when combined with an evaluation of how well it is using its working capital. The measure is commonly reported on a trend line, to judge performance over time. It is also used to compare the results of a business with its past result.

Net profit ratio (NP ratio) is a popular profitability ratio that shows relationship between net profit after tax and net sales. It is computed by dividing the net profit (after tax) by net sales.

Formula

Net Profit (NP) Ratio=Net Profit After Tax÷Net Sales

For the purpose of this ratio, net profit is equal to gross profit minus operating expenses and income tax. All non-operating revenues and expenses are not taken into account because the purpose of this ratio is to evaluate the profitability of the business from its primary operations. Examples of non-operating revenues include interest on investments and income from sale of fixed assets. Examples of non-operating expenses include interest on loan and loss on sale of assets.

The relationship between net profit and net sales may also be expressed in percentage form. When it is shown in percentage form, it is known as net profit margin. The formula of net profit margin is written as follows:

Net Profit (NP) Margin = (Net Profit After Tax ÷ Net Sales) × 100

Table 4. *Net profit ratio (%) of XYZ.*

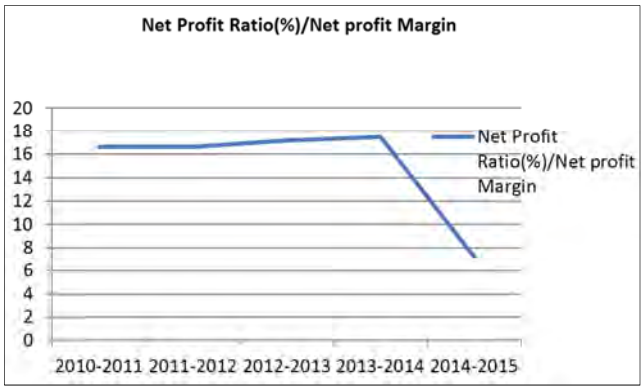
Years	Net Profit Ratio/Net Profit Margin
2010-2011	16.6
2011-2012	16.6
2012-2013	17.2
2013-2014	17.5
2014-2015	7.2

From 2010-2011 to 2014-2015 (Rs. In millions).

Significance:- Net profit ratio indicates net margin on sales. This margin is continuously increasing till 2014 after that it decreasing as shown in figure 4.

Net profit (NP) ratio is a useful tool to measure the overall profitability of the business. A high ratio indicates the efficient management of the affairs of business.

There is no norm to interpret this ratio. To see whether the business is constantly improving its profitability or not, the analyst should compare the ratio with the previous years' ratio, the industry's average and the budgeted net profit ratio.



Net profit ratio (%) of XYZ, from 2010-2011 to 2014-2015.

Figure 4. *Net profit ratio of XYZ firm.*

4.5. Asset Turnover Ratio

The asset turnover ratio is an efficiency ratio that measures a company's ability to generate sales from its assets by comparing net sales with average total assets. In other words, this ratio shows how efficiently a company can use its assets to generate sales. The total asset turnover ratio calculates net sales as a percentage of assets to show how many sales are generated from each dollar of company assets. For instance, a ratio of .5 means that each dollar of assets generates 50 cents of sales.

Total Assets is the sum of all assets, current and fixed. The asset turnover ratio measures the ability of a company to use its assets to efficiently generate sales. The higher the ratio indicates that the company is utilizing all its assets efficiently to generate sales. Companies with low profit margins tend to have high asset turnover

Formula

The asset turnover ratio is calculated by dividing net sales by average total assets.

Asset Turnover Ratio=Net Sales ÷ Average Total Assets

Net sales, found on the income statement, are used to calculate this ratio returns and refunds must be backed out of

total sales to measure the truly measure the firm's assets' ability to generate sales.

Average total assets are usually calculated by adding the beginning and ending total asset balances together and dividing by two. This is just a simple average based on a two-year balance.

Table 5. *Asset turnover ratio of XYZ.*

Years	Asset Turnover Ratio
2010-2011	0.08
2011-2012	0.09
2012-2013	0.10
2013-2014	0.9
2014-2015	0.9

From 2010-2011 to 2014-2015 (Rs. In crores**).**

Asset turnover ratioof XYZ, from 2010-2011 to 2014-2015.

Figure 5. *Asset turnover ratio of XYZ firm.*

Significance:- It indicates the extent to which the investment in total assets contributes towards sales. It compared with the previous period, it indicates whether the investment in fixed assets has been judicious or not.

The Asset Turnover Ratio increasing till 2013 after two years it is constant.

The company is generating Rs 0.08 Rupees of sales for every Rupees invested in assets in year 2010-2011.

This ratio measures how efficiently a firm uses its assets to generate sales, so a higher ratio is always more favorable. Higher turnover ratios mean the company is using its assets more efficiently. Lower ratios mean that the company isn't using its assets efficiently and most likely have management or production problems for instance, a ratio of 1 means that the net sale of a company equals the average total assets for the year. In other words, the company is generating 1 Rupees of sales for every Rupees invested in assets.

Like with most ratios, the asset turnover ratio is based on industry standards. Some industries use assets more efficiently than others. To get a true sense of how well a company's assets are being used, it must be compared to other companies in its industry.

The total asset turnover ratio is a general efficiency ratio that measures how efficiently a company uses all of its assets. This gives investors and creditors an idea of how a company is managed and uses its assets to produce products and sales.

Sometimes investors also want to see how companies use more specific assets like fixed assets and current assets. The fixed asset turnover ratio and the working capital ratio are turnover ratios similar to the asset turnover ratio that is often used to calculate the efficiency of these asset classes.

4.6. Working Capital Turnover Ratio

Working capital ratio is talking about utilization of working capital for the firm. Working capital turnover ratios express the relation between net sales and working capital. This provides some useful information as to how effectively a company is using its working capital to generate sales. The working capital turnover is a measurement comparing the depletion of working capital to the generation of sales over a given period.

Formula

$$Working\ Turnover\ Ratio = Net\ Sales \div Working\ Capital$$

The formula consists of two components – cost of goods sold and net working capital. If the cost of goods sold figure is not available or cannot be computed from the available information, the total net sales can be used as numerator.

Net working capital is equal to current assets minus current liabilities. This information is available from the balance sheet.

Table 6. *Working capital turnover ratio (WCTOR) of XYZ.*

Years	Working Capital Turnover Ratio (WCTOR)
2010-2011	1.311679
2011-2012	1.476821
2012-2013	1.627379
2013-2014	1.3634
2014-2015	1.263146

From 2010-2011 to 2014-2015 (Rs. In crores).

Working capital turnover ratioof XYZ, from 2010-2011 to 2014-2015.

Figure 6. *Working capital turnover ratioof XYZ.*

Significance:-The working capital turnover ratio measure the efficiency with which the working capital is being used by a firm. A high ratio indicates efficient utilization of working capital and a low ratio indicates otherwise. But a very high working capital turnover ratio may also mean lack of sufficient working capital which is not a good situation.

A higher working capital turnover ratio is better. It means that the company is utilizing its working capital more efficiently. The working capital turnover ratio is increasing till 2012-13 every year after that it is decreasing as shown in figure 6. XYZ is clearly using its investment in working capital more efficiently as indicated by its higher working capital turnover ratio that is 1.273789 when compared to other year's ratio.

The highest working capital turnover ratio of XYZ Company is 1.27379. It means the company has turned over its working capital 1.27379 times in 2012-2013.

Generally, a high working capital turnover ratio is better. A low ratio indicates inefficient utilization of working capital. The ratio should be carefully interpreted because a very high ratio may also be a sign of insufficient working capital. The higher your working capital turnover ratio is, the more efficient you are in using working capital to generate sales, but a very high working capital turnover ratio can show that a company does not have enough capital to support its sales growth.

5. Conclusion

Working capital may be regarded as the life blood of business. Working capital is of major importance to internal and external analysis because of its close relationship with the current day-to-day operations of a business. Every business needs funds for two purposes.

a) Long term funds are required to create production facilities through purchase of fixed assets such as plants, machineries, lands, buildings & etc
b) Short term funds are required for the purchase of raw materials, payment of wages, and other day-to-day expenses.. It is otherwise known as revolving or circulating capital

It is nothing but the difference between current assets and current liabilities. i.e. Working Capital = Current Asset – Current Liability.

Businesses use capital for construction, renovation, furniture, software, equipment, or machinery. It is also commonly used to purchase inventory, or to make payroll. Capital is also used often by businesses to put a down payment down on a piece of commercial real estate. Working capital is essential for any business to succeed. It is becoming increasingly important to have access to more working capital when we need it.

Any change in the working capital will have an effect on a business's cash flows. A positive change in working capital indicates that the business has paid out cash, for example in purchasing or converting inventory, paying creditors etc. Hence, an increase in working capital will have a negative effect on the business's cash holding. However, a negative change in working capital indicates lower funds to pay off short term liabilities (current liabilities), which may have bad repercussions to the future of the company.

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