

A Study on Liquidity and Profitability in Selected Indian Software Companies

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ABSTRACT

The present research paper mainly focused on the relationship between liquidity and profitability in selected software companies from the Information Technology sector of India. For the purpose of the study six software companies have been chosen- four top software companies is such as TCS, Infosys, Wipro, HCL and two medium size firms such as Mindtree and Infotech interms of sales have been selected in order to know the size effect of the software companies. The overall working capital management variables mainly liquidity ratio, cash to current liabilities ratio, interval measure ratio, working capital policies in level and financing of current assets –current assets/ non-current asset ratio and share of current liabilities to current assets (short- term financing), profitability ratios such as rate of return on equity and capital employed/net assets have been computed and examined over a period of ten years. The study reveals that when we correlate the liquidity ratios along with level and financing of current assets- liquidity ratios - liquidity and rate of return on equity and capital employed ratios –profitability all sample units together the relationship between liquidity and profitability have not been established among sample units. However, when we correlate the cash levels in terms current assets, current liabilities- gross profit, maintenance of liquidity assets to meet operating expenditure in terms of no. of days and cash turnover ratios to profitability ratios- rate of return on equity and capital employed. We can observed negative relationship between liquidity and profitability have been established among sample units- higher the cash levels lower the profitability and vice-versa.

Keywords: IT sector, Quick Ratio, Cash ratio, Liquidity and Profitability.

INTRODUCTION:

With high market capitalization, Indian firms have become multinational companies with delivery centers across the globe particularly in North America and Europe. Indian software firms have adopted high standard management practices that are comparable to their best competitors in the US and else ware. Indian firms are making global acquisitions through cross border mergers and acquisitions. Most of the Indian firms have strived to attain Excellency in their professionalism and best practices and emerged as internationally competitive services sector in India. The role of Indian Diaspora, new economy and industrial policies, availability highly skilled man power at highly competitive rates, investment in technical education and pro active role of NASSCOM contributed for the growth of software industry in India.

Need of the study and statement of the problem:

Working capital management and Indian Information Technology industry (software).

Efficient working capital management plays a vital role in success of business enterprises. Investment in Current Assets represents a very significant portion of total investment in assets. Most medium and large firms

hold large volumes of investments in current assets. The empirical studies in the literature on working capital provides data that current assets account for 60% of total assets in medium and large public limited companies in India. Therefore, the way the working capital has managed will have a significant impact on performance-profitability and liquidity of the business firms. The empirical studies also provides evidence that there is a significant relationship between the performance – profitability and liquidity and working capital management and inefficient management of working capital is one of the important factors responsible for failure.

The software industry in India is no exception to this phenomenon. A cursory look of balance sheet of top Information Technology (IT) firms in India reveals that investment in current assets account for 60%-70% of total investment in assets. In this context it is interesting to undertake a study on working capital management in Indian Information Technology (software) industry.

REVIEW OF LITERATURE:

Asma Khan and Jyoti Singhal (2015)¹ conducted a study on Growth and Profitability Analysis of Selected IT Companies in terms of ratios over a period of five years. The study mainly concluded there are significant difference between the companies in Operating Profit Ratio and Return on Capital Employed Ratio and there are no significant difference between the companies in Net Profit Ratio, Gross Profit Ratio, and Return on Net Worth Ratio. Dr. Virender Koundal (2012)² made an attempt to analyse the efficiency and profitability of the Indian banks. He categorised the banks in terms of number of employees, business per employee, deposits per employee, advances per employee, bank assets size, non-performing assets etc.,. The main conclusion are as follows; foreign sector bank had been more efficient, small banks are globally efficient and larger banks are locally efficient. Ashok Kumar Panigrahi (2017)³ attempted a research on 30 BSE Listed Indian cement companies. The main objective of finding a relationship between working capital management and profitability based on operating cycle. The study main concluded working capital management and profitability showed a positive relationship and also that shortening of the cash conversion cycle negatively affected the profitability of the firm. K.P.Venugopala Rao and Farha Ibrahim (2017)⁴ they conducted financial performance of IDBI bank based on the ratios for five year period from 2011-12 to 2015-16. They found out that employment of assets and solvency of bank was in tune with the industry average. It also concluded that bank should improve upon its performance in deposits mobilization which is less costly.

T.S.Srinivasan (2005)⁵ examined in this study the growth rate of revenues in IT/ITES sector. He made the comparison of spending on this sector between India and China and also presented the consequences of trouble as arise with Y2K problems with its effect on this sector that made great differences in revenues. But still the consistent growth rate can be observed from this study.

Dr. Mahendra Maisuria & Idrish Allad (2016)⁶ made a study of selected pioneer Indian IT companies for the period from 2010-11 to 2014-15 reveals the difference in the profitability of the companies. If we analyze Net Worth Ratio and Return on Capital Employed of selected Indian IT companies, it is cleared that TCS is the highest among the other companies and Tech Mahindra has the lowest performance. If we consider EPS then Infosys pays highest EPS of Rs. 139.49 and Wipro pays lowest EPS of Rs. 20.58.

Vijayasri (2013)⁷ analysed the IT sector in India and the relationship between Information Technology and Indian economy. It also examines the government incentives to promote the IT sector.

Puttanna (2014)⁸ studied Performance Analysis of Information Technology Sector in India. The main objective of this paper is to understand the EBIT-EPS analysis of 10 BSE companies in IT sector. It also conducts a comparative study of EBIT-EPS analysis and security returns of IT sector. The study on EBIT-EPS analysis reveals that all the companies in IT sector are following different strategy with respect of their earnings and debt funding.

Rupesh & Yuvraj⁹ analyzed the Financial Performance of TCS and Wipro with respect to Ratio Analysis for financial year 2011-12. The financial analysis implies that the current and future financial health of TCS is better than that of Wipro Ltd.

Dossani (2005)¹⁰ explained in his paper about the origins, growth and sustainability of Indian software industry. The paper also discusses about the effect of rigid and hostile government policies concerned with this sector domestic and international market. The paper shows that technologically sophisticated industry can develop even when many conditions typically present elsewhere are missing. The paper also throws light on the conditions in which transnational entry was made.

Shenbagam & Kannappan (2015)¹¹ they have conducted a study on Financing position and performance analysis with special references to Tata Consultancy Services for the period of five year i.e., from 2010-11 to 2014-15 based on annual report. The major finding of the study is that in all years from 2011 to 2015 the

company steady process to return funds –Rate of return on equity to the share holders i.e., very well encourageable.

Aarti¹² Viewed Information Technology scenario from different perspective that Indian IT industry as an industry caters to the IT requirements and its deployment within Indian industry. To make the improvement in business efficiency new solutions and ideologies are being accepted by helping in automating business processes and converting them into extremely cost effective moneymaking machine.

The impact of IT is not restricted to its passive contribution to GDP alone. IT acts as a transformational agent in Indian economic development helps to promote infrastructure like power, road, electricity etc. Growth of domestic market shows a CAGR of 23% over 05-06. The infrastructures cost tends to going down with this prosperous growth. But several problems like absence of active demand, scarcity in proper infrastructure also exists. It also recognizes that a vibrant and innovative domestic IT market is sine qua non for sustaining the countries IT industry's competitive advantage¹³.

IT, a fastest growing industry in India makes a significant contribution to GDP in way of exportation of IT services and ITES product and becomes a preferred global sourcing base in this sector. But some problems are there in relation to risk management, human capital attraction and retention and cost management. A key demand driver for Indian IT services and ITES industry has been the changing global business landscape, which has exerted performance pressure on MNC enterprises¹⁴.

Ghosh and Maji (2003)¹⁵ made an attempt to examine the efficiency of working capital management of the Indian IT and ITES companies during 1992-1993 to 2001-2002. For measuring the efficiency, performance, utilization, and overall efficiency indices were calculated instead of using some common working capital management ratios. Setting industry norms as target-efficiency levels of the individual firms, and tested the speed of achieving that target level. Findings of the study indicated that the Indian IT and ITES as a whole did not perform remarkably well during this period.

The review of above existing literature on Working Capital Management in IT/ITES reveals that most of the studies concentrated mainly on financial performance of IT/ITES and they have not studies the relationship between liquidity and profitability. Hence, an attempt will be made in this study to analyse mainly the relationship between liquidity and profitability- the working capital management in Indian IT/ITES with the following specific objectives which are as follows:

To assess the liquidity position in sample software firms;

To analyse the levels of investment and financing of current assets in sample units

To evaluate the cash management in sample units and finally

To study and analyse relationship between liquidity and profitability in sample units

METHODOLOGY:

Approach:

For the purpose of the achieving objectives of the study, 10 years average of each sample units have been computed. Based on 10 years average current assets structure-components, the liquidity ratios, working capital policies- level and financing of current assets cash ratios and profitability ratios i.e., liquidity and profitability analysis have been made among sample units. The above mentioned ratios have been compared and analysed based on general norms /standards available in literature to understand whether the sample units have been adopting conservative policies –high liquidity and lower risk –lower profits or aggressive policies –low liquidity and high risk and high profits. These liquidity ratios have been correlated to profitability ratios to study the relationship between liquidity and profitability. Further to know the variations among sample on the above ratios, sample units have been grouped into three groups i.e., very high, moderately high and high units based on some procedure/method in order to know the relative position of sample units based on 10 years averages*. Time series analysis are (trend) also carried out wherever necessary.

(a) Scope and period of the study

The present study is confined to only Indian IT/ITES (software) sector because of two factors i.e., the IT/ITES possess special features and its contribution to Indian economy in terms of exports (more than 20% of total exports of India); contributing more than 9% to GDP in FY 2016-17. The sector also accounted for 74% in trade performance of Indias major services in 2016-17, India emerged as World No.1 destination with significant share of 55%. IT sector is the largest employment provider in the context of jobless economic growth in organized sector (more than 15 millions-both direct and indirect employment). The study is confined to the period from 2007-08 to 2016-17- ten years period.

(b) Sampling

Four out of 7 top units of IT companies such as Tata Consultancy Service (TCS), Infosys, Wipro, HCL, (as they account for 35% of total revenues and employment in software sector) and to know the size effect if any two medium-size enterprises such as Infotech and Mindtree have been selected based on sales for the purpose of the study.

(c) Data base

The study is based on secondary data. The secondary data has been collected from Books of Accounts, Records, and Annual report of the sample units through different websites, published reports and journals.

(d) Tool used

Various accounting and statistical techniques have been used for the purpose of analysis. Among accounting techniques financial ratios are employed for the purpose of the study. Simple statistical techniques such as percentages, averages for a period of ten years period and also to study the trend analysis we also used graphs on important variables.

The following financial ratios have been computed and used for the purpose of the present study

quick ratio = $\text{current assets} - \text{inventory} / \text{current liabilities}$

cash ratio = $\text{cash} / \text{current liabilities}$

interval measure I = $\text{all expenses} / \text{current assets}$

Total liabilities to total assets ratio

Long term debt to equity ratio = $\text{long term debt} / \text{networth}$

Return on equity = $\text{profit after tax} / \text{networth}$

Return on equity capital = EBIT / CE

Cash to current assets in terms of percentages (%)

Cash to gross profits (%)

Cash and bank balances to total operating expenses per day (Number of days)

PRESENTATION OF ANALYSIS:

Working capital structure:

Working capital management refers to the administration of all components of working capital-cash, marketable securities debtors (receivables) inventory (stock), the financial manager must not only determine the levels of current assets but should also determine the composition of current assets because efficient management of individual current assets plays an important role in managing working capital efficiently and effectively. Further, the liquidity position of the firm depends on the quality and nature of individual current assets.

Data on working capital structure reveals that on an average (sample average for ten years), debtors and cash and bank balances constitute one-third each; short-term loans and advances constitute 22 % and current investments constitute 10% of total assets. However, inventory constitute almost nil percentage of investment in current assets. Thus, sample units invested large portion of investment in debtors, cash and bank balances and short-term loans and advances and significant portion of investment in current investment. Generally inventory constitute largest portion of (60%) investment in current assets and after inventories, trade debtors constitute major portion of current assets (about one-third) and cash balances constitute around 10% of current assets in several firms in India. But the investment pattern of current assets in sample software companies are entirely different from general pattern in India mainly in two aspects (i) almost nil investment in inventory and (ii) large amount of investment in cash holdings and loans and advances. This may be because of peculiar nature of software industry in India that it renders services based on knowledge of technical manpower and will not utilize any physical form of raw material in producing and rendering services; and it is mainly export oriented industry and revenues mainly came from exports services and they are global companies (table 1).

Current assets structure and individual sample units:

They are wide variations among sample units in investment of individual current assets. Infosys and Infotech have very high proportion of cash holding and lower proportion in debtors and short-term loans and advances

when TCS and Mindtree have lower proportion of cash and higher proportion in debtor's short term loans. HCL maintained moderately high cash and debtors and very high short-term loans and advances- Wipro maintained moderately high cash and short term loans and advances but lower in debtors.

Thus, TCS, Mindtree, Infosys, and Infotech follow some uniform pattern (whether high or lower) in investment in different components/individual current assets compared to Wipro and HCL (No uniform pattern). Of course each pattern has its own advantages and disadvantages.

LIQUIDITY RATIOS:

The quick ratio is 2.85:1 in the sample units during the study period. This ratio indicates the current assets are nearly three times more than current liabilities. The quick ratio of 1:1 is the general norms which indicates satisfactory current financial conditions. Thus, the present quick ratio is very high by any norms in all units.

The cash ratio (cash/current liabilities) is 1.03:1 in the sample units. In other words firms keep cash more than 100% of current liabilities, 20% of current liabilities -cash ratio is the general norms. This indicates cash ratio is very high.

Internal Measure ratio assess the extent of liquid assets to finance its business operations. The sample units maintained liquid asset for a long period of 10 month to meet its business operations compared to 3 or 4 months in general/ acceptable norms. Thus sample units maintain liquid asset for a long period to meet business operations. On the whole, it can be concluded that three liquidity ratios reveals that sample units are highly liquid during the study period(table 2).

With regard to individual sample units as per the norms all sample units are highly liquid in terms liquid assets, current liability, Cash to current liability, the extent of liquid assets to meet business operations.

However, there are high variations among individual sample units in each liquidity ratios. To understand extent of overall liquidity position of individual sample units the **liquidity index** based on three liquidity ratios has been calculated and analysed**. By analyzing the liquidity index, it can be concluded Infosys and Infotech are very high liquid, TCS is moderately high liquid and Wipro, HCL and Mindtree in sufficiently liquid as per norms (Table 3).

Levels of investment in current assets :

The financial manager should determine the levels of current assets and its financing from different sources. The levels of current assets depends mainly on the working capital policies of the firm because to support the same level of out- put/sales, the firm can have different levels of current assets. In practice firms follow the different working capital policies viz., (i) conservative current assets policy (ii) aggressive current assets policy and (iii) moderate current assets policy relating to investment in current assets. The level of current assets to fixed assets that is dividing current assets by fixed assets gives current assets/non-current assets ratio (CA/NCA ratio). Assuming a constant of Non-current assets, a higher CA/NCA ratio indicates conservative current assets policy and lower ratio indicates aggressive current assets policy other things remain the same. A conservative policy indicates greater liquidity and lower risk, where as aggressive policy indicates higher risk and poor liquidity. Moderate policy falls in between conservative and aggressive policies.

Share of current assets to total assets and sales:

The current assets are substantially higher than non-current assets and constitute more than 60 per cent in sample units both in sales (60%) and total assets(62%) but there are variations among sample units. Current assets constitute 73 per cent to 80 per cent sales in Infosys and Wipro, 55% to 60 % in HCL and Infotech and 40% to 50% in TCS and Mindtree. Current assets also constitute around 60 per cent of total assets in sample units in five units and only in Infosys it is 73 per cent.

Current assets- non-current assets ratio (CA/NCA):

Current and non-current assets ratio is 1.82: 1 in sample units. It implies sample units invested one rupee eighty two paise for one rupee of investment in non-current assets. The CA and Non CA ratio is morethan 1:1 ranging 1.30 to 2.74 than noncurrent assets in all sample units. Thus, this indicate all sample units have adopted conservative policy in the level of current assets. Generally if the current assets are equal to fixed assets it can be treated that the firm followed conservative policy as per Western and Bringham¹⁶. The ratio is very high-(2.74:1) in Infosys and the ratio is moderately high in Wipro, TCS, Mindtree and Infotech and only in HCL it is lower than (1.30:1) compared to sample averages.

Financing:

Firms adopt different financing policies in financing its current and fixed assets. Depending upon the mix of short and long term financing. In practice there are three financing policies/ approaches in financing its current and fixed assets viz (i) conservative (ii) aggressive and (iii) moderate. The conservative policy depends mainly on long term financing and less risky and less profitable. The aggressive policy depend mainly on short-term financing and risky and high profitable. Moderate policy is in between these two extremes.

Total debt ratio (total liabilities/total assets):

The total debt ratio is 0.29 in sample units. This indicates that lenders have financed less than 30 per cent of total assets. Longterm debt finance of total assets is only 5 per cent in sample units, 10 per cent in HCL and Wipro and in other firms it is less than 4 per cent. Short-term debt to total financing is 24%, ranging 18% to 24% in sample units. This pattern of financing obviously implies that firms mainly depend internal resources (70%) (own funds) in financing total assets.

Long term debt to worth ratio (debt to equity ratio):

The debt equity ratio is just 8 paise for one rupee of networth in sample units. This indicates that sample units have used very less long-term debt –equity driven - in financing their assets. Only in HCL and Wipro have used 9 paise to 10 paise the other firm such as Infosys, TCS, Mindtree and Infotech used very little amount of (0.39% to 4%) long term funds. However, sample firms lost the opportunity of financial leverage advantage due to very low debt ratio.

Financing of current assets:

Short term financing covers 40% of total current assets and long term financing covers 60% of total current assets. Thus, sample units adopted conservative approach in financing current assets. Short term financing constitute high proportion of 56% in HCL, Moderate proportion between 39% to 49% in TCS, Mindtree and Wipro and very low proportion between 25% to 29% in Infosys and Infotech. On the whole, Infosys and Infotech adopted conservative policy TCS, Wipro and Mindtree adopted moderate policy and HCL adopted aggressive policy in financing current assets (table 4).

Profitability:

The two objectives of working capital management are liquidity and profitability. Liquidity has been as already been analysed now analysis of profitability has been presented. The investors invest their funds in expectation of reasonable returns. The ability to ensure adequate return to shareholders depends ultimately on the profits earning potentially of the firm - profitability. Hence, profit is the ultimate output of a firm and it will have no future if it fails to make sufficient profits. Profitability ratios in relation to net assets/capital employed and equity employed (net worth) of the firm. This ratios are popular to measure profitability (table 5).

Return on capital employed ratio refers to relationship between profits before interest and tax (EBIT) and capital employed. It indicates the operating efficiency and also provide the sufficient insight into how effectively the long term funds of owners and lenders are being used and rewarded. Return on Equity refers relationship between profits after taxes and owners investment /net worth. ROE indicates how well the firm has used the resources of owners. This probably the single most important ratio to judge whether the firm has earned a satisfactory return for its equity holders or not. This ratio is of great interest to the present as well as the prospective shareholders. The management is also has great concern to this ratio because the management has the responsibility of maximizing the owner's welfare.

The sample units earned on an average 29 of return on capital employed and 25% on equity capital during the study period. These rates of returns are very good and high by any norms of industry. Particularly, 10% to 12 % on return on equity in large scale units is considered satisfactory and good.

Among top software firms TCs earned very high returns on both ratios relatively, Infosys, HCL, Wipro, also made moderately high returns on both net assets and equity capital, between medium size firms Mindtree made higher returns compared to Infotech on both ratios. Thus, there are wide variations among sample units on both ratios.

Liquidity and Profitability:

On the whole by analysing the data it can be concluded that sample units maintained very high liquidity in terms of quick ratio (2.86:1) cash/liabilities ratio (1.03:1), to meet operational experiences for a long period-

nearly 10 month. Further sample units followed high conservative policy in investment (1.82:1) and financing (share of short term financing is 40%) in current assets. Thus it can be concluded from the above data that working capital management is not efficient in sample units.

However, surprisingly they have earned nearly 29% returns on net assets and 25% profit on network. This implies that sample units though maintained high levels of liquidity with conservative working capital policies of investment and financing but they are successful in earning high rate of profits both in equity capital and capital employed and occupied highest position in Indian software industry. In other words it can be concluded that there is no negative relationship between high liquidity and profitability.

Profitability and liquidity - individual units:

With regard to individual sample units, TCS made very high rate of returns both in equity (36%) and capital employed (43%) relatively. Infosys -26% and 34%, HCL, -26% and 27%, Wipro - 23% and 23% made both on return on equity and capital employed respectively. The medium size firm Mindtree made higher returns (21% and 25%) compared to another medium size firm Infotech (17% and 18%) on both ratios. As already mentioned that as per norms 12% rate of return on equity capital is a good and satisfactory. Thus, all sample units made high returns when compared to normal standards.

At the same time on the face of it all sample units have maintained high liquidity rate 2.85:1. Even lowest ratio of 1.84 of HCL is higher than the normal standards (1:1). Cash liability ratio is high in all sample units as per norms ranging 0.31% to 2.42%. Further they are maintaining current assets to meet operating of expenses for a long period of 10 months- ranging 6 months to 15 months compared to normal standard of 3 to 4 month. Further all sample units adopted conservative policies in investment of current assets. In financing of current assets five firms followed moderate (three firms such as TCS, Wipro and Mindtree) and conservative (two firms such as Infosys and Infotech) policy but HCL followed aggressive policy.

On the whole, it can be concluded that all sample units have maintained high liquidity and adopted conservative policy in level and financing of current assets. As a result, it can be concluded that there is no negative relationship between profitability and liquidity there by inefficient working capital management.

However, if we analyse the data of cash and debtors management among individual sample units we can observe different picture. As already noticed in structure of currents and cash/liabilities ratio some units keep cash excessively where as some units keep cash not excessively (as per general norms or just above general norms) (table 6).

According to Guthmann and Dougall¹⁷ the financial experts and generally Indian firms hold cash of 5% to 10% of current assets and 10% to 20% of current liabilities and gross income. Further financial analysts are also of the opinion that a business enterprises keep cash and near cash reserves below one month of normal/operational expenditures. Its cash and near cash reserves happen to be more than this limit, it should be taken for granted that excess level of cash is being curried by the firm^{18, 19}.

In the following pages, we made an attempt by correlating profitability of individual sample units and cash levels of individual sample units. The results are as follows: Mindtree keep cash at normal (general norms) and lower level (size) in all three variables-11% in relation to current assets, 31% in relation to current liabilities and 12% in relation to gross profit and keep cash to below one month to meet operating (12 days) expenses. Cash turnover also is very high -one rupee generates 24 rupees of sales –highest among sample units. TCS also keep cash at just above normal level (size) in relation to current assets (21%), current liabilities (62%), and gross profits (17%). Further it keeps cash below two months (55 days) for meeting operational expenses. Sales turnover is also high -14.46 rupees sales- second highest. Thus TCS and Mindtree hold lower level of cash compared to sample average which also met more or less normal standards and high-cash sales turnover.

On the other hand the Infosys and Infotech keep excessive cash in all variables-60% 243%, 112 days and nine months in relation to current assets, current liabilities, gross profit and meeting operating expenditure respectively. Cash turnover is also very low-only 2.13 rupees. Infotech also keep cash excessively in all variables -43%, 165%, 65% and four months in relation to current assets, current liabilities and meeting operating expenditure and cash sales turnover is Rs.4 only. Thus, Infosys and Infotech keep cash excessively and very high level (size) of cash in all variables and low turnover. This implies cash management is not efficient.

HCL also keep excessive cash in all variables 32%, 62% and 39% and three months in relation to current assets, current liabilities, gross profits and meeting operating expenditure respectively but low cash turn over only Rs. 6 sales and Wipro also keep excessive cash in all variables 29%, 61%, 49% and morethan 3 months respectively. and low cash turnover of Rs. 5. However, when compared to Infosys and Infotech the cash levels are not that excessive.

If we correlate the profitability and the cash levels, certainly TCS keep cash levels not excessively and maintain at just above normal level but made highest profits compared to Infosys, HCL, and Wipro (the other three top software firms). And also Mindtree keep cash at lower level -a medium size firm –made higher profits compared to another medium size firm of Infotech -keep cash excessively in all three variables.

Further trend analysis indicates that TCS consistently making highest profits on both ratios over the ten years period whereas Infosys show declining trend on both ratios. Mindtree also show increasing trend on both ratios but Infotech also show increasing trend on both ratios, HCL and Wipro registered declining on both ratios.

Thus, on the whole, it can be concluded from the above analysis that there is negative relationship between cash levels and profitability in sample units. This implies higher the cash levels lower the profits and vice-versa (table 7).

In respect of debtors management TCS and Mindtree made high proportion of investment in debtors (42% and 47% respectively) in current assets and total assets (25% and 27% respectively). The share of loan and advances in current assets is also higher in two firms (26%, 23%). This is because they have adopted liberal credit policies followed by collection of cash from debtors (only 10 or 15 days more compared to general norm of 60 days). The liberal credit policy resulted in higher investment in debtors and short term loans and advances there by higher growth in sales (CAG is 21% and 21%). This factor also might have contributed to make higher profits compared to other units. Where as Infosys and Infotech made lower size investment in debtors (21% to 37%) and loans and advances (15% and 15%) and also Infosys followed stringent credit policy lower growth in sales (15%) but Infotech adopted liberal credit policy, and inefficient debtors management relating to collection of cash from credit sales and lower sales growth rate (18%). This factor also might have contributed for lower profits compared to TCS and Mindtree.

Thus, on the whole, the levels of cash in relation to current assets, current liabilities and gross profit might have played an important role in establishing relationship between liquidity and profitability i.e., higher the cash levels lower the profits and vice-versa. The level of investment in debtors- higher or lower also played an important role in the relationship between liquidity and profitability. Further if Infosys, Infotech, HCL, and Wipro would reduce cash levels they might have earned more profits than the present rates of returns.

CONCLUSIONS:

The pattern of current asset structure of software companies are entirely different from the other industries. All sample units are maintaining high liquidity ratios and conservative working capital policies in level and financing of current assets. However, there are wide variations among sample units on the above ratios. With regard to profitability all sample units are making good and satisfactory results on both return on capital employed and equity capital. Here also, there is wide variation among individual sample units. The relationship between liquidity and profitability has not been established if all the sample units taken together. However, if we correlate cash levels and debtors in current assets to the profitability ratios we can observe there is a negative relationship between cash levels and profitability. That is higher the cash levels (excessive cash) lower the profitability. In other words lower the cash levels higher -the profitability-higher the cash levels lower the profitability and vice –versa. Further there no size effect between medium size firms and top software firms in this regard.

REFERENCES :

- Asma Khan & Jyoti Singhal (2015). Growth and Profitability Analysis of Selected IT Companies. *IRACST – International Journal of Commerce, Business and Management (IJCBM)* – Vol. 4, No.3, 2319–2828
- Dr. Virender Koundal (2012), Performance of Indian Banks in Indian Financial System, *IRJC International Journal of Social Science & Interdisciplinary Research*, Vol.1, Issue 9, 2277 3630.
- Dr. Ashok Kumar Panigrahi (2012). Impact of Working Capital Management on Profitability – A Case Study of ACC, Ltd. *Asian J. Management* – 3(4), 210-218
- K. P. Venugopala Rao & Farha Ibrahim (2017). Financial Performance Analysis of Banks – A Study of IDBI Bank. *International Journal of Research in IT and Management (IJRIM)* - Vol.7, Issue 1, 64-72
- Dr. Mahendra Maisuria & Idrish Allad, (2016). Profitability Ratio Analysis of Selected Indian IT companies: A Comparative Study. *International Multidisciplinary E-Journal*, Vol.V, Issue-II, Feb-2016, pp. 207-220.
- Vijayasri G. (2013). The Role of Information Technology (IT) Industry in India. *International Journal of Research in Management & Technology*, 2 pp. 1-11.
- Puttann K. (2014). Performance Analysis of Information Technology Sector in India. *International Journal of*

Economic and Business Review, 2(3) pp. 1-7.

Kumbhaj R. & Y. (2013). Financial Analysis of TCS and Wipro with respect to Ratio Analysis. *Altius Shodh Journal of Management & Commerce*, pp. 1-12, 2013

Dossani R. (2005). Origins and Growth of Software Industry in India. *Asia-Pacific Research Center Stanford University*. Pp. 1-33.

Shenabagam & kannappan, (2015). A study on Financial Position and performance analysis with special reference to Tata Consultancy Service. *Global journal for research analysis*, vol-4, Issue-7, July-2015, pp.98-101.

Bari, R.R., *Cash Planning and Management*, selected readings in cash management, edited by R.R. Bari, Op.cit., p. 5.

Cohen, J.B., and Robbins, S.M., *The Financial Manager*, Harper and Row publishers, New York, 1966, p.327.

Table 1: Structure of working capital in sample units- ten years period (2008-2017) average in %

Type	INFOSYS	TCS	HCL	WIPRO	MINDTREE	INFOTECH	Total	AVG
% of current investment to current assets	3.43	10.33	3.36	19.31	19.28	2.54	58.25	9.71
% of inventory to inventory	NA	0.09	1.62	2.8	0	1.38	5.89	0.98
% of debtors to current assets	21.02	42.15	36.13	26.03	46.71	37.39	209.43	34.91
% of cash and bank balance to current assets	59.86	21.69	32.07	28.52	11.37	43.47	196.98	32.83
% of short-term loans and advances to current assets	15.7	25.74	26.83	23.34	22.64	15.21	129.46	21.58

Source: Computed from companies Annual Reports

Table 2: Liquidity Ratios in Sample Units the Period of 2008-2017 (Ten Years Average)

Type	INFOSYS	TCS	HCL	WIPRO	MINDTREE	INFOTECH	Total	AVG
Quick Ratio	4.01	2.84	1.84	2.08	2.64	3.71	17.15	2.858
% cash to current liability	2.42	0.57	0.62	0.61	0.31	1.65	6.18	1.03
Interval measure – I (days)	436	257.92	248	343.04	189	265.40	1730	290

Source: Computed from companies Annual Reports

Table 3: Liquidity Index

Distibulation of Sample Units According to the Range of Liquidity Ratios Quick Ratio		Cash Ratio		Internal Measure (DAYS \ MONTHS)	
Category \ Group	Name of The Units	Category \ Group	Name of The Units	Category \ Group	Name of The Units
Very high above ratios 3.42 ratio	Infosys and InfoTech	Very high above ratios 1.24 ratio	Infosys and InfoTech	Very long period (days) above 348 days	Infosys

Distibulation of Sample Units According to the Range of Liquidity Ratios Quick Ratio		Cash Ratio		Internal Measure (DAYS \ MONTHS)	
Category \ Group	Name of The Units	Category \ Group	Name of The Units	Category \ Group	Name of The Units
Modulator high ratios between 2.28 to 3.42 ratio	TCS and Mind Tree	Modulator high ratios between 0.8 to 1.24 ratio	-	Modulator long period between 2.2 to 348 days	TCS, Wipro, HCL and InfoTech
High ratios less than 2.28 ratios	HCL and Wipro	High ratios less than 0.84 ratio	TCS, Wipro, HCL and Mind Tree	High period less than 232 days	Mind Tree

Table 4: Level and Financing of Current Assets During 2008-2017 in Percentage

Type of ratio	INFOSYS	TCS	HCL	WIPRO	Mind Tree	Infotech	Total	AVG
ratios of current assets to non- current assets	2.74	1.70	1.30	1.81	1.59	1.81	1095	1.82
% of Non- current liabilities to total assets	0.39	1.73	9.77	9.28	3.55	4.23	28.95	4.82
%of Current liabilities to total assets	18.17	22.65	30.41	30.00	23.24	18.19	142.66	23.77
% of Current liabilities to current assets	25.11	38.95	55.93	47.39	40.52	29.24	237.14	39.52

Source: Computed from companies Annual Reports

Table 5: Profitability Ratios During 2008-2017 Average in Percentages

Type of ratios	INFOSYS	TCS	HCL	WIPRO	Mind tree	Infotech	Total	AVG
PAT/net worth	26.07	35.75	25.67	23.08	21.39	16.69	144.34	24.78
EBIT/capital employed	34.02	43.45	26.76	23.46	25.12	18.32	182.75	28.52

Source: computed from companies annual reports

Table 6: Cash Levels Of Selected Sample Units In Terms Of Percentages

	Variables	INFOSYS	TCS	HCL	WIPRO	Mind tree	Infotech	Total	AVG
1	Cash and Bank Balances / Ca(%)	59.86	21.54	32.07	28.52	11.37	43.05	196.41	32.74
2	Cash and Bank Balances/Cl(%)	243.10	62.00	62.00	60.91	30.82	165.36	621.51	104.03
3	Cash and Bank Balances/Total Revenue(%)	111.86	17.20	38.52	48.64	12.23	65.02	293.47	48.83
4	Cash and Bank Balances/Total Expenses Per Days (Days)	263.05	54.88	86.23	97.24	22.10	138.47	661.97	110.33

Source: Computed from companies annual reports

Table 7: Levels of Cash and Profitability- Liquidity and Profitability

Name of the firms	Cash Levels	Cash levels			Measurement ratio (Days)	Cash/profitability		
		Current assets	Current liabilities	Gross profits		Sales turnover Rs.	Return on equity	Capital employed
TCS	Lower cash levels	22%	57%	17%	55 days	14	36%	43%
Mindtree (Medium Size firms)		11%	31%	12%	22 days	24	21%	25%
Infosys	Excessive cash levels	60%	243%	112%	263 days	2	26%	34%
Infotech (Medium size firm)		43%	165%	65%	138 days	4	17%	18%
HCL	Excessive cash levels but less than Infosys & Infotech	32%	62%	39%	86 days	6	26%	27%
Wipro		29%	61%	49%	97 days	5	23%	23%
