

Determinants of Working Capital Requirements in Public Universities in Kenya: A Case of Technical University of Mombasa

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Abstract: All businesses are created in order to make profits and consequently maximize shareholders wealth. Working capital is important because it provides a measure of a firm's ability to meet its short term debt obligations from its holding of current assets. A number of factors have been identified before as influencing the working capital ratios in organisations. These include cash conversion cycle, operating cash flow, leverage, firm size, return on assets, interest rate on loans, and economic growth of a country. This study is intended to assess the determinants of working capital requirements in the Technical University of Mombasa. The university has been selected given that it is one of the recently created public universities having transited from being a technical college and therefore the management of its working capital is important for its survival. Further, the working capital management is important for public universities in Kenya as there is currently no study that has addressed this issue in the public universities in Kenya. Available studies have mostly focused on listed firms. The study is designed as a descriptive study. The focus focused on the Technical University of Mombasa and therefore the sample was restricted to the annual reports of the university from 2010 to 2012. Desk review was used to collect and analyse the data. The study finds that working capital requirements of TUM are influenced by its size, nature of business, credit period, seasonality, and potential growth, changes in price levels, access to money markets, working capital cycle and the efficiency of operations.

Keywords: Working Capital, Public Universities, Technical University of Mombasa, Kenya.

1. INTRODUCTION

Working Capital Management:

Brigham and Houston (2007) describe working capital as a financial metric that represents operating liquidity available to a business, organization or other entities including governmental institutes. It is considered as part of operating capital along with fixed assets. VanHorne and Wachowicz (2004) describe working capital as being composed of two components, the net working capital and the gross working capital. The net working capital comprises the current assets less the current liabilities. The gross working capital comprises cash and marketable securities, receivables and inventory.

Managing the financial needs and operations of any business is very important to the management of the company, because it has an effect on both profits and liquid assets of the firm. Financial needs are largely classified into two types of needs: working capital needs and fixed capital needs. That part of finance which enables an enterprise to conduct its day-to-day operations is called working capital. We need to analyze short term assets and liabilities carefully in order to manage the firm's liquidity, management of working capital helps managers to manage their operation of the firm through making available cash to pay for short-term debt and the maturity of long term debt as well as expenses resulting for daily operations. So, an optimal level of working capital must be kept to trade off between return and risk (Ranjith, 2008).

One of the integral components of the overall corporate strategy is to manage working capital efficiency. This needs to control short term obligation as well as decrease investment in liquid assets as much as possible in order to create

shareholder value (Eljelly 2004). In practice, Narender, Menon and Shewtha, (2009) show that a firm may lose several profitable investment opportunities or suffer a liquidity problem if the working capital is too low or it is improperly managed.

Working capital management is concerned with managing current assets, current liabilities and the interrelationship that exists between them. Current assets being those that in the ordinary course of business can be converted to cash in less than a year mainly comprise cash, inventory and accounts receivable. Current liabilities are liabilities which at their inception are expected to be paid within a year, comprising mainly of accounts payable and bank overdrafts. An increase in working capital level shows the company has increased its current assets, or decreased its current liabilities. When working capital level decreases, the opposite of the above is deemed to have happened (VanHorne and Wachowicz, 2008).

When the current assets are more than the current liabilities, the firm is said to be liquid and enjoys a positive working capital. Positive working capital is necessary for a firm to continue its operations and for it to satisfy both maturing short term debt and upcoming operational expenses. Where the current liabilities exceed the current assets, the firm is said to have a working capital deficit. Negative working capital affects the smooth operations of the company. It is possible for a company to have assets and enjoy profitability but be illiquid, if its assets are not readily converted into cash (VanHorne and Wachowicz, 2008)

When the firm is able to accurately forecast its sales and subsequent receivable collections, it will be able to arrange its debt maturity schedule so that net cash flows match the schedules, hence eliminating the need for holding excess assets. This will in turn maximize profits. However, where that certainty is not possible, the firm will need to operate on a margin of safety. The current assets should be large enough to cover current liabilities in order to ensure a reasonable margin of safety each of the current assets must be managed well so that there is no excess held, while each of the current liabilities must be contained in levels enabling the best possible use. A decision on the appropriate margin of safety will be determined by considerations of risk and profitability and by management's attitude towards risk, with each solution costing the firm something in its profit making effort (VanHorne and Wachowicz, 2008).

The task of the finance manager in managing working capital is to ensure the liquidity of the firm. The liquidity is measured by the Current ratio which is given by current assets divided by current liabilities. It shows the proportion of current assets available to cover current liabilities. It shows the ease with which the short term assets of the firm can be used to pay the short term liabilities (Loth , 1992) The Acid Test ratio which is given by Current Assets less Inventories and Prepayments, and the result divided by current liabilities is another measure of liquidity. It measures the short term liquidity of a company and reflects how quickly and easily the short term debts can be paid through the use of liquid assets (Leach, 2010).

Efficient working capital management requires that firms operate with some NWC, because cash outflows and inflows do not coincide. Where current assets exceed current liabilities, the excess must be financed by long term funds. The firm will thus weigh the options of increasing risk through additional financing against the profits to be attained (VanHorne and Wachowicz , 2008)

Another popular measure of working capital is the Cash Conversion Cycle (CCC). Rose, Westerfield and Jordan, (2010), define it as the length of time taken from the acquisition of inventory to the time cash is collected from receivables. It has the inventory period, which is the time taken to acquire raw materials to the sale of inventory, and the accounts receivable period which is the time taken to collect cash on the sale. The longer the CCC time, the larger the investment in working capital (Deloof, 2003). A longer CCC might lead to high profits due to higher sales. However, it could also lead to decreased sales if the cost of investment in working capital rises faster than the benefits of holding more inventories and / or granting more credit sales.

Technical University of Mombasa:

In a Government strategy to increase access to University education across the Country, the dream to convert the Polytechnic to a University College was realized on 23rd August 2007, through a Legal Notice No. 160, when The Mombasa Polytechnic University College (MPUC) was established. The University College status resulted in many positive changes implemented with great support by the Government of Kenya, including recruitment and development of staff, expansion of infrastructure, provision of facilities and introduction of new academic programmes under the mentorship of Jomo Kenyatta University of Agriculture and Technology. The University college was in October 2012

elevated into a Fully fledged University, Technical University of Mombasa. All these came at a time when the Country had started warming up to the Kenya vision 2030. The University has three well established Faculties namely Faculty of Applied and Health Science, Faculty of Business and Social Studies and Faculty of Engineering and Technology. The Three Faculties have developed and rolled out new market driven degree programs in the three thematic areas while some other new programs shall be rolled out mid-this year. In total, the University College has 86 programs running all the way from Masters to certificate level while 57 new programs are planned to be launched this year.

The University has also continued to offer TVET programs alongside the other programs as provided in the Legal Order. As a result of demand for TUM programs, the student population has tremendously grown over the years, attracting both genders in the three thematic areas. The student statistics currently stands at 7,391, composed of 1,916 females and 5,475 males, spread across all the programs. The University also recognizes the importance of human capital in driving the vision of the institution. A number of human resource management policies have been developed to guard against loss in human capital while also attracting the best capital in the region. To this effect, the University boasts of 210 teaching staff and 437 administrative staff, giving a total of 647. This is projected to grow to 782 teaching staff and 700 administrative staff by the year 2018.

Extending the knowledge and skills of its employees is one of the University's key commitments. Ensuing from this quest, TUM has modelled itself as a "learning organization," that continually aims at improving the provision of learning opportunities to its employees. To this end, the University averagely spends kshs 27.5 million annually on staff development. Currently 148 members of staff have are on sponsorship, taking various programs both locally and internationally. Since elevation into a fully-fledged University, TUM has recorded tremendous all round growth, making her on one of the fastest growing University Colleges in Kenya. To sustain the growth and reposition as a world class university of Engineering, Science and Technology, TUM has continued to develop policy instruments, infrastructure and human resources that are dynamic and responsive to the Country needs. Also the University has signed collaborative agreements with leading international institutions of higher learning to partner in research, training and technology transfer. In line with government policy to increase access to University Education, the University College has opened two strategic satellite Campuses in Kwale and Lamu County. Plans are underway to open a new Campus in Kilifi County. These Campuses have made it convenient for deserving students to access TUM diploma and certificate programs without necessarily coming to the main Campus. The transition to the Technical University of Mombasa is therefore timely as the Country moves forward in addressing the social pillars of the Kenya vision 2030.

Purpose of the Paper:

The paper seeks to examine the determinants of working capital management requirements at Technical University of Mombasa.

2. LITERATURE REVIEW

Theories of Working Capital:

There are various theories that support working capital management. They include quantity theory of money, Keynesian theory of money and the modern quantity theory. The quantity theory of money purports that money is held for purposes of making payments for current transactions only. The concept began in the 16th Century. It was revised by Irvin Fisher in 1911. Fisher explained the theory in terms of the equation, $MV = PT$. Where M represented the nominal stock of money in circulation (money supply), V the speed of transactions of circulation of money, that is, the average number of times the given quantity of money changes hands in transactions, P being the average price of all transactions and T is the volume of transactions that take place during the duration. MV and PT measure the total value of transactions and are thus expected to be identical. The equation thus informs us that the total amount of money handed over in transactions equal to the value of what is sold. It is built on the principle of "equation of exchange". The theory thus puts forward the argument that there is a direct relationship between the quantity of money in an economy and the level prices of goods and services sold. Accordingly, if the amount of money in an economy doubles, price levels also double causing inflation.

Keynesian identified the three reasons for holding money as speculative motive, precautionary motive and transaction motive. (Keynes, 1936). The speculative motive for holding money aims at taking advantage of temporary opportunities such as sudden drop in the price of raw material. The precautionary motive for holding money is to maintain a safety cushion or buffer to meet unexpected cash needs. The more predictable the inflows and outflows of cash for a firm, the

less cash that needs to be held for precautionary needs. The transaction motive for holding cash is to enable the firm to meet payments such as purchases, wages, taxes and dividends arising in the ordinary course of business (Vanhorne and Wachowicz, 2008).

Milton Friedman restated the quantity theory of money in 1956 as a theory of demand for money and this modern theory has become the basis of news put forward by monetarists (Copeland, et al, 2005). Friedman restated that the velocity of money means how many transactions have to be carried out at a given level of GDP, given total money in circulation. If the stock of money is low relative to income, the money in circulation must support a larger number of transactions and therefore must move faster. In this theory, money is seen as one of the many ways in which wealth can be held along with all kinds of financial asset, consumer durables, property and human wealth.

Working Capital Policies:

There are a number of working capital policies that firms can employ either in isolation or combination. These are the conservative approach, the aggressive approach, and the moderate approach. The conservative approach is where permanent capital is used to finance permanent assets requirement and also to meet current assets demand. In view of conservative approach to working capital management, the company will keep a large quantity of current assets in relation to the total assets of the company. The policy increases the net working capital with the firm having fewer funds to invest in other areas. This consequently reduces the profitability of the firm.

In aggressive approach, the company finances all its fixed term assets with long term capital. Part of its permanent current assets is financed with short term credit (Van Horne, 1980). The company holds a relatively small portion of its total assets in the form of current assets. Thus the working capital is significantly reduced to yield higher profitability at a higher risk. In moderate approach, the strategy minimizes the risk of the company not being able to pay off its debts as they become due. The company attempts to match the maturity structure of its assets and liabilities. The working capital level is kept at optimum, resulting in moderate profitability with moderate risks (Afza and Nazir 2007).

3. RESEARCH METHODOLOGY

The paper takes on a desk review approach to undertake the analysis. The focus of the study in terms of the concept is determinants of working capital. A review is undertaken in this regard to examine the factors. The context is the Technical University of Mombasa. Content analysis is therefore applied to meet the objectives of this paper.

4. RESULTS AND FINDINGS

Size of Business:

Working capital requirement of a firm is directly influenced by the size of its business operation. Big business organizations require more working capital than the small business organization. Therefore, the size of organization is one of the major determinants of working capital. Thus, TUM may require more working capital given its large size.

Nature of Business:

Working capital requirement depends upon the nature of business carried by the firm. Normally, manufacturing industries and trading organizations need more working capital than in the service business organizations. A service sector does not require any amount of stock of goods. In service enterprises, there are less credit transactions. But in the manufacturing or trading firm, credit sales and advance related transactions are in large amount. So, they need more working capital. In this regard, TUM is a service firm and therefore given its nature of business will require less working capital to operate as compared to a manufacturing firm.

Credit Period:

Credit period allowed to customers is also one of the major factors which influence the requirement of working capital. Longer credit period requires more investment in debtors and hence more working capital is needed. But, the firm which allows less credit period to customers' needs less working capital. TUM allows less credit period for the students to pay up their fees and therefore requires less working capital.

Seasonal Requirement:

In certain business, raw material is not available throughout the year. Such business organizations have to buy raw material in bulk during the season to ensure an uninterrupted flow and process them during the entire year. Thus, a huge

amount is blocked in the form of raw material inventories which gives rise to more working capital requirements. Enrolment of students happens at specific points of time throughout the year at TUM. Further, students are available in the school throughout the year. Thus, TUM may require less working capital in this regard.

Potential Growth or Expansion of Business:

If the business is to be extended in future, more working capital is required. More amount of working capital is required to meet the expansion need of business. TUM seeks to expand and enroll more students in various courses and also have campuses in other areas. Thus in this regard, it may require more working capital.

Changes in Price Level:

Change in price level also affects the working capital requirements. Generally, the rise in price will require the firm to maintain large amount of working capital as more funds will be required to maintain the sale level of current assets. Fees charged by the school do not fluctuate much but those of the purchases do because of inflation and other factors. In order to maintain smooth running of operations in the school, the university will need more working capital.

Access to Money Market:

If a firm has good access to capital market, it can raise loan from bank and financial institutions. It results in minimization of need of working capital. TUM can access loans from commercial banks in Kenya. In this regard therefore it requires less working capital.

Working Capital Cycle:

When the working capital cycle of a firm is long, it will require larger amount of working capital. But, if working capital cycle is short, it will need less working capital. The working capital cycle of TUM can be regarded as a short one and therefore requires less working capital.

Operating Efficiency:

The operating efficiency of a firm also affects the firm's need of working capital. The operating efficiency of the firm results in optimum utilization of assets. The optimum utilization of assets in turn results in more fund release for working capital. At TUM, it can be assumed that their level of operational efficiency is very high. In this regard therefore, TUM requires less working capital to operate.

5. CONCLUSION

This paper has discussed the concept of working capital, the theories, policies and models used in working capital management as well as the main determinants of working capital requirements of Technical University of Mombasa. As chapter 3 outlines, TUM's working capital requirements is affected by a number of factors such as its size, nature of business, credit period, seasonality, potential growth, changes in price levels, access to money markets, working capital cycle and the efficiency of operations.

This paper relied on desk review methodology to examine the determinants of working capital cycle for TUM. Thus, it is recommended that an empirical survey be performed to examine the determinants of working capital requirements by testing these variables applied in the present paper. Further, a case study methodology should be dropped in favour of a wider survey that covers several other institutions.

REFERENCES

- [1] Brigham and Houston (2007) "Fundamentals of Financial Management," 10th Edition.
- [2] Cooper D.R and Schindler P.S "Business Research Methods," 11th Edition, Mc Grawhill Publishers, New York.
- [3] Copeland T.E and Weston F.J (1988) Foundations of Financial Management, 6th Edition, Von Hoffman Press, London corporations and changes in the business cycle – unpublished research presented at Mid- South Academy of Economics and Finance
- [4] Eljelly, A. M. A. (2004). Liquidity-Profitability Tradeoff: An Empirical Investigation in an Emerging Market. International Journal of Commerce and Management, 14(2), 48-61.

- [5] Filbeck G and T Krueger (2005) “Industry Related Differences in Working Capital Management”. Mid American Journal of Business 20(2) pp 11-18
- [6] Ghosh, S.K and Maji, S.G. (2003), “Working Capital Management Efficiency: A Study on The Indian Cement Industry,” The Institute of cost and Works Accountants of India <http://gulliver.trb.org> publications)
- [7] Gitman J.L (1997) “Principles of Managerial Finance” 8th Edition, Addison – Wesley
- [8] Lamberson M (1992) The relationship between changes in working capital position of large management decision vol 34 no.2 page 59 -63
- [9] Narendre, V., Menon, S., & Shwetha, V. (2009). Factors Determining Working Capital Management in Cement Industry. South Asian Journal of Management, 15(4), 64-78.
- [10] Nitin J. Untwal (2011), “An analysis of working capital management of Indin Tools Ltd” Indian Journal of Commerce & Management Studies ISSN – 2229-5674.
- [11] Padachi K. (2006), “Trends in working Capital Management and its Impact on Firms’ Performance: An analysis of Mauritian Small Manufacturing Firms”, Journal of International Review of Business Research Papers, Vol.2 No. 2 PP. 45-58.
- [12] Pandey J.M (2010) Financial Management, 10th Edition, Vikas Publishing House, New Delhi
- [13] Ranjith, B. A. (2008). The Impact of Firms’ Capital Expenditure on Working Capital Management: An Empirical Study across Industries in Thailand. International Management View, 4(1), 11-24.
- [14] Ross S.A, Westerfield R.W and Jordan B.D (2010) Fundamentals Of Corporate Finance, 9th Edition, McGraw – Hill / Irwin, New York
- [15] Soenen L.A (1993), “ Cash Conversion Cycle and Corporate Profitability” Journal of Cash Management, Vol. 13 No 4 pp 53-58
- [16] Vanhorne, J.C and Wachowicz, J.M (2004) “Fundamentals of Financial Management, 12th Edition, Prentice Hall Publishers, New York.