



Working Capital Management versus Capital Expenditure Management: An Empirical Study

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Abstract

The purpose of this research is to investigate the impact of firms' capital expenditure on their working capital management. Net Liquidity Balance and Working Capital Requirement for determination of working capital requirement and developed multiple regression models. The empirical research found that organisation's capital expenditure has a significant impact on working capital management. The study also found that the firms' operating cash flow, which was recognized as a control variable, has a significant relationship with working capital management. Capital forecasting in a downturn environment where change is rapid. Incorporating dynamic forecasting to measure the impact of key uncertainties and risks on the portfolio of projects is crucial. The findings increase the knowledge base of working capital management and will help companies manage working capital efficiently in growing conditions associated with capital expenditure.

[Keywords] Capital expenditure; working capital; firm

Background

Working capital is a way for accountants, investors and managers to view the short-term health of a company. Working capital equals current assets minus current liabilities. Current accounts are accounts that the company collects or are due in the next year. Making a capital expenditure will have several effects on the company's working capital, depending on the transaction. However, in certain cases, there may be no impact; it is important to understand why corporate finance basically deals with three decisions:



- A) Capital structure decisions,
- B) Capital budgeting decisions, and
- C) Working capital management decisions.

Working capital management is a very important component of corporate finance since it affects the profitability and liquidity of a company. It deals with current assets and current liabilities.

Working capital management is recognized as an important concern of the financial manager due to many reasons. For one thing, a typical manufacturing firm's current assets account for over half of its total assets. For a distribution company, they account for even more. The maintenance of excessive levels of current assets can easily result in a substandard return on a firm's investment.

However, firms with inadequate levels of current assets may incur shortages and have difficulties in smoothly maintaining day-to-day operations. Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on one hand and avoids excessive investment in these assets on the other hand.

Capital forecasting in a downturn environment where change is rapid. Incorporating dynamic forecasting to measure the impact of key uncertainties and risks on the portfolio of projects is crucial. Quantifying the impact of risks and delays at project and portfolio level. Governance and control over capital expenditures, Portfolio prioritization. Determining the optimal decision making level for capital allocation decision (corporate level vs business unit level vs hybrid model).

Capital expenditures

Whenever we make an expenditure that generates a cash flow benefit for more than one year, this is a capital expenditure. Examples include the purchase of new equipment, expansion of production facilities, buying another company, acquiring new technologies, launching a research & development program, etc., etc., etc. Capital expenditures often involve large cash outlays with major implications on the future values of the company. Additionally, once we commit to making a capital expenditure it is sometimes difficult to back-out.



It has been found that managers spend a considerable time on day-to-day working of capital decisions since current assets are short-lived investments that are continually being converted into other asset types (Rao, 1989). In the case of current liabilities, the firm is responsible for paying obligations mentioned under current liabilities on a timely basis. Liquidity for the on-going firm is reliant, rather, on the operating cash flows generated by the firm's assets. As a result, working capital management of a company is very critical area in the field of financial management (Joshi, 1994). It involves the decisions about the amount and composition of current assets and the financing of these assets.

The decision-making process on the level of different working capital components has become frequent, repetitive, and time-consuming.

Corporations are looking for new ways to stimulate growth, improve financial performance, and reduce risk in today's challenging economic climate. Funds tied up in working capital can be seen as hidden reserves that can be used to fund growth strategies, such as capital expansion. Cash flows locked in stock and receivables can be freed up by understanding the determinants of working capital. Many organizations that have earned profits over the years have shown the efficient management of working capital (WCM).

The successful management of working capital is essential for short-run corporate solvency or the survival of any organization. Especially, efficient WCM will lead a firm to react quickly and appropriately to unanticipated changes in market variables, such as interest rates and raw material prices, and gain competitive advantages over its rivals.

The way of managing working capital efficiently varies from firm to firm since it depends on industry, the nature of the business, business policy, strategy, etc. Thus, it is very important for an organization to understand the way to manage working capital efficiently. Broadly, industry characteristics, firm-specific characteristics, and the financial environment are recognized as determining factors of working capital. However, still, there are firms that are struggling to manage working capital since they don't have a sufficient understanding of the determining factors of working capital. In addition to the growth, leverage, and the size of a company, type, and size of expenditures, such as finance and operating and capital expenditures, have different impacts on working capital.



Portfolio Approach in Capital Budgeting

Portfolio approach to achieve capital efficiency and organisational alignment can yield immediate positive cash-flow results for companies. Typically companies view capital expenditures through a cost and benefits filter that focuses largely on ROI and IRR type measures. Whilst these measures are relevant, companies that do so often do not necessarily link these to the strategy of the company. They also do not prioritise capital expenditures in terms of their effect on strategy and shareholder value. We believe that by using a portfolio approach companies could:

- * Increase returns on invested capital by understanding which projects contribute most to shareholder value and lie on the project efficiency frontier
- * Have a holistic portfolio view of the return of the capital of the entire company
- * Improve the strategic and organizational alignment of projects
- * Make informed decisions on where to invest scarce cash resources.

Research Objectives

Overall objective. The overall objective of this research study is to investigate the impact of capital expenditure on the working capital measured in terms of net liquidity balance and working capital requirement (WCR).

Specific objectives. are to

- * Investigate whether there is a relationship between capital expenditure and the firm's working capital(W.C.).
- * Describe the relationship between the nature of expenditure and the working capital.
- * To investigate the impact of different factors affecting the working capital on net liquidity balance and working capital requirement.
- * Investigate the existing literature on working capital management to highlight the recent trends.
- * Understand the applicability of NLB and WCR as a measure of working capital management.
- * Investigate the relationship between corporate performance and working capital management.



Literature Review

The chief financial officers of most companies spend most of their time and effort on day-to-day working capital management. Still, due to the inability of financial managers to properly plan and control the current assets and current liabilities of their companies, the failure of a large number of businesses can be attributed to the inefficient working capital management. Working capital is the most crucial input and the success or failure of an organization can be rightly attributed to the quality and efficiency in the management of working capital (WC) or net current assets (NCA).

Account receivable management models are used in 56 % of these firms to improve working capital management projects, while, inventory management models were used in 65 % of companies. The management of the working capital, stresses the need for the development of a viable model with the dual finance goals of profitability and liquidity, only such models will assist practicing financial managers in their day-to-day decision-making.

Over the years, many researchers have focused on determining the optimal level of each component of working capital. It was found that the working capital literature is rather limited and that the management of short term resources is not understood too well.

Thus, the consensus in academia seems to recognize the paucity of theory concerning the management of financial resources due to the inherent difficulties in the development of a working capital decision model, while accepting the normative needs for a more critical examination. The tendency of firms with low levels of current ratios to have low levels of current liabilities.

Working Capital Management

Working capital management is the administration of current assets in the name of cash, marketable securities, receivables, and inventories. Working capital management as the regulation, adjustment, and control of the balance of current assets and current liabilities of a firm such that maturing obligations are met, and the fixed assets are properly serviced. In order to manage working capital efficiently, there must exist two elements as necessary components and desirable quantities.



It was demonstrated that good working capital management must ensure an acceptable relationship between the different components of a firm's working capital so as to make an efficient mix, which will guarantee capital adequacy. Thus, working capital management should make sure that the desirable quantities/doses of each component of the working capital are available for management.

However the question is "What determines the necessary components of a firm's working capital and how much of such necessary components can be regarded as adequate or desirable?" The necessary components of an organization's working capital, basically, depend on the type of business and industry. Cash, debtors, receivables, inventories, marketable securities, and redeemable futures can be recognized as the common components of organization's working capital. However, the question is to recognize the factors that determine the adequacy of working capital based on growth, size, operating cash flow, etc. The inability to understand the determining factors and measurement of adequate amounts of working capital will lead an organization to losses and eventually bankruptcy.

Methodology

The purpose of this paper is to contribute to a very important aspect of financial management known as working capital management. The study will show the impact of capital expenditure on firms' working capital management. This chapter of the research deals with the analytical framework of data analysis, which describes the firms and variables included in the study, the distribution patterns of data, and applied statistical techniques in investigating the relationship between working capital management and capital expenditure.

Data Collection

Since the study is based on financial data, the main source of data was financial statements, such as income statements, balance sheets, and cash flow statements of listed companies for the period from 2009 to 2014. The reason for restricting the time period to six years was that the latest data for the study was available for these years. In addition, annual reports of companies have been used in order to understand the company back ground and industry.



Sample Selection

The study uses data of listed companies in the stock exchange. Companies with missing data are excluded from the study. The study also excludes the financial and securities sector companies, as their financial characteristics and use of leverage are substantially different from other companies.

Variables

In addition to identifying capital expenditure, the study undertakes the issue of identifying all factors that affect the working capital management. Most of the determinants identified in the investigation have been taken from the existing literature on working capital management.

The study takes into account of all the variables discussed below. Variables, which include dependent, independent, and control variables, have been used to investigate the test hypothesis.

Independent Variables

Capital expenditure (CAPEX) is identified as one of the independent variables in the investigation and includes expenditures incurred by firms for acquisition and upgrading physical assets, such as land, buildings, machinery, vehicles, and equipments. Capital expenditures are added to assets account and depreciated against profits over their economic life. Capital expenditure is incurred by a company when buying new, fixed assets or in adding value to existing assets to increase their economic lives. Capital expenditure includes buying the value of assets, carriage inwards, insurance, legal costs, and all costs needed for acquiring assets ready for use.

Managers pay careful attention to capital expenditure decisions, since they are very costly and irreversible. Operating expenditure (OPEX) is the cost of ongoing operations, product or system. Unlike CAPEX, firms meet OPEX continuously. Operating expenditures are written off against profit for the period. They are Revenue expenditure (REVEX) which includes salaries, wages and facilities expenses, such as rent, rates, electricity, etc. Finance expenditure (FIEX) is cost incurred on debt capital. Interest incurred on debentures, bank loan and other long term liabilities are recognized as finance expenditures.



Dependent Variables

NLB = (cash and cash equivalents + short-term investment) - (short-term debt + commercial paper payable + long-term debt a year term). These are considerations of the financial decisions of a company, regardless of the operation cycle. Thus, it is called as net liquid balance.

WCR = (accounts receivable + inventories) - (accounts payable + accrued expenses + other payable), which relate to the working cycle and are called working capital requirements.

Control Variables

In addition, firms' operating cash flow (OPCASH), extracted cash flow statement, growth (GRO) of the firm measured by sales, leverage measured by total long-term debt capital and divided by equity (D/E). All the above variables have relationships that affect working capital management. These relationships might vary over variables, companies and industries based on business strategy, economic environment, and financial environment.

Hypotheses Development

Working capital management is traditionally rated by current ratio, quick ratio, and net working capital.

According to Shulman and Cox (1985), these traditional ratios don't consider the going concern of the company and net working capital does not measure the correct value of liquidity. They classify net working capital into working capital requirement (WCR) and net liquidity balance (NLB) in order to predict the financial crisis of a company. WCR is measured in order to evaluate the management of working capital, and NLB is considered with the capability of raising and allocating capital respectively.

NLB is better than traditional indicators in terms of predicting crisis and liquidity of a company.

The basic purpose of this study on working capital management to evaluate the impact of capital expenditure on working capital. Thus, this study will categorize expenditure of a firm into three types:

- 1) Operating expenditure,
- 2) Capital (investment) expenditure, and



3) Finance expenditure.

However, except capital expenditure, operating and finance expenditures will be considered on accrual basis, not on the cash basis, because incurred expenditure will determine working capital management of the company.

When a company has growth opportunities, it needs to acquire fixed assets (pay capital expenditure) relevant to future growth plans. Thus, incurred or expected capital expenditure is positively correlated with NLB. With growth opportunity, a company can increase the holding cash, since it manages working capital efficiently. Under such circumstances, terms to pay operation-related liabilities are lengthened and operation-related receivables can be accelerated in collection, causing less demand on working capital.

Expected capital expenditure is negatively related to WCR, and firms with a higher growth rate pay more attention on the management of capital expenditure.

Hypotheses A- Capital expenditure is positively related to NLB

Hypotheses B- Capital expenditure is negatively related to WCR

Model Specification

This study uses panel data regression analysis of cross-sectional in order to test the hypothesis.

A use the pooled regression type of panel data analysis. The pooled regression, which is also called the constant coefficients model, is one in which both intercepts and slopes are constant, where the cross section from a data and time series data are pooled together in a single column, assuming that there are no significant cross section or temporal effects. The general forms of our models are: **thopportunitiesure**

se NLB Decrease in WCR

$$H1a= NLB_{it} = \beta_0 + \beta_1 X + \beta_2 (1)$$

$$H1b= WCR_{it} = \beta_0 + \beta_1 X + \beta_2 (2)$$

WCR: working capital requirement of firm I at time t; i = 1, 2,.....no. of firms

NLB it: net liquidity balance of firm i at time t; i = 1, 2,.....no. of firms



¥0: the intercept of equation

¥i: coefficients of X it variables

X it: the different independent variables for working capital management of firm i at time t

t: time = 1, 2,.....,6 years.

¥: the error term

Specifically, when I convert the above general least squares model into my specified

$$NLBi = ¥ OPEXi + ¥ FIEXi + ¥ CAEXi + ¥ M/Bi + ¥ Gti + ¥ D/Ei + ¥ OCASH + ¥ (3)$$

$$WCRi = ¥ OPEXi + ¥ FIEXi + ¥ CAEXi + ¥ M/Bi + ¥ Gti + ¥ D/Ei + ¥ OCASH + ¥ (4)$$

Where:

NLB = (cash & cash equivalents + short term investments) – (short term debt + commercial paper payable + Long term debt year term)

WCR = (accounts receivable + inventories) – (accounts payable + other payable).

WCR equals net working capital - NLB.

¥ = coefficient of regression,

OPEX = operating expenditure

FIEX = financial expenditure

CAEX= capital expenditure

M/B = market to book value ratio

D/E = total debt to total assets

Gt = sales growth

OCASH = operating cash flow in firm

¥ = the error term

These findings are consistent with hypothesis H1b.

Operating expenditure and interest expenditure also have a positive significant relationship with working capital requirement.

Conclusions and Recommendations

1) Working capital management attracts less attention from management than capital budget and capital structure in financial management in the ordinary course of business.



- 2) Working capital management relates to the findings of sources of short term finance and investments in short term assets.
- 3) Working capital management deals with profitability and the risk of the company.
 - 1) Inefficient working capital management results in over investment in working capital and reduces the profitability of the firm. On the other hand, inefficient management of working capital leads to an insufficient amount of working capital and results in financial difficulty, putting the company at risk.
 - 2) The optimal level of working capital, which is a trade off between risk and profitability, can be affected by both internal organizational characteristics and various outside factors.
 - 3) Existing literature has paid little attention to many factors that determine the working capital.
 - 4) This research investigated some of the factors such as capital expenditure, operating expenditure, finance expenditure, leverage, performance and operating cash flow.
 - 5) This research paper uses NLB and WCR as proxies for working capital in order to assess working capital management with capital expenditure and other influencing factors.
 - 6) Empirical results show that capital expenditure has a significant effect on working capital management. This finding will help a company's management manage working capital efficiently.
 - 7) The findings can be used as a benchmark for managing working capital and evaluating performance. Through this paper it was able to find out that operating cash flow has a significant impact on a company's working capital management, consistent with conclusions in previous research/literature.
 - 8) By conducting the same study on each business sector separately, managers can understand specific behavior of a company's working capital in relationship with capital expenditure.
 - 9) Since the model is a general model, it might not be able to be applied or might not give the same findings in specific business sectors. Moreover, further research can be conducted on the same topic in different countries.
 - 10) Working capital management policies can be compared between developing and developed countries in order to determine the correct management policies.



References

- Harris, A. (2005). Working capital management: difficult but rewarding. *Financial Executive*, 21(4),52.
- Eljelly, A. (2004). Liquidity-profitability tradeoff: an empirical investigation in an emerging market. *International Journal of Commerce & Management*, 14(2), 48 – 61.
- Emery, G. W. (1987). An optimal financial response to variable demand. *Journal of Financial and Quantitative Analysis*, 22(2), 209-225.
- Horrigan, J. O. (1965). Some empirical base of financial ratios analysis. *The Accounting Review*, July, 558-568.
- Gentry, J.A., Mehta, D.R., & Bhattacharyya, S.K., Cobbaut, R., & Scaringella, Jean-Louis. (1979). An international study of management perceptions of the working capital process. *Journal of International Business Studies*, 10 (1), 28-38.
- Kargar, J., & Blumenthal, R. A. (1994). Leverage impact on working capital in small business. *TMA Journal*, 14(6), 46-53.
- Kim, C. S., Mauer, D. C., & Sherman, A. E. (1998). The determinants of corporate liquidity: theory and evidence. *Journal of Financial and Quantitative Analysis*, 33(3), 335-359.
- Osioma, B. C. (1997,). Sources and management of working capital. *Journal of Management Sciences*, Awka: Vol 2. January.
- Petersen, M.A., & Rajan, R.G. (1997). Trade credit: theory and evidence. *Review of Financial Studies*, 10(3), 661-691.
- Rao, R. K. S. (1989). *Fundamentals of Financial Management*. (3rd Ed). Macmillan publishers.
- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2005). *Corporate finance*. (7th0, International edition).
Boston: McGraw-Hill.
- Smith, K. V. (1973). State of the art of working capital management. *Financial Management*, Autumn, 50-55.
- Shin, H.H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education*, 8(2), 37-45.
- Shulman, J. M., & Cox, R. A. K. (1985). An integrative approach to working capital management. *Journal of Cash Management*, 5(6), 64-68.
- Van Horne, J. C. (1977). *Financial management and policy*. Englewood Cliffs: Prentice Hall International.