



# **Cash Flow Management Strategies and Financial Performance of the Construction and Allied Companies on the Nairobi Securities Exchange, Kenya**

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## **ABSTRACT**

Cash flow management is central to survival and growth of any enterprise. It ensures that a firm is able to meet its obligations in the near and long term. However firm in the construction and allied sectors at Nairobi Securities Exchange have experience have experienced serious financial difficulties and this has led one of them being put under statutory management pending liquidation. This is despite their strong performance in the later years of 1990's and early 2000's as reflected in high share prices and high dividend payout ratios. This has however changed as all of them have a decline in share value over last ten years and decreased profitability. The decreased profitability has negatively affected dividend pay out to shareholders. The purpose of the study is to examine the effect cash flow management strategies on financial performance of construction and allied companies listed in the Nairobi Security Exchange. There were five companies quoted under the construction and allied sector of the Nairobi Securities Exchange by the end of 2022. The study examined how liquidity, financing structure, investment activities impact on the financial performance of a firm because the small population, the study will rely on census data. The study relied on secondary data gathered mostly from these companies' publicly available financial records. The research design used was explanatory. The researcher utilized a multiple regression equation to examine the relationship between variables in the study and estimate the models for the inquiry. The research found that liquidity ratio had a positive effect of return on assets. The effect of liquidity ratio on return on assets was significant at 5% level. Investing ratio was found to have a positive effect on return on assets. The effect was significant at 5% level. Financing ratio was found to have a positive influence on return on assets. The effect was significant at 5% level. The research concluded that liquidity management significantly improved financial performance of construction and allied companies listed at Nairobi Securities Exchange. Further it was concluded that investing activities had resulted in significant increase in financial performance. Lastly, it was concluded that financing activities though expected to increase financial performance of construction and allied companies the increase would not be significant. It was recommended that managers of construction and allied companies should manage and increase the liquidity level of the companies as this would result in improvement in financial performance. Also they should increase investment in productive assets so as to increase the financial performance of their companies.

**Keywords:** *Cash flow, Financing Structure, Liquidity, Financial Performance, Cash flow Management*

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## **1.0 Introduction**

Cash flow management strategies can be derived through ratio analysis. Ratios of financial data are employed in the processes of analysing, understanding, and interpreting the financial statements of a business, as well as in the processes of assessing and monitoring the performance of a firm over a period. According to Feng and Wang (2000), the ratios provide an indicator on sections of financial statements that demand more research to assess the company's present and future financial performance. Many financial analysts make use of the financial ratios as a tool in the process of making choices about the economy, such as those on planning, control, investment, and the assessment of performance. Brigham & Ehrhardt, (2010) indicated that ration analysis helps in evaluating the performance of an organization in order to determine the strong and weak points and from the analysis appropriate corrective actions are derived and implemented.

A firm produces cash flow on daily basis from operations. One may use it to determine whether or not a firm has enough positive cash flow to sustain and expand its operations. Investing and financing operations are two common sources of cash flow. Cash flow from investing, refer to cash inflow or outflow of the business as a result of buying or selling long-term assets and investments. The flow of money between a company's owners, investors, and creditors is known as financing cash flow. Previous studies done in the area have confirmed a positive correlation between cash flow and firm performance Hau (2017).

The optimal cash levels for a firm is dependent on investment policies, dividend requirements, and cash flow needs, working capital requirements and capital structure, (Jagongo & Makori, 2013). Cash management collects and manages a company's operational, investment and financial. Given importance that cash has in business entities, it is necessary to manage it in the most prudent way that will maximize the benefits to the organization. Cash is used in settlement of financial obligations and to enable continue operations of the enterprise. In addition to being utilized as operating capital, it

is invested in fixed assets like buildings and machinery. The surplus cash after payment of all relevant operating and statutory expenses is used for rewarding the capital owners in form dividends.

The financial performance of a company benefits from little cash investment, but the company faces dangers associated with illiquidity as a result (Riri, 2018). Liquidity levels will indicate business capacity to pay for its current and future financial obligations when they come due. This is usually assessed through liquidity measures which include current ratio and acid test ratio, Researchers Mule & Mukras (2015) established that free cash flows was strongly correlated to financial performance strong correlation of free cash flows and financial performance of companies. This conclusion suggests that liquidity risks may impact financial results. The financial structure of a business firm will show the contribution made by various stakeholders in funding the company's operations and infrastructure. Short dated debt instruments affected negatively financial performance of a corporation is largely negatively affected by short term borrowing (Kroes & Manikas, 2014). Return on assets, an indicator of profitability, suffers when the short-term debt ratio is high (Hovakimian, Opler & Titman, 2001). The financing structure is assessed by use of ratios that compare the non-owner's contribution of the total business funding to the owners or shareholders' contribution.

Investors, creditors, suppliers, and consumers all have an interest in predicting a company's impending collapse or bankruptcy. Businesses are unable to stay longer in the marketplace for reasons which include bankruptcy, liquidation or decisions made by their controlling entities. The exit of a business from the market for whatever reason would negatively impact on employees, banks and creditors, stockholders, community and governments. A single business failure can cause significant distress to the stakeholders and therefore development of failure prediction is highly important to be used in forewarning the stakeholders, (Altman & Hotchkiss, 2010).

The performance of the construction industry is a primary indicator of the growth of an economy. However, over the past few years, there has been mixed performance of the firms listed at NSE construction and allied sector and these being the only companies whose financial performance information is available in the public domain it is necessary to find out the factors that may be leading to the reported performance, (Nwakaego & Ifunanya, 2015). East Africa Portland Cement Limited, Athi River Mining Cement Limited and East Africa Cables have been going through financial distress in the recent years with Athi River Mining resulting to appointment of a statutory manager. The study is focusing on a period of the immediate past ten years mainly because it is the period when the mixed results were observed in the sector, (Kyenze, 2014).

### ***1.1 Statement of the Problem***

Investors in the construction and associated industry businesses listed on the Nairobi Securities Exchange have seen a consistent fall in profitability and decline in dividends over the previous decade even though the general construction sector has experienced growth as there has been increased construction activities for public as well as private sector. In the year 2012 and 2013 four out of the five construction and allied sector companies reported profits and only one of them reported a loss. In 2014, three out of the five reported profits while two of them reported losses. From 2015 to 2020, only two of the companies have reported profit while all others have reported losses. Notably even those that reported profits have experienced consistent decline in the profit figure and margins. In August 2018, one of the companies reporting losses was placed under an administrator to either liquidate or resuscitate it. In 2019, the construction industry grew by 6.4 percent, compared to 6.9 percent in 2018. (Economic Survey, 2020). Based on their yearly financial statements, the profit after tax of the sector listed firms was KES 6.3 billion in 2010, KES 7.9 billion in 2011, KES 6.3 billion in 2012, KES 7.4 billion in 2013, KES 5.3 billion in 2014, KES 8.8 billion in 2015, and KES 8.0 billion in 2016.

According to Rajkumar (2014), many companies reported negative performance due to cash flow problems due to poor management which forces companies wind up. Due to their current situation, they have found it challenging to retain supplier relationships and reliable supply throughout the course of their operations. Cash flow problems could result from the cash management activities undertaken by the firms and the activities are directly related to the cash management strategies. Construction is among the key sectors in national socio-economic development in establishing the infrastructure and proactive facilities (Yusoff, 2017). The construction industry contributes a significant share of the national economy and it is essential in developing and sustaining a business climate that encourages investment, development, and job creation.

Several studies have been done to examine the relationship of factors such as liquidity, capital structure, cash flows and the financial performance of companies. However, there has been limited work done covering the combined influence of liquidity, cash flows, investment and financing on the financial performance in the construction and allied sector (listed or unlisted) in Kenya. There has been a lot of empirical work done on the relationship between the Nairobi Securities Exchange's construction and related sector companies' liquidity, capital structure, investment, and financial performance, each with one dependent variable against the financial performance as a dependent variable. According to Murkor, Muturi and Olouch (2018), the financial performance of construction and associated sector businesses listed on the Nairobi Securities Exchange was influenced by working capital management. Construction and closely related NSE-listed firms' financial performance was shown to be positively affected by liquidity in a research by James (2013), and it was also discovered that the current ratio has a beneficial effect on the financial performance of these companies. Therefore this study seeks to address this gap by analysing the effect of financial ratio companies listed under the construction and allied sector of Nairobi Securities Exchange to their financial performance.

### ***1.2 Objectives of the Study***

To examine the effect of cash flow management strategies on financial performance of construction and allied companies listed in the Nairobi Security Exchange.

The specific objectives of the research were as follows;

- To determine the effect of firm's liquidity management on financial performance of construction and allied companies listed in the Nairobi Security Exchange.
- To establish the effect of financing structure on financial performance of construction and allied companies listed in the Nairobi Security Exchange.
- To examine the effect of investing activities on financial performance of construction and allied companies listed in the Nairobi Security Exchange.

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## 2.0 Literature review

The theoretical framework considered included liquidity preference theory, Baumol inventory model and free cash flow hypothesis. These models explain firms' rationale of holding cash and manner in which cash resources should be managed or utilized.

### Liquidity preference theory

Cash is thought as the most liquid asset, and the liquidity preference theory suggest that short-term investments carry lower rates of interest relative to medium- or long-term investments as investors sacrifice liquidity only for the short term. The theory states that there are three factors that drive the need for liquidity, including transactional incentives that require consumers to have sufficient money to cover basic daily expenses, precautionary motive that require individuals to have liquidity to cover unexpected problem or cost that may arise and that may need some outlay of cash and for speculative motive to benefit from higher yielding opportunities that may yield better returns. Keynes says that the interest rate is a price of borrowing money, so people will rather keep their cash on hand than put it into assets. When the market offers higher interest rates, the investors are expected to surrender their liquidity in exchange for the higher rates but will quickly dispose of the liquid investments for other higher returns yielding investments immediately the interest rates decline (Keynes, 1936).

### Baumol inventory model

A model put forth by Baumol (1952) to assist firms in determining the appropriate amount of cash they should have on hand. The Baumol Inventory model is used here since it is the foundation of economic ordering quantity (EOQ). An approach to handling and storing cash that might be useful to companies in calculating minimal quantities has been suggested in this article. Cash may be regulated in a manner similar to that of the order quantity used in inventory by analysing both the expense of keeping cash and the amounts that are needed. In seeking to reduce the cost of keeping cash, it is important to pay attention to inventory of cash and its carrying cost. Essentially the cost of keeping cash on hand should be comparable to cost associated with converting securities into cash.

### Free cash flow hypothesis

A hypothesis put forth by Jensen and Meckling (1986). Free cash flow is defined as cash remaining after a profitable firm's initiatives have been funded. Free cash flow, according to Thevaruban (2016), net income before depreciation and amortization, minus capital expenditures and non-cash flows, plus the amount borrowed. According to this concept, managers of companies that have strong free cash flows will start to engage in activities that would lower the total value of the firm. Free cash flow should be utilized to fund positive net present value projects in excess of what a company needs for capital expenditure. The managers should put the extra cash flow to greater use, such as improving their quality of life, rather than investing it in activities that could contribute to an increase in profit generating. As a result of the agency cost, having a close look on the behavior of the management in terms of their expenditures may help to improve the management as well as internal expenditures that would be important to the growth and development of the company, which would result in the generation of the cash flows, which in the same sense may be perceived by the shareholders to be expensive.

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## 3.0 Research methodology

The research used a quantitative research design mainly because the variables were measured through use of numbers and the analysis was greatly use statistical methods with the output presented in graphical or tabular format. The independent and dependent variables were studied using causal research to determine the cause-and-effect connection. The target population consisted of all the five companies listed under the construction and allied sectors at the Nairobi Securities Exchange. The data was analysed over ten year period from 2011 to 2020. This resulted in fifty five data points. Secondary data was extracted from audited financial statements of the subject companies. Data was analysed descriptive and inferential statistics. Regression analysis was used to examine effect of independent variables on dependent variable.

The following is the panel regression model that was used;

$$FP = B_0 + B_1LRit + B_2FRit + B_3IRit + e$$

Where:

FP=Financial performance which was measured by return on assets (  $ROA_{it}$  = Return on Assets (i at time t; t = (1, 2...n) firms

$B_i$  = Regression constant  $i=0,1,2,3$ .

LR = Liquidity ratio

FR = Financing ratio

IR = Investment Ratio

e = Error term

Liquidity ratio was defined as current assets divided by current liabilities. Financing ratio was defined as total liabilities divided by total assets. Investment ratio was operationalized as the natural logarithm of cash flow from investing activities divided by natural logarithm of total assets.

#### 4.0 Data analysis

Data was summarized meaningfully using descriptive statistics. The statistics provided the mean value, standard deviation and the range in form the minimum and maximum value for each variable.

**Table1-Descriptive statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Return on assets	50	-.0787	.1083	.026231	.0645942
Liquidity ratio	50	.2885	2.0847	1.064739	.5381195
Investing ratio	50	.4388	.9036	.731052	.1112934
Financing ratio	50	.2949	.7540	.550100	.1653560
Valid N (listwise)	50				

Source: Research data (2023)

Summary of descriptive statistics was provided in table 1. The mean return on assets for the sample was 0.026 with a standard deviation of 0.0645. Mean liquidity ratio was obtained as 1.064 having a standard deviation of 0.538. Investing ratio returned mean of 0.731 with a standard deviation 0.111. Financing ratio mean was 0.550 with standard deviation 0.165.

#### 4.1 Correlation Analysis

To measure association between the variables was indicated using Pearson correlation Significant correlation were flagged at 5% level .correlation matrix below presented that result.

**Table2 Correlation matrix**

		Return on assets	Liquidity ratio	Investing ratio	Financing ratio
Return on assets	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	50			
Liquidity ratio	Pearson Correlation	.535**	1		
	Sig. (2-tailed)	.000			
	N	50	50		
Investing ratio	Pearson Correlation	.421**	-.152	1	
	Sig. (2-tailed)	.014	.291		
	N	50	50	50	
Financing ratio	Pearson Correlation	.278	-.149	.271	1
	Sig. (2-tailed)	.056	.001	.057	
	N	50	50	50	50

Source: Research data (2023)

Table 2 provided result of correlation analysis. ROA and liquidity ratio returned correlation coefficient 0.535 having p-value 0.000. ROA and liquidity had moderate positive correlation. The correlation being significant as p-value was less than 0.05. Correlation coefficient between ROA and investing ratio was reported 0.421 with p-value 0.014. ROA and investing ratio were moderately positively correlated and the correlation was significant as  $0.014 < 0.05$ . ROA and financing ratio showed correlation 0.278 which had p-value of 0.05. ROA and financing ratio had weak positive association. This correlation was insignificant with p-value 0.056 being higher than 0.05.

#### 4.2 Regression Analysis

The dependent variable, liquidity ratio, investing ratio and financing ratio were regressed in return on assets. The result of this analysis is presented below. Adjusted R-square was used to indicate explanatory power of the regressors. Significance of regression was examined using ANOVA. Regression coefficients were estimated using the ordinary least squares method with standards errors corrected for heteroscedasticity. Significance of regression coefficients was determined using 5% level of significance.

**Table 3-Model summary**

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.549 <sup>a</sup>	.302	.256	.0557015	1.546

Source: Research data (2023)

Table 3 provided statistics from the regression analysis. Adjusted R<sup>2</sup> was determined as 0.256. This indicated that variation in the explanatory variables explained 25.6% of variations assets return. The independent variable used in the analysis had low explanatory power.

**Table 4-Analysis of variance**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.062	3	.021	6.631	.001 <sup>b</sup>
Residual	.143	46	.003		
Total	.204	49			

Source: Research data (2023)

Table 4 provided ANOVA results. In testing assumption no significance of regression F-test was performed. The reported F statistic was 6.631 having p-value 0.001. Because p-value 0.01<0.05, the assumption of no significance was rejected. The regression was thus significant.

**Table 5-Regression coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Robust Std. Error <sup>a</sup>	Beta		
(Constant)	-.053	.023		-2.348	.023
Liquidity ratio	.064	.015	.519	4.173	.000
Investing ratio	.120	.040	.121	2.961	.039
Financing ratio	.027	.049	.078	.558	.580

Source: Research data (2023)

Table 5 provided the intercept term and the regression coefficients for each explanatory variable. The intercept term was -0.053. This term was significant since p-value 0.023<0.05. The coefficient for liquidity ratio was 0.064 with a p-value of 0.000. Liquidity ratio had a positive effect on ROA. The coefficient value of 0.064 indicated that a unit increase in liquidity ratio resulted in 0.064 units increase in ROA holding other factors constant. The effect was significant as 0.000<0.005. Investing ratio had a coefficient of 0.120 and a p-value of 0.039. Investing activity had a positive effect on ROA. A unit increase in investing ratio increased ROA by 0.120 units, ceteris paribus. The effect was significant given that the p-value 0.039<0.05. Financing ratio had a coefficient of 0.027 having p-value of 0.580. This indicated that financing ratio had a positive effect on ROA. A unit increase in financing ratio increased return on investment by 0.027 units all else constant. This effect was insignificant given that the p-value 0.58>0.05.

#### 4.3 Discussion of Findings

It was determined that liquidity ratio had a significantly positive association with financial performance. It also established that liquidity ratio affected ROA positively and significantly for construction and allied companies at NSE. This implied that finding is that increasing the liquidity level of these companies would increase the company's ROA. Firms with higher liquidity levels would be expected to have significantly higher ROA holding other factors constant. These finding concurred with Yameen et al (2019) who also found that businesses higher liquidity among pharmaceutical companies in Bombay Stock exchange had higher ROA. Khaldun and Muda (2014) documented similar finding among companies listed at the Colombo Stock Exchange, noting that liquidity management had beneficial effect on financial performance of manufacturing companies. In Odalo et al (2016) liquidity ratio was indicated to have significant effect in increasing ROA and ROE of agricultural companies listed at NSE. However the result contradict Thachappilly (2009) who found that liquidity management negatively impacted the financial performance of sugar companies in Kenya. Thevaruban (2016) noted that cash ratio was negatively related to ROA for manufacturing companies in Sri-Lanka. Liquidity management has important implications for a firms success as documented in Kegicha et al (2017). However the empirical evidence of this impact remains less clearer. The result evidence presented above arise from different sectors and the differences may reflect difference in industry or sectoral practices.

It was determined that investing ratio in the sector was positively correlated. This correlation was significant at 5% level. ROA was significantly positively influenced by investing ratio. Increasing investment in firms productive assets resulted in significant improvement of financial performance. Firms with more assets would earn a significantly higher ROA. These findings are in line with Eyahuma and Miroga (2020) who documented that firms' investment in long term assets were significantly positive influenced their financial performance. Also Ikonmwoza et al (2018) documented a direct positive relationship on total assets and financial performance companies. The study also determined that financing ratio was positively correlated to ROA of construction and allied companies listed at the NSE. However, the correlation was not significant. Financing ratio positively affected ROA but effect was not significant. Thus increasing the firms total debt in relation to its assets resulted in increase in ROA but the increase was not statistically significant. This concurs with Chesang (2016) who found that long term debt to total assets positively affected financial performance of agricultural companies listed at the NSE but the influence was not significant. The result however contradicts a number of prior studies such as Kithandi (2019), Dey et al (2018) and Abu-Abbas (2017) which documented that leverage negatively affected financial performance.

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## 5.0 Summary of findings

This determined whether liquidity management affected financial performance of construction and allied companies listed in the NSE. Correlation analysis indicated liquidity ratio had a moderate positive correlation with ROA. The correlation was significant at 5% level of significance. Regression analysis showed that liquidity ratio had a positive effect on ROA. The effect of liquidity ratio on ROA was significant at 5% level of significance as p-value  $0.000 < 0.05$ . Secondly, effect of investing of investing activities on financial performance of construction and allied companies at NSE was evaluated. Correlation analysis found that investing was moderately positively correlated to ROA with the correlation being significant at the 5% level. From regression analysis, investing ratio had a positive effect on ROA. As p-value  $0.039 < 0.05$ , effect of investing activity on ROA was significant at 5% level. Additionally, the study established the effect of financing structure on financial performance of construction and allied companies listed in the NSE. From correlation analysis it was established that financing ratio had weak positive correlation to ROA. The correlation was insignificant at 5% level given that p-value  $0.056 > 0.05$ . Regression analysis established that the effect of financing ratio on ROA was positive. However, the effect was insignificant at 5% level as the p-value  $0.580 > 0.05$ . The study also found that variation in liquidity ratio, investing ratio and financing ratio jointly explained 25.6% of variation in ROA as indicated by adjusted coefficient of determination. Also the result of analysis of variance provided explanatory variables had significance in explaining variability in ROA. F-statistic p-value of 0.001 is lower than 0.05 indicating significance.

## 5.2 Conclusions of the study

This study hypothesized that liquidity management did not significantly affect financial performance in construction and allied sector at NSE. Correlation analysis indicated liquidity ratio had significant positive effect on ROA. Also regression analysis showed that liquidity ratio positively influenced ROA. It was concluded that liquidity management in construction and allied sector at NSE influenced financial performance positively and significantly. It was hypothesized that investing activities did not significantly affect financial performance of construction and allied companies at NSE. Correlation analysis pointed to a significant positive correlation between investing ratio and ROA. Also regression analysis indicated significant positive effect of investing ratio on ROA. Consequently, it was concluded that investing activities had a positive and significant effect on financial performance. The last hypothesis was financing activities did not have a significant effect on financial performance. Correlation analysis indicated that financing ratio was positively correlated to ROA but the correlation was not significant. Regression analysis showed that returns on assets were positively affected by financing ratio but the effect was insignificant. The study concluded that financing activity had a positive effect on financial performance but the effect was not significant.

## 5.3 Recommendations of the study

Based on the conclusion that liquidity management significantly positively affected financial performance of construction and allied companies listed at the NSE, it was recommended that corporate managers should actively manage the liquidity levels of their companies. Increasing the company's liquidity level would result in improved financial performance. Since financial performance is of concern to shareholders/investors as well, investors in these sectors should pay attention to the firms' liquidity level in making investment decisions. Firms with higher liquidity would be expected to have better financial performance than those with lower liquidity. Investing activities were shown to result in improvement in financial performance of construction and allied companies listed at the NSE. Consequently, it was recommended that corporate managers should increase the levels of investment in productive assets regularly which is expected to reflect in improved financial performance. Efficient utilization of investment in productive assets will be expected to result in higher financial performance. For investment decision making, investors should analyze the company's investment activities. Companies making regular investment in productive assets are expected to achieve better financial performance. Financing activities showed a positive effect on financial performance but the effect was not significant. This study recommended that focusing on financing activities while may result in improvement in financial performance, the improvement is not expected to be significant. It was recommended that the level of financial leverage was not an important consideration in the effort to improving financial performance of construction and allied firms at the NSE. The level of debt used in financing a company should not influence investment selection by investors considering investing in construction and allied sector of NSE.

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