ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

The Effects of Working Capital Management Approaches on the Financial Performance of Agricultural Companies Listed at the Nairobi Securities Exchange, Kenya

Millicent Lilian Owele[1*] and Joshua Wanjare Makokeyo[2]

1. Kenya Revenue Authority P.O.Box 1970 – 40100 Kisumu, Kenya

2. School of Business, University of Nairobi, P.O.Box 30197 – 00100, Nairobi, Kenya

Manuscript Info

Manuscript History:

Received: 15 November 2014
Final Accepted: 26 December 2014
Published Online: January 2015

Key words:
Financial performance, Working capital management approaches, Nairobi Securities Exchange

Corresponding Author

Millicent Lilian Owele

Abstract

Working capital management approach is one of the most important strategies that company managers consider for effective financial management. This is because a firm's profitability depends on the working capital management approach adopted. This study examined the relationship between working capital management approaches and financial performance of agricultural firms listed in the Kenya's Nairobi Securities Exchange (NSE) using a diagnostic research design. The results showed that each company employed a significantly different working capital management approach (P = 0.002, F = 54.55, df = 6). However, significant effects of the working capital management approach on the company's financial performance was only evident in the Sasini Tea and Coffee Limited Ltd. (F = 21.64, P = 0.002, df = 6). The financial performance estimates between the companies also differed significantly (P = 0.0005, F = 5.96, df = 6) probably due to different proportion of total assets. The Limuru Tea Ltd was the most profitable company (Return on Asset: ROA = 46.48%) while Eagards Ltd. was the least profitable (ROA = 4%). The working capital management approaches were less than 50% in all companies suggesting that the companies used different levels of conservative working capital management approaches. None-listed agricultural companies should be studied to derive more conclusive remarks on the effects of working capital management approaches on agricultural companies in Kenya.

INTRODUCTION

Working capital, which is considered as the life-blood of any business enterprise (Shashi and Sharma, 2005) represents the firm's investments in cash, marketable securities, accounts receivables and inventories less the current liabilities used to finance the current assets (Remamoorthy, 1978). Working capital management is an accounting strategy, which focuses on maintaining efficient levels of components of working capital (Waithaka, 2012). In practice, working capital management approach has become one of the most important issues in organizations where company executives identify the basic working capital drivers and an appropriate level of working capital (Lamberson, 1995). Indeed, companies can minimize risk and improve the overall performance by understanding the role and drivers of working capital management using an appropriate approach (Hall, 2002).

The financial ratios as a part of working capital management have been extensively studied. However, few of them have discussed the specific working capital approaches (Afzar and Nazir, 2009). Companies tend to employ distinctive working capital management approaches in the competitive business environments (Weinraub and Visscher, 1998; Afza and Nazir, 2007). Firms prefer aggressive working capital management approach when it finances all its temporary assets, permanent current assets and some fixed assets with short term debt (Afza and

Nazir, 2009). When faced with minimal risks, an aggressive working capital management approach would be used and the company maintains a minimum level of cash, securities, debtors and stocks. However, if there is little stability, a more conservative policy is preferred (Afzar and Nazir, 2009). The conservative working capital management approach is best when a firm finances all the fixed assets, permanent assets and part of temporary assets with long term debt/equity (Weston, 1975). The working capital management approach adopted by a firm can be determined by use of a ratio of total current liabilities over total assets, where a higher ratio of more than 50 % suggests biasness towards an aggressive policy (Afzar, 2008).

Empirical evidence has indicated mixed results on the risk/return tradeoffs among working capital management approaches. Afza and Nazir (2009) investigated the traditional relationship between working capital management approaches and a firm's profitability and their result contradicted those of Deloof (2003), and Eljelly (2004) as they produced a negative relationship between aggressive working capital policies and profitability. Makori and Jagongo (2013) also reported a negative relationship between profitability and the accounts receivables (AR) collection period and cash conversion cycle (CCC), but a positive relationship between profitability and the inventory conversion period and the payables deferral period. Firms can improve their profitability by reducing their receivables collection period and their inventory conversion period (Deloof, 2003; Mathuva ,2009; Mekonnen, 2011). Velnampy et al. (2013) found that the aggressive working capital investment and financing policies have no impact on profitability measures of Return on Assets (ROA) and Return on Equities (ROE).

The strategic importance of working capital management has ignited many researchers to focus on evaluating the working capital management approaches and profitability relationships in business enterprises all over the world (Uyar, 2009). Regrettably, most studies have focused on developed markets (Peel and Wilson, 1996; Shin and Soenon, 1998; Deloof, 2003) with limited information about developing economies. Indeed, similar investigations could provide useful insights on the emerging capital markets like Kenya. Despite agriculture being the main sector for economy through linkages with manufacturing, distribution and services related sectors in Kenya (Nyangito and Okello, 1998; Were *et al*., 2002), information about the performance of the agricultural companies in the Nairobi securities exchange is scanty (Nurmet, 2011). Previous studies focused on manufacturing firms at the expense of agricultural ones (Makori and Jagongo, 2013; Nzioki *et al*., 2013; Apuoyo, 2010; Wainaina, 2010; Mutungi, 2010; Mathai, 2010). Other studies (Mathuva (2010) and Oloo and Mwangi (2010) generalized the effects of working capital management on companies without mentioning specific sectors. Messah (2011) reported that Kenyan agricultural companies still suffer from basic management challenges such as lack of application fees, unfavorable legal and regulatory framework on listing and lack of confidence in the NSE. This prevents them from meeting the stringent conditions set by the NSE. Indeed the poor listing of agricultural industries in the NSE should attract scientific investigations. This study aimed at determining the relationship between the working capital management approaches and the financial performance of agricultural firms listed in the NSE over a period of five years from 2009 to 2013.

Research methodology

Research design

This study used the diagnostic research design as explained by Kothari (2004) and Nzioki *et al*. (2013). The individuality or uniqueness of each agricultural firm was considered as each firm was expected to employ different working capital management approach. This was determined by analyzing the individual company's regression coefficient. The study targeted all the agricultural companies listed at the NSE since they are public entities operating under strict corporate governance regulations, making their financial and accounting disclosures largely reliable. These include: Eaagads Limited, Kapchorua Tea Company Limited, Kakuzi Limited, Limuru Tea Company Limited, Rea Vipingo Plantations Limited, Sasini Tea and Coffee Limited and Williamson Tea Kenya Limited.

Data collection and analysis

The data was obtained through document analysis of the company's consolidated financial reports of the years ending December: 2009, 2010, 2011, 2012, and 2013. Other data sources included the Nairobi Securities Exchange and annual reports submitted by the said companies to the Capital Markets Authority (CMA). The use of the

secondary data ensured fast and cost effective study. Descriptive statistics, analysis of variance (ANOVA), regression and correlation analysis were used to establish the relationship between the independent variables of working capital management approach ratio (TCL/TA) and the dependent variable; financial performance (ROA). The performance of dependent variable (ROA) and independent variable (TCL/TA) was averaged for the period of five years i.e. 2009-2013. The statistical package for social sciences (SPSS) version 2014 was used for the analysis. The differences were accepted at $\alpha = 0.05$ level of significance. The following regression model was run to estimate the relationship between working capital management approach and the financial performance of the agricultural firms:

$ROA\ i = \alpha + \beta 2\ (TCL/TA\ i) + \varepsilon$
Where: ROA i = Average Return on Assets of Firm i for the period of 2009-2013
TCL/TA i = Average Total Current Liabilities to Total Assets Ratio of Firm i for the period of 2009-2013
α = intercept
ε = error term of the model. The selected variables are shown in table 1.

Results and discussion

The QQ plots of normality tests (Figure 1) showed that the data were normally distributed. The descriptive analysis (mean, standard deviation, minimum and maximum values) of the ROA and TCL/TA are presented in table 2 and 3. Based on the ROA results, Limuru Tea Company Ltd. was the most profitable agricultural company (ROA = 46.48%) while Eagards Ltd. was the least profitable (ROA = 4%). There was significant difference between the companies profitability estimates for the five years (ANOVA: $P = 0.0005$, $F = 5.96$, $df = 6$). This is because the companies have different proportions of total assets, which technically influences how much profit each company makes. Large investment in current assets under certainty would mean low rate of return on assets (ROA) of the firm, as excess investments in current assets will not earn enough return (Deloof, 2003; Raheman and Nasr, 2007). Besides the working capital management approach exercised by each company, other factors such as company size may as well influence the profitability estimates.

Statistically, each company employed a different working capital management approach (ANOVA: $P = 0.002$, $F = 4.55$, $df = 6$). However, the TCL/TA (%) was less than 50 % in all companies suggesting that the companies used different levels of conservative working capital management approaches (Table 2). This could be due to the fact that most agricultural companies use more of long term funds to finance their working capital needs. Indeed, these findings reflect those of Oloo and Mwangi (2014), who observed that conservative financing plans rely heavily on long term financing because firms have less risk of facing the problem of fund shortages. The findings also support the contention that conservative working capital management approach determines the optimal financing strategies for financing working capital needs (Filbeck and Krueger, 2005). A similar study by Weinraub and Visscher (1998) also concluded that industries, including those that deal with similar goods can exercise different levels of the same working capital management approach or have significantly different working capital management approaches altogether. Companies that have adopted conservative policy have a high preference for equity financing especially in funding both their permanent current assets and fixed assets but low preference for long-term debt financing (Oloo and Mwangi, 2014).

However, the results indicated that the management approach for Kapchorua Tea Company Ltd, Reavipingo Plantations Ltd and Williamson Tea Kenya Ltd. companies adopted a less conservative working capital management approach albeit in an insignificant manner ($P > 0.05$). This could be related to the high level of current liabilities as percentage of total assets that the companies have. This observation reflects the sentiments of Afza and Nazir, (2009) who reported that an aggressive working capital management approach may be used for the financing decisions of the firm with high level of current liabilities as percentage of total liabilities. According to Oloo and Mwangi (2014), an aggressive policy is where a firm depends more on short term funds for financing its working capital needs hence the firm maintains a high level of short-term liabilities as a percentage of total assets. Companies with larger capacities to generate internal resources have higher current asset levels due to the lower cost of funds invested in working capital for these Companies generated by great cash flows. It was noted in earlier studies that companies that have a more efficient working capital management strategy registers an increase in operating cash flow (Chiou and Cheng, 2006; Hill et al., 2010; Banos-Cabalaro et al., 2010).

Interestingly, the results indicated that companies that used conservative working capital management approaches were the most profitable while the companies advancing towards aggressive capital management approaches were least profitable (Figure 4). Despite recording the highest profit before tax, Sasini Tea and Coffee Ltd. and Williamson Tea Kenya Ltd. have the largest total assets. This suggests that most assets are idle hence affecting company's profitability. The results indicated that the working capital management approach employed by Sasini Tea and Coffee Ltd had a significant effect on the company's profitability ($F = 21.64$, $P = 0.002$, df = 6) (Table 3). This could be attributed to the large company's total asset estimated at Ksh. 8.8 billion, of which a larger proportion could be idle. Nevertheless, Williamson Tea Kenya Ltd also had a larger total asset (Ksh. 6.1billion), but their working capital management approach did not significantly influence the profitability ($F = 0.57$, $P = 0.505$, df = 6).

The study found a negative relationship between ROA and TCL/TA for Sasini Tea and Coffee Ltd., Rea Vipingo Plantations Ltd and Eaagads Ltd. companies while a positive relationship existed in Williamson Tea Kenya Ltd, Limuru Tea Company, Kapchorua Tea Company Ltd. and Kakuzi Ltd. This observation is partly consistent with other studies (e.g. Deloof, 2003; Raheman and Nasr, 2007; Shin and Soenen, 1998). However, only the relationship in Sasini Tea and Coffee Ltd was statistically significant ($P = 0.002$), suggesting a strong influence ($r^2 = 0.73$) of the working capital management approach on the profitability of the firm. This result suggests that the firm can improve profitability by reducing the number of days accounts receivable as customers take less time to pay back bills and more cash is available to replenish inventory. However, Sasini Tea and Coffee Ltd was the least profit making company for the period of study but this could be due to the huge total assets the company controls. The negative co-efficient of the TCL/TA suggests that the more aggressive the company is (an increase in TCL/TA) is associated with a decline in financial performance.

This study holds that managers for Williamson Tea Kenya Ltd., Limuru Tea Company, Kapchorua Tea Company Ltd. and Kakuzi Ltd. can increase marginally the profitability unit by advancing towards a more aggressive working capital management approach while Sasini Tea and Coffee Ltd, Reavipingo Plantations Ltd and Eegards Ltd. should focus on conservative policies to create value for their shareholders. This finding is consistent with prior research such as Blinder and Maccini (1991). Contrary to findings by Deloof (2003), the negative relationship between management policy and financial performance is consistent with the view that more profitable firms wait longer to pay their bills since they have a greater bargaining power with their suppliers. The summary of regression analysis equation and ANOVA for each company is presented in Table 5.

Conclusion and recommendation

All the agricultural companies currently listed at the NSE exercise different levels of conservative working capital management approach. However, the working capital management approaches adopted by Kapchorua Tea Company Ltd., Reavipingo Plantations Ltd. and Williamson Tea Kenya Ltd companies embraced a less conservative working capital management approach compared to the rest. Nevertheless, it is only in Sasini Tea and Coffee Ltd where the working capital management approach significantly affects the Rate of Return (profitability). Companies that adopted more conservative capital management approaches were the most profitable while the companies advancing towards aggressive capital management approaches were least profitable. The study recommends similar studies for non listed agricultural companies in Kenya to derive a broader conclusion on the effects of WCM approach on agricultural companies in Kenya.

Table 1: Measurement of selected variables

Variables	Method of Computation
WCMA	(TCL/TA) /number of years under study
ROA	(EBIT/ Total assets)/ number of years under study
EBIT	Profit before tax + interest expenses
TA	Current assets + non-current assets

Table 2: Descriptive statistics for TCL/TA (%) for Seven agricultural companies listed at NSE for a Five year period (2009 – 2013): SE = Standard Error

	Williamson	Sasini	ReaVipingo	Limuru	Kapchorua	Kakuzi	Eeagads
Mean	12.98838	8.810826	15.75676	7.044095	19.59777	8.535691	4.002009
SE	1.43795	1.913225	3.087419	3.410598	2.681779	1.367736	1.822743
Minimum	9.205313	4.570507	7.888062	1.775312	11.97333	4.319329	0.790085
Maximum	17.79971	14.30297	25.59138	20.21134	27.59413	11.92069	7.101235
Sum	64.94191	44.05413	78.78379	35.22047	97.98887	42.67846	12.00603

Table 3: Descriptive statistics for ROA (%) for Seven agricultural companies listed in NSE for a Five year period (2009 – 2013): SE = Standard Error

	Williamson	Sasini	Vipingo	Limuru	Kapchorua	Kakuzi	Eeagads
Mean	15.87834	7.769519	15.68137	46.48522	6.87169	15.5122	6.080688
S.E	3.28298	3.259864	5.295092	8.654521	4.670144	2.9466	13.06187
Range	18.79591	17.39721	29.55981	52.63462	26.54653	15.95537	45.24588
Minimum	4.167766	0.019388	1.181343	14.88189	-10.1651	6.899016	-16.6576
Maximum	22.96368	17.41659	30.74115	67.5165	16.38145	22.85438	28.58825

Table 4: Summary of mean variables for the agricultural companies listed at the NSE for 5 years (2009 – 2013)

Variables (Ksh. '000)	Williamson	Sasini	Reavipingo	Limuru	Kapchorua	Kakuzi	Eeagards
Profit before tax	428,363	617,284	340,021	86,748	115,432	551,243	18,145
Finance interest cost	17,529	40,293	5,343	3,600	3,490	6,629	-
Finance interest income	11,793	23,726	-	871	4,104	46,915	-
EBIT	422,645	633,850	345,365	91,219	114,818	508,306	18,146
Total current liabilities	776,363	565,344	313,029	10,078	293,752	269,808	18,203
Total current assets	2,060,599	3,816,866	780,721	104,294	512,599	999,356	73,011
Total noncurrent assets	4,049,336	5,090,548	1,336,057	114,522	923,778	2,442,044	402,936
Total assets	6,106,935	8,838,016	2,116,778	218,816	1,436,377	3,441,400	475,946
ROA (%)	15.87±3.28	7.76±3.26	15.68±5.29	46.48±8.6	10.93±1.92	15.51±2.94	17.18±6.4
TCL/TA (%)	12.98±1.43	8.81±1.91	15.76±3.08	7.04±3.41	19.59±2.68	8.53±1.36	4.00±1.82

Table 5: The summary of SPSS regression analysis and ANOVA data for each company

	Regression Equation	Analysis of Variance (ANOVA)		
Companies		Statistics		
		R^2	F value	P value
Williamson	ROA = 4.0 + 0.91 TCL/TA	0.16	0.57	0.505
Sasini	ROA = 21.1 - 1.56 TCL/TA	0.73	21.64	0.002*
Reavipingo	ROA = 17.8 - 0.137 TCL/TA	0.01	0.02	0.898
Limuru tea	ROA= 42.0 + 0.63 TCL/TA	0.06	0.2	0.687
Kapchorua	ROA = - 14.3 + 1.08 TCL/TA	0.39	1.88	0.264
Kakuzi	ROA = 2.93 + 1.47 TCL/TA	0.47	2.64	0.203
Eeagards	ROA = 19.9 - 3.45 TCL/TA	0.23	0.30	0.681

*values which are statistically significant at $\alpha < 0.05$

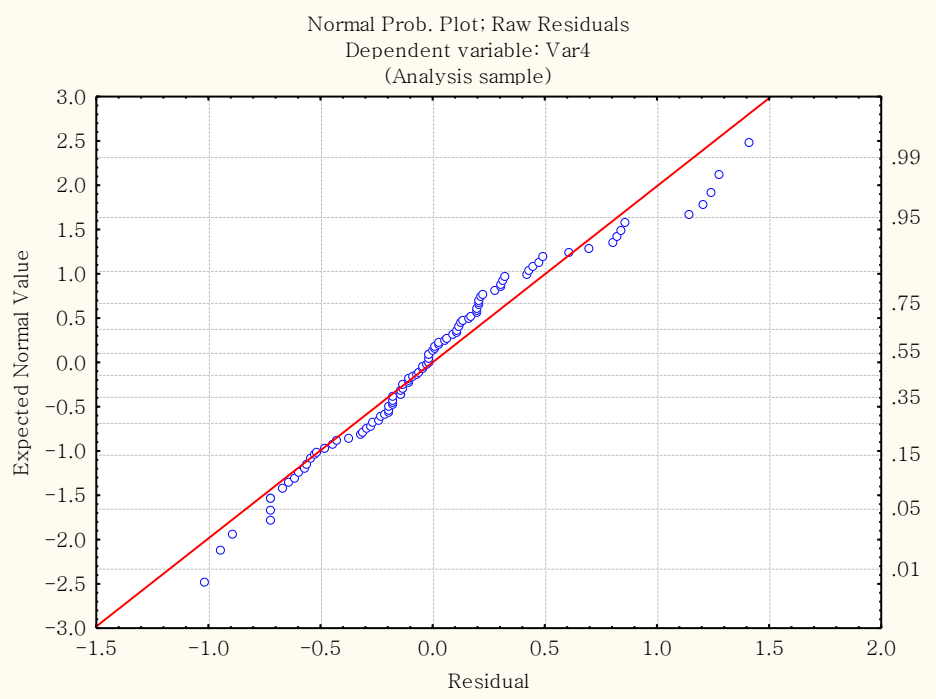

Figure 1: SPSS outputs for the QQ plots of normality tests

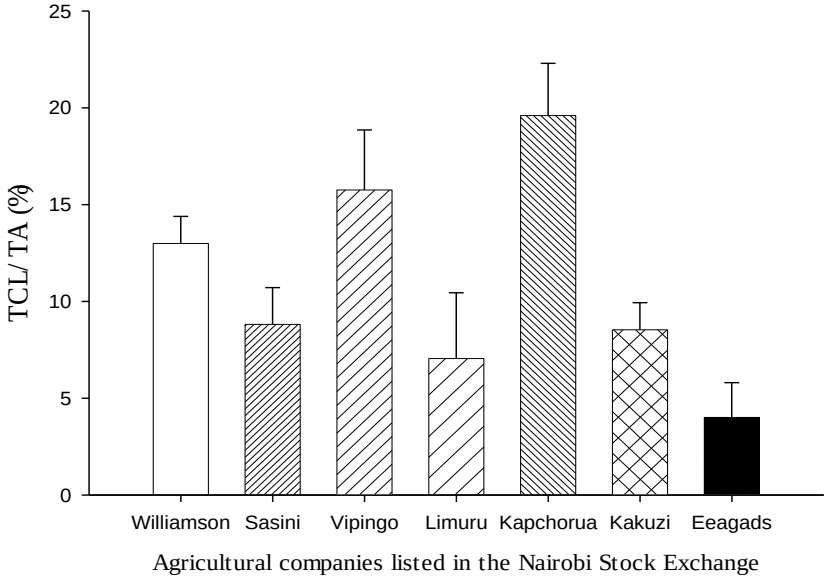

Figure 2: Mean and standard Error of Capital management approaches for the seven agricultural companies listed in the NSE for five year period (2009 – 2013)

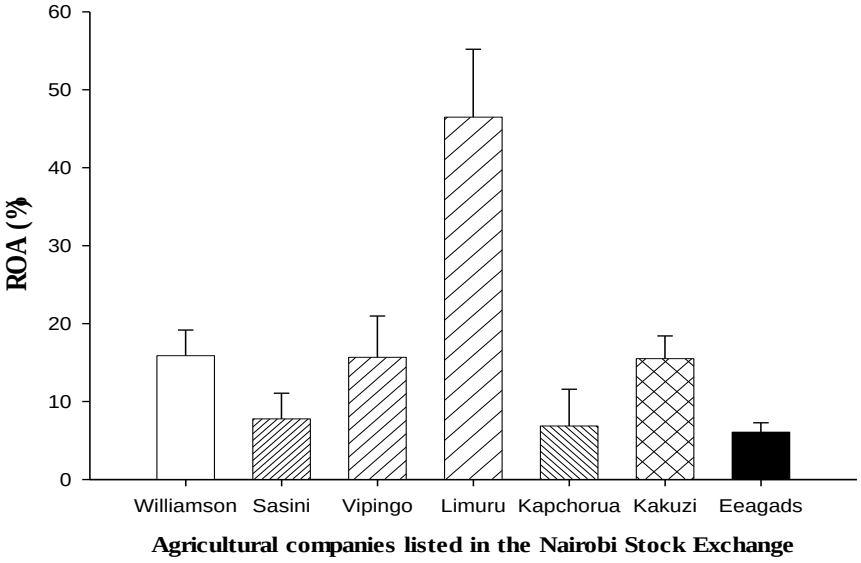

Figure 3: Mean and standard Error of working capital management approaches for the seven agricultural companies listed at the NSE for five year period (2009 – 2013)

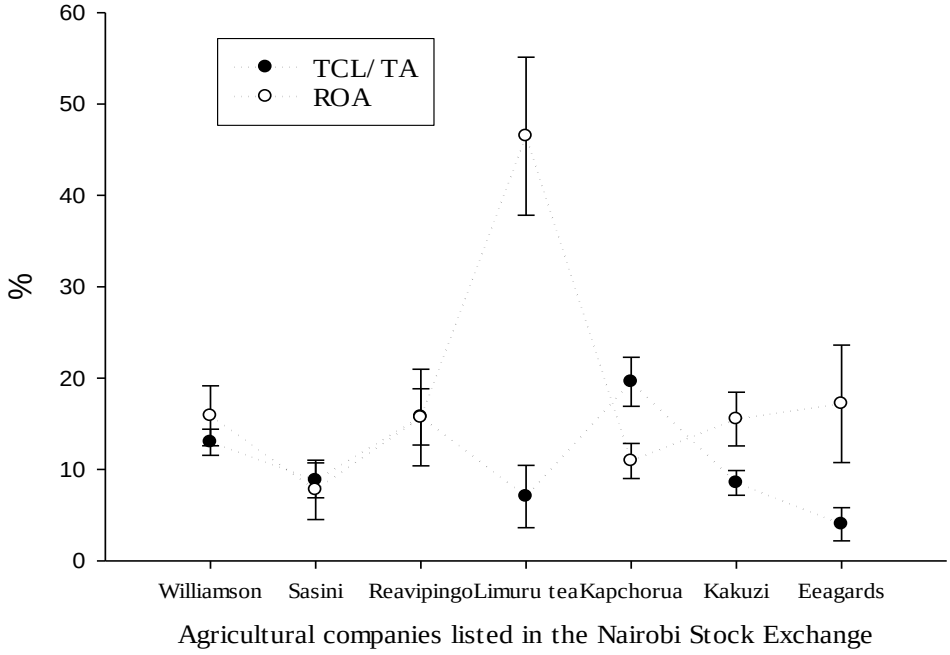

Figure 4: The five year average profitability estimate (ROA) and working capital management approaches (TCL/TA) for the 7 agricultural companies listed at the NSE ± SE

References

Afza, T., Nazir, M. S. (2007): Working capital management practices of firms: Empirical evidence from Pakistan, in the proceedings of 9th South Asian management forum (SAMF) North South University, Dhaka, Bangladesh, pp. 334-343.

Afza, T., Nazir, M. (2009): Impact of aggressive working capital management policy on firms' profitability. The IUP Journal of Applied Finance, 15(8): 20 - 30.

Afza, T. (2008): Working capital approaches and firm's returns. Pakistan Journal of Commerce and Social Sciences, Vol. 1, No. 1 (2008); ISSN 1997 8553.

Apuoyo, B. (2010): The relationship between working capital management policies and Profitability for companies quoted at the NSE. Unpublished MBA project, University of Nairobi

Banos-Cabalaro, S., Garcia-Teruel, P., Martinez-Solano, P. (2010): Working Capital Management in SME's. Accounting and Finance Journal, 50 (3): 511- 527.

Blinder, A., Maccini, L. (1991): The resurgence of inventory research: What have we learned? J.Econ, Survey, 5:291-328

Chiou, J., Cheng, L. (2006): The determinants of working capital management. The Journal of American Academy of Busniess, 10(1), 149-155

Deloof, M. (2003): Does working capital management affect profitability of Belgian firms', Journal of Business Finance and Accounting, 30: 573 - 588.

Eljelly, A. (2004): Liquidity-profitability tradeoff: an empirical investigation in an emerging market. International Journal of Commerce and Management, 14: 48 - 61.

Filbeck, G., Krueger, T. (2005): An analysis of working capital management results across industries. Mid American Journal of Business, 20(2): 11-20

Hall, C. (2002): Total working capital management, AFP Exchange, 22 (6): 26 - 32.

Hill, D., Wayne, K., Highfield, J. (2010): Net operating working capital behaviour: A first look. Financial Management Summer, 783-805.

Kothari, C. R. (2004): Research methodology: Methods and techniques. New Delhi: New Age International (P) Ltd, Publishers.

Lamberson, M. (1995): Changes in working capital of small firms in relation to changes in economic activity. Mid-American Journal of Business, 10 (2): 45 - 50.

Makori, D. M., Jagongo, A. (2013): Study of management of working capital and firm's profitability- Empirical evidence from manufacturing and construction firms listed on Nairobi Stock Exchange, Kenya. Master's thesis, Nairobi University. pp 89

Mathai, A. (2010): The relationship between working capital management and profitability retail supermarket chains in Kenya. Unpublished MBA project, University of Nairobi

Mathuva, D. (2009): The influence of working capital management components on corporate profitability: a survey on Kenyan listed firms. Research Journal of Business Management, 3: 1-11.

Mekonnen, M. (2011): The impacts of working capital management of firms profitability. Msc. thesis in Adis Ababa University

Messah, O. B. (2011): Reasons for low listing by Agricultural companies in the Bourse: A case study of Del Monte Limited Kenya. Research Journal of Finance and Accounting, 2:3

Mutungi, M. (2010): The relationship between working capital management policies and financial performance of oil marketing firms in Kenya. MBA research project, University of Nairobi.

Nurmet, M. (2011): Financial structure of agricultural firms. Management theories and Studies for rural business and infrastructure development, 1: 25

Nyangito, H., Okello, J. (1998) Kenya's agricultural policy and sector performance. Occasional Paper no. OP/04/98.

Nzioki, P.M., Kimeli, S. K., Abudho, M. R., Nthiwa, J. M. (2013): Management of working capital and its effects on profitability of manufacturing companies listed at NSE, Kenya. International Journal of Business and Financial Management Research, 1:35 - 42.

Oloo, M. S., Mwangi, M. W. (2014): Effects of aggressive financial policy on profitability of Listed Companies at the Nairobi Stock Exchange Kenya. International Journal of Finance and Research, 2(1): 444 - 448.

Peel, M., Wilson, N. (1996): Working capital and financial management practices in the small firm sector. International Small Business Journal, 14 (2): 52 – 68

Raheman, A., Nasr, M. (2007): Working capital management and profitability – case of Pakistani firms. International Review of Business Research Papers, 3: 279 - 300.

Remamoorthy, V. E. (1978): Working capital management, Institute for Financial Management and Research, Madras, 34: 5 -10

Shashi, K., Sharma, R. K. (2005): Management accounting – Principles and practice, Kalyani Publishers, New Delhi, 10th edition, 23-36 pp

Shin, H. H., Soenen, L. (1998): Efficiency of working capital management and corporate profitability. Financial Practice and Education 8 (2): 37 – 45.

Uyar, A. (2009): The relationship of cash conversion cycle with firm size and profitability: An empirical investigation in Turkey. International Research Journal of Finance and Economics, 24: 186 - 193.

Velnampy, T., Pirashanthini, S., Tharmila, K. (2013): Working capital approaches and firm's profitability of manufacturing companies in Sri Lanka. Comprehensive Research Journal of Management and Business Studies, 1(2): 24 - 30.

Waithaka, A. (2012): The relationship between working capital management practices and financial performance of agricultural companies listed at the Nairobi Securities Exchange. Masters thesis, The University of Nairobi 2012. Pp 71

Wainaina, C. (2010): The relationship between profitability and working capital of small and medium enterprises in Kenya. Unpublished MBA project. University of Nairobi.

Weinraub, H. J., Visscher, S. (1998): Industry practice relating to aggressive conservative working capital Policies, Journal of Financial and Strategic Decision, 11(2):11-18

Were, M., Njuguna, S. N., Alemayu, G., Karingi S. N. (2002): Analysis of Kenya's Export Performance. KIPPRA Discussion Paper No. 22.

Weston J. F., Eugene, F. (1975): Managerial finance, Dryden Press, Illinois, p. 510.