Determinants of the Performance of Firms Listed At the Nairobi Securities Exchange

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Abstract

This study analyzed the factors affecting the performance of 41 non-financial companies listed on the Nairobi Securities Exchange (NSE) using panel data over the period 2003 to 2013. A Hausman test results suggested the application of a random effects model for ROA and a fixed effects model for ROE. The empirical results of the estimation of both ROA and ROE show that corporate governance was statistically significant in determining the performance of firms and it had the expected sign (Positive). The leverage of the firm also had the expected negative sign and was statistically significant in explaining the performance of companies. Firm size and liquidity were however found to be statistically insignificant in determining the performance of these firms. Any limitations/suggestions for areas of further research/cross-reference!!

Keywords: Financial performance, Liquidity, Leverage, Nairobi Security Exchange, Return on Assets, and Return on Equity

1.0 Introduction

Engendered by the growing empirical evidence of a positive finance-growth nexus, capital market development has remained Kenya's strategic development goal since the mid 1980s (Ayako, et. el., 2015). Over the last three decades, the government has implemented significant reforms to underpin the country' development prospects including modernization of the Nairobi Securities Exchange (NSE). The modernization of the NSE include automation of trading, diversification of listed securities, and dematerialization of stocks) and the development of regulatory and supervisory frameworks. The NSE is one of the fastest growing bourses in the emerging markets and is the largest in East Africa with 50 listed companies, market capitalization of about Kshs. 2,500 billion in market capitalization, about 12 million in traded shares, about 500 million in equity turnover and about Kshs. 2 billion in total daily deals (Ayako et el., Ibid). The growth of the NSE has facilitated mobilization of resources to provide long term capital for financing investments. The government is implementing further reforms to both broaden and deepen of the country's capital market and the performance of the firms listed in the NSE to achieve it long term development goals.

2.0 Statement of the problem

The Kenya government, together with companies and individuals in the private sectors has put concerted efforts in ensuring the existence of a favorable environment for doing business in the country. Consequently, while most firms listed in the NSE have an improved in performance, others have experienced declining fortunes and some have even been delisted from the NSE over the last decade. Significant efforts to turn around such companies or even liquidate them have focused mainly on financial restructuring. However, managers and practitioners still lack adequate guidance for attaining optimal financing decisions (Kibet, Kibet, Tenei & Muthol, 2011). Although many problems experienced by the companies that have been put under statutory management (occasioning loss of stakeholders' wealth and the overall investors' confidendence in the NSE) were largely attributed to financing (Chebii, Kipchumba & Wasike, 2011), there was no systematic empirical evidence to support this.

While past studies (Almajali et al., 2012; Liargovas & Skandalis, 2008) have identified both internal and external factors as key determinants of a firm's performancebeen done with regard to factors affecting the financial performance of listed companies, especially in developed economies, these studies have produced mixed results. This study therefore sought to establish the factors that affect the performance of the companies listed at the NSE, covering a period 2003-2013.

3.0 Research questions

i. What factors affect the performance of firms listed in the NSE?

ii. What are the policy implications of the results of (ii) above?

4.0 Literature Review

A firm's financial performance is critical to its health and survival. A firm's high performance reflects its effectiveness and efficiency in the management of its resources for operational, investment and financing activities (Naser & Mokhtar, 2004). While there exists a large and growing body of theoretical and empirical literature the financial performance of listed firms, it is inconclusive on both the measurement and determinants of firms' financial performance (Liargovas & Skandalis, 2008). Past studies have proxied the financial performance of firms by ROA, ROE, ROI and Tobin's Q (Tobin, 1956). These studies remain inconclusive on which of these proxies is theoretical and/or empirically the best measure of a firm's financial performance. Consequently, like previous, previous studies have employed all or some of these proxies of the firm's financial performance.

Past studies have identified both firm specific (internal) factors (including corporate governance, leverage, and liquidity and firm size) and industry specific (external) factors (including growth, concentration, capital intensity, advertising intensity, etc.) as key determinants of the financial performance based on capital structure relevance; working capital management; and organizational behavior theories. The capital structure relevance theories underpinning the identified factors include the tradeoff theory (Chirinko & Singha, 2000), pecking order theory (Myers, 1984), free cash flow theory (Jensen, 1986; Dorff, 2007)), agency theory (Berle & Means, 1932; Elliot et el., 2002) and the Modigliani and Miller capital structure relevance theory (Modigliani & Miller, 1958,1963; Myers, 2001; Brigham & Ehrhardt, 2004) and emphasize the role of leverage on the firm's performance.

The working capital management theories of Baumol (1952), Tobin (1956) Miller-Orr (1966) Dash and Ravipati (2009), Stone (1972) Srinivasan and Kim (1986) and Opler et el. (1999) emphasize the role of liquidity the firm's performance. The organizational behavior theories capture the multidimensional aspects of the firm's performance including the effects of structure (corporate governance), systems, firm size, history (age), and organizational climate factors (e.g. top management team characteristics, motivation, group dynamics, decision-making practices, leadership, communication flow, goal emphasis and planning, job conditions, etc.) (Hansen & Wernerfelt, 1989; Hambrick & Mason, 1984).

Previous empirical literature is inconclusive on the relative importance of firm level (internal) and industry level (external) determinants of the firms' financial performance during any state of the economy. While some studies (Hawawini, Subramanian, & Verdin, 2003) argue that industry or external firm factors outplay internal factors in influencing the firms' performance, others (Opler & Titman, 1994) argue that internal (firm specific) factors outplay external factors in driving the firms' performance.

In an effort to validate MM theory in Kenya, Maina and Kondongo (2013) investigated the effect of debt-equity ratio performance of firms listed at the Nairobi Securities exchange. A census of all firms listed at the Nairobi Security Exchange from year 2002-2011 was the sample. The study found a significant negative relationship between capital structure (DE) and all measures of performance. The results collaborated MM theory that indeed capital structure is relevant in determining the performance of a firm. The study further found that that firms listed at NSE used more short-term debts than long term.

Abdul (2012) conducted a similar study to determine the relationship between capital structure decisions and the performance of firms in Pakistan. The study concluded that financial leverage has a significant negative relationship with firm performance as measured by ROA, GM, and Tobin's Q. The relationship between financial leverage and firm performance as measured by the return on equity (ROE) was negative but not statistically significant. In another study, Javed and Akhtar (2012) explored the relationship between capital structure and financial performance. They concluded that there is a positive relationship between financial leverage, financial performance, and growth and size of the companies. The study, which focused on the Karachi Stock Exchange in Pakistan, used correlation and regression tests on financial data. The findings of the study are consistent with the agency theory.

Daily and Dalton (2008) did an assessment on the corporate Governance in manufacturing firms in the USA. Corporate governance was found to be positively related with business survival. Liargovas and Skandalis (2008) did a study on the financial performance and size of manufacturing firms in Greece. They found that financial performance of majority of the firms was affected by firm size. They argued that firm size is a basis of competitive advantage in the sense that larger companies tend to be more efficient than their smaller counterparts and have better resources to survive economic downturns.

Nosa and Ose (2010) did a study on the effect of capital structure on corporate Performance of during economic downturns in Nigeria. Stratified random sampling was used to select 20 firms from which 200 respondents were sampled. The findings indicated that leverage has a significant and negative relationship with firm's performance.

Finally, the majority of the studies have focused on the insurance and manufacturing sectors in the developed economies. The studies have not given a clear picture on how the various factors may affect performance of firms. Although, locally, there have a few empirical studies conducted on the determinants of the financial performance of the firm, these have focused on unlisted firms (Ogeto, 2003; Koros, 2001). The current study filled a research gap by investigating the factors that affect performance of firms listed in the NSE.

To establish the effect of board size, board independence, debt to equity ratio, liquidity and firm size on the financial performance of companies as proxied by return on assets (ROA) and return on equity (ROE).

The government of Kenya, together with companies and individuals in the private sectors has put concerted efforts in ensuring the existence of a favorable environment for doing business in Kenya and, as a result we have seen an improvement in performance of most companies listed at the NSE. At the same time, a number of companies, however, are experiencing declining fortunes and some have even been delisted from the NSE over the last decade. Significant efforts to turn around such companies or even liquidating them have focused mainly on financial restructuring. However, managers and practioners still lack adequate guidance for attaining optimal financing decisions (Kibet, Kibet, Tenei & Muthol, 2011), yet many problems experienced by the companies put under statutory management were largely attributed to financing (Chebii, Kipchumba & Wasike, 2011).

This situation has led to a loss of shareholders' wealth and the overall investors' confidence in the NSE. In Kenya, however, we have seen a good performance in other sectors especially banking, and the insurance sectors. However, the overall financial performance of listed companies in Kenya is somehow weak expect for some companies which accomplished some considerable revenues streams. A number of studies (Almajali et al., 2012; Liargovas & Skandalis, 2008) have been done with regard to factors affecting the financial performance of listed companies, especially in developed economies, but this studies have produced mixed results. This study therefore sought to establish the factors that affect the performance of listed companies at the NSE, first by excluding financial institutions such as banks and insurance companies and instead focusing on 44 out of the 44 non-financial companies, and secondly by introducing other variables such as the firm size and corporate governance, covering a period between 2003-2013.

5.0 Methodology

5.1 Research Design

This study adopted an explanatory non-experimental research design to investigate the factors influencing the performance of firms listed at the Nairobi Securities Exchange, Kenya. Explanatory research seeks to establish causal relationship between variables (Saunders et al., 2009 & Robson 2002). According to Kerlinger and Lee (2000) an explanatory non-experimental research design is appropriate where the researcher is attempting to explain how the phenomenon operates by identifying the underlying factors that produce change in it in which case there is no manipulation of the independent variable.

5.2 Empirical Model

The following panel regression models were estimated;

$\text{ROA}_{it} = \alpha_0 + \beta_1 \text{BS}_{it} + \beta_2 \text{BI}_{it} + \beta_3 \text{LEV}_{it} + \beta_4 \text{LIQ}_{it} + \beta_5 \text{FRMSIZ}_{it} + \varepsilon_{it}$ .... Equation 1

$\text{ROE}_{it} = \alpha_0 + \beta_1 \text{BS}_{it} + \beta_2 \text{BI}_{it} + \beta_3 \text{LEV}_{it} + \beta_4 \text{LIQ}_{it} + \beta_5 \text{FRMSIZ}_{it} + \varepsilon_{it}$ .... Equation 2

Where;

ROA_{it} = Return on assets of company i at time t

ROE_{it} = Return on Equity of company i at time t

BS_{it} = Board size of company I at time t

BI_{it} = Board Independence of company I at time t

LEV_{it} = Leverage of company I at time t

LIQ_{it} = Liquidity level of company I at time t

α_0 = Constant term

β's = Coefficients of the explanatory variables

ε_{it} = composite error term

5.3 Data Collection

The study utilized panel data which consisted of time series and cross-section data. The data for all the variables in the study were extracted from published annual reports and financial statements of the companies listed in the NSE covering the years 2006 to 2012.The data was obtained from the NSE hand books for the period of

reference. The financial statements from which the data was extracted include the income statement, statement of financial position, and notes to the accounts. The data extraction was based on a document review guide.

5.4   Data Analysis

Being interval in nature, the data was analyzed using descriptive statistics, correlation analysis, and panel multiple regression analysis. Given that classical panel regression model methodology was adopted for this study a set of other classical parametric assumptions/characteristics of the data were performed to ensure its suitability for the regression analysis. To confirm the other parametric nature of the data,   we tested for normality, multicollinearity, heteroscedacity and autocorrelation. We also tested for the adoption of adoption of either a random or fixed effects model for ROA and ROE using the Hausman Test. The estimation of the chosen fixed and random effects models was based STATA 11.0 software. The results of the diagnostic and regression analyses are presented below.

6.0 Discussion of Empirical Results

6.1. Diagnostic Tests of Parametric Data

6.1.1 Test for Normality of residuals

The classical linear regression assumptions require that the data be normally distributed. Therefore to ascertain that residuals are normally distributed a Kolmogorov-Smirnov test was performed. The Table 1 below indicates that the variables are normally distributed given that the p-values are greater than 5 percent.

Table 1   One-Sample Kolmogorov-Smirnov Test

		Board Size	Board Independence	Liquidity	Firm size	Leverage	ROA	ROE
Most Extreme Differences	Absolute	.100	.173	.258	.302	.316	.147	.293
	Positive	.100	.066	.258	.270	.290	.105	.206
	Negative	-.078	-.173	-.195	-.302	-.316	-.147	-.293
Kolmogorov-Smirnov Z		2.088	3.619	5.201	6.164	6.175	2.989	5.889
Asymp. Sig. (2-tailed)		.326	.432	.823	.475	.135	.573	.081

6.1.2 Test for Multicollinearity

The other assumption stipulated for classical regression models is that the variables should not be highly correlated. Multicollinearity among the variables is said to exist if the reported coefficients of the Pearson correlation exceed 0.8. The Table 2 below shows the Pearson correlation coefficients were below 0.8 and it was thus concluded that multicollinearity was not a problem in the data.

Table 2 Pearson Correlation Coefficients

	Board Size	Board Independence	Liquidity	Firm size	Leverage	ROA	ROE
Board Size	1						
Board Independence	0.743**	1					
Liquidity	-0.338**	-0.241**	1				
Firm size	0.443**	0.333**	-0.110*	1			
Leverage	0.057	0.067	-0.124*	0.130*	1		
ROA	0.122*	0.044*	0.091	-0.015	-0.289**	1	
ROE	0.109*	0.076*	0.062	0.039	-0.524**	0.659**	1

**. Correlation is significant at the 0.01 level (2-tailed).

 *. Correlation is significant at the 0.05 level (2-tailed).

6.1.2 Testing For Heteroscedasticity

The study tested for panel level Heteroskedasticity using the A Modified Wald test. The null hypothesis of this test was that the error variance was Homoskedastic. The Modified Wald test produced a chi-square value of 22000.31 with a p-value of 0.0000 for model ROA and a chi-square of 56834.15 with a p-value of 0.0000 for model ROE. The chi-square value was statistically significant at 1 percent level for both models and hence the null hypothesis of constant variance was rejected to signify the existence of Heteroskedasticity in the study data

as recommended by Poi and Wiggins (2001). To correct for Heteroscedasticity, the study used robust standard errors.

6.1.3 Test for Autocorrelation

The study used the Wooldridge test for autocorrelation to test the presence of autocorrelation. The null hypothesis of this test was that there was no first order autocorrelation in the data. The F statistic value was 0.217 for ROA model and 12.020 for ROE Model with an associated p-value of 0.6438 and 0.0013 for Model ROA and ROE, respectively. Given that the p-value of the F test for ROE was significant and thus indicating the presence of autocorrelation the study corrected for this violation of classical linear regression model assumption by using of lagged variables.

6.1.4 Hausman Test

In order to choose between fixed and random effects model for model ROA, Hausman test was used. The null hypothesis of the Hausman test was that the random effects model was preferred to the fixed effects model. For ROA model, Hausman test reported a chi-square of 5.57 with a p-value of 0.3503 implying that at 5 percent level, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that random effects model was preferred to fixed effect model for ROA as recommended by Greene (2008). Similarly, in order to choose between the fixed and random effects models for model ROE, the Hausman test was used. Hausman test reported a chi-square value of 28.18 with a p-value of 0.0017implying that the chi-square value was statistically significant at 5 percent level of significance. Hence the null hypothesis that random effects model was preferred to fixed effect model for ROE model was rejected and thus the fixed effects model was deemed appropriate.

6.2.0   Panel Regression Results

Table 3 Panel regression results for Model ROA and Model ROE

	(1) ROA	(2) ROE
Board Size	0.0144^{**}	0.0132^{**}
	(2.95)	(2.01)
Board Independence	0.0731^{**}	0.233^{**}
	(2.68)	(2.61)
Liquidity	0.00407	-0.00137
	(1.06)	(-0.15)
Leverage	-0.0227^{***}	-0.104^{***}
	(-4.99)	(-3.43)
Lnfirm size	0.00784	0.0525
	(1.10)	(1.87)
lag Board Size		0.0268
		(1.24)
lag Board Independence		-0.103
		(-0.28)
Lag Liquidity		0.000481
		(0.05)
Lag Leverage		0.0103
		(1.00)
Lag lnfirmsize		0.0688^{*}
		(2.44)
constant	0.150	0.00714
	(1.39)	(0.02)
N	375	331
R^2		0.109

t statistics in parentheses

*p< 0.05, **p< 0.01, ***p< 0.001

The panel regression results as presented in Table 3 indicated that board size was positively and significantly related to return on assets and the return on equity. The study also found that board independence was also positively and significantly related to return on assets as well as on the return on equity. The results of the study therefore indicated that corporate governance as proxied by board size and board independence are significant determinants of financial performance of firms quoted at the Nairobi securities exchange. The study findings are

in tandem with the findings of Daily and Dalton (2008), who also found that corporate governance in manufacturing firms in USA, were positive and significant in explaining the performance of these firms.

The study also found out that also found the leverage had a negative and significant relationship with the return on assets as well as the return of equity. This finding is also consistent with findings of Nosa and Ose (2010) who also found capital structure to be significant and negative in determining the performance of Nigerian firms. The results are further consistent with the findings of Abdul (2012) who also concluded that financial leverage has a significant negative relationship with firm performance as measured by ROA for firms in Pakistan. The study finds that the firm size and liquidity are insignificant in explaining the financial performance

7.0   Conclusions

Consistent with previous studies, the study concluded that board size had a significant effect on firm performance. Hence, firms with big board sizes are more likely to report higher return on assets compared to firms with small board sizes. In addition, big board sizes influence return on equity positively. Therefore firms with big board sizes are more likely to report higher return on equity. The probable reason is that big board sizes facilitate generation of diverse opinions which affects the firm performance positively. Secondly, it was similarly concluded that board independence had a significant effect on firm performance. Firms which have an independent board are more likely to report higher Return on assets compared to firms with relatively low board independence. In addition, board independence influence return on assets as well as return on equity positively. Therefore firms whose boards are independent are more likely to report higher return on assets and a higher return on equity. The probable reason is that board independence is likely to reduce agency costs as better control is exercised on behalf of the finance providers. Thirdly, the study concluded that liquidity had no significant effect on firm performance. Firms which are more liquid or less liquid does not significant affects its financial performance. In addition, liquidity influence return on assets positively while its influence on return on equity is negative. Lastly, the study concluded that firm size had an insignificant effect on firm performance. Hence, bigger firms do not outperform smaller firms. However, the lag of firm size was found to be statistically significant.

8.0   Recommendations

Based on the findings the study recommends the following; first, given that board size was significant in influencing the firm performance the study recommends that firms should ensure that they have an optimal board size so as to improve on their financial performance. Secondly, given that the board independence was also significant it is recommended that the number of non-executive directors be increased as this increases board independence and thus resulting in a scenario where diverse opinions are obtained on running the day to day activities of the firm. Thirdly, the study also recommends that despite the fact that current investments by firms does not influence its performance at that period, they should invest more since there is a lagged invest and that the returns from the investments will improve the financial performance of the firms in the subsequent periods.

A study should be undertaken to compare the factors influencing the financial performance of the financial as well as the non-financial companies listed at the Nairobi securities exchange as well as those not listed. In addition further studies could be extended to analyze the factors affecting the performance of companies at cross-country level such as within the East African Community.

References

Abdul, G .K. (2012). The Relationship of Capital Structure Decisions with Firm Performance: A Study of the Engineering Sector of Pakistan. International Journal of Accounting and Financial Reporting, 2(1), 2162-3082.

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange. Journal of Management Research, 4(2), 266-289.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy.The journal of finance, 23(4), 589-609.

Ayako, A., Musyoki, D., Murungi, S. (2015). Post-Merger and Acquisitions Performance of Commercial Banks Listed at the Nairobi Securities Exchange, Research Journal of Finance and Accounting, Vol. 6 No. 10, pp. 65-78.

Baumol, W.J.; Tobin, J. (1989). The Optimal Cash Balance Proposition Balance: Maurice-Allais Priority, Journal of Economic Literature, 27 (3), 1160-1162

Baumol, W.J. (1952). The Transactions Demand for Cash: An Inventory Theoretic Approach, Quarterly Journal of Economics,66 (4), 545-556

Brigham, E. F. & Ehrhardt, M. C. (2004). Financial Management: Theory and Practice, 11th Edition, South-Western College Publishers, New York.

Chebii, E. K., Kipchumba, S. K. and Wasike, E. (2011). Relationship between Firms Capital Structure and Dividend payout ratios: Companies listed at Nairobi stock exchange.Kabarak First International Conference 12th– 14th Oct 2011.

Dash, M; Ravipati, Rani (2009). A Liquidity-Profit Trade-off Model for Working Capital, Retrieved from,http/ssrn.com/abstract=1408722

Greene, W.H. (2008). Econometric Analysis (6th ed.). Upper Saddle River, N.J.: Prentice Hall.

Hansen, G.S.;Wernerfelt, B. (1989). Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors, Strategic Management Journal, 10, 399-411

Hawawini, G., Subramanian, V., & Verdin, P. (2003). Is performance driven by industry-or firm-specific factors? A new look at the evidence. Strategic management journal, 24(1), 1-16.

Iswatia, S., & Anshoria, M. (2007). The Influence of Intellectual Capital to Financial Performance at Insurance Companies in Jakarta Stock Exchange (JSE). Proceedings of the 13th Asia Pacific Management Conference. Melbourne.

Javed,B. & Akhtar,S. (2012)Interrelationships between Capital Structure and Financial Performance, Firm Size and Growth: Comparison of industrial sector in KSE: European Journal of Business and Management, 4(15), 148-157.

Kerlinger, F. N., & Lee, H. B. (2000). Foundations of behavioral research (4th ed.). Fort Worth, TX: Harcourt.

Kibet,B., Kibet ,L., Tenai, J. & Mutwol, M.(2011) The Determinants of Leverage at the Nairobi Stock Exchange, Kenya. The Second Asian Business and Management Conference 2011 Osaka, Japan.

Liargovas, P. G., & Skandalis, K. S. (2008).Motives and Marketing Strategies of Greek Companies Exporting to South-East European Markets.South-Eastern Europe Journal of Economics, 2, 227-244.

Levin, R. (2005). Finance and Growth: Theory and Evidence. In Handbook of Economic Growth, ed. P. Aghion, S.N. Dulauf, 865-934

Maina, L. & Kondongo, O. (2013). Capital Structure and Financial Performance in Kenya: Evidence from Firms Listed at the Nairobi Securities Exchange. Paper Presented at the Jomo Kenyatta University of Science and Technology Research Conference, Kenya.

McKinnon, R.I. (1975). Money and Capital in Economic Development, Washington, D.C.: The Brookings Institute.

Miller, M.; Orr, D. (1966). A Model of the Demand for Money by Firms, The Quarterly Journal of Economics, 81, 413-435

Ngugi, R.; Maana, I.; Amanja, D.; Collier, P.; Ndungu, N. (2010). Capital Market and Economic Growth in Kenya. In Kenya Policies for Prosperity, Oxford University Press

Nosa, & Ose, (2010). Capital Structure and Corporate Performance in Nigeria: An empirical investigation, Journal Of Management Sciences, Vol 1, Issue 1, 43-52.

Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy.Journal of accounting research, 109-131.

Opler, T. C., & Titman, S. (1994). Financial distress and corporate performance.The Journal of Finance, 49(3), 1015-1040.

Opler, T.; Pinkowitz, L.; Stulz, R.; William, R. (1999). The Determinants and Implications of Corporate Cash Holdings, Journal of Financial Economics, 52, 3-46

Poi, B., & Wiggins, V. (2001). Testing for panel-level Heteroskedasticity and autocorrelation. State Corp LP. Retrieved from http://www.stata.com/support/faqs/stat/panel.html

Robson, C. (2002). Real World Research: A Resource for Social Scientist and practioners, Research oxford Blackwell.

Rumelt, R. P. (1991). How much does industry matter?.Strategic management journal, 12(3), 167-185.

Saunders, M., Lewis, P. & Thornhill, A. (2009).Research methods for business students (5th ed) Italy: Prentice Hall.

Shaw, E. S. (1973). Financial Deepening in Economic Development, New York: Oxford University Press

Tobin, J. (1956). The Interest Elasticity of the Transactions Demand for Money, Review of Economics and Statistics, 38(3), 241-247

Srinivasan, V.; Kim Y.H. (1986). Determinants of Cash Flow Management: State of Art and Research Directions,. OMEGA-International Journal of Management Sciences, 14, 145-166

Stone, B. K. (1972). The Use of Forecasts and Smoothing in Control-Limit Models for Cash Management, Financial Management, spring, 72-84

Yamane, W. (2009). Re-examining the Financial Development and Economic Growth Nexus in Kenya, Economic Modelling, 26 (6), 1140-1146

Yartey, C.A.; Adjasi, C.K. (2007). Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges, IMF Working Paper, WP/07/209, Washington D.C.

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