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Effect of Default on Profitability in Kenyan Listed Companies

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Abstract

Past studies in Kenya on default have concentrated on liquidity as a measure of short term default and neglected solvency which measures long term default. The current study examined the association between solvency and liquidity and their effect on profitability in Kenyan listed companies. A total of 41 firms were selected to be in the study sample out of 46 non-financial listed firms in the Nairobi Securities Exchange during years 2013 to 2017 and panel data regression analysis was employed hence 205 firm years were analyzed. The findings revealed that liquidity and solvency are significantly and negatively associated while the default measures lacked a significant relationship with profitability in Kenyan listed companies. The findings implied that there is no need for firms to focus too much on the relationship between default and profitability including invest heavily in liquidity in order to meet short term obligations as nowadays it is possible for firms to either convert non-cash assets quickly or borrow on short notice from financial institutions in case of an urgent need to meet liquidity shortages. These findings are consistent with the shitability theory.

Keywords: Solvency; Liquidity; Firm size; Profitability

JEL Classifications: G30, G39, F65

Introduction

Many large supermarkets and retailers and even some Universities in Kenya are currently on the verge of bankruptcy even after being industry leaders for a long period in the past. The entities have expanded rapidly in a bid to expand their presence in the country and beyond for perhaps empire building reasons over a short period of time and can now be described as having faced the problem of overtrading which is characterized by lack of cash, reduced profit margins, excess borrowing, loss of supplier support (Nur and Mohamed, 2016). One of the reasons behind the fast expansion of these entities is the need to increase profits despite the thin margins that characterize the products on offer during times of intense competition. Over trading is a working capital management problem in which a firm faces if it expands too fast against limited resources and it can lead of liquidity and profitability strain. During the expansion of the Kenyan entities, their profit or surplus margins fell and have been unable to meet their short term obligations and consequently their suppliers taken them to court and have withdrawn or reduced their supplies. This has caused the entities to suffer greatly from image loss and a dip in revenue.

Solvency problems in a firm cannot be solved by having additional liquidity although liquidity problems can be solved by a firm being more solvent (Kundid and Marinovic, 2016). Firms should strive to be both liquid and solvent as both default metrics are of importance to the firm. Liquidity and solvency are distinct from each other. Liquidity is concerned with an entity ability to satisfy its short term obligations when they fall due, failure to which the firm's creditworthiness will be dented and eventually the firm will be at the risk of bankruptcy lawsuits from disgruntled suppliers (Vakilifard & Askarzadeh, 2013). Solvency focuses on an entity's ability to meet its long term obligations and whether the firm has more long term assets to be able to service liabilities through the offsetting of principal and interest obligations as they fall due (Olalere et al., 2019). Local and foreign scholars have extensively studied the liquidity aspect of default but neglected solvency aspect of default (Heejung, 2016) which created a research gap for the current research on alongside the need to examine the association between solvency and liquidity and their effects on profitability in Kenyan listed firms.

Liquidity as a construct can be broken down into funding liquidity and market liquidity. Funding liquidity focuses on ability of a person to pay obligations quickly when they fall due while market liquidity is concerned with ability to sell an asset quickly at or near the market price without incurring significant capital losses (Brunnermeier et al., 2009). Some scholars are of the opinion that if there is a liquidity risk that interrupts the quick conversion of assets into cash in a firm, credit worthiness challenges are likely to affect the firm adversely and if there is a solvency risk which interferes with long term sustainability of a firm bankruptcy related challenges are likely to adversely affect the firm (Surbhi, 2016). Liabilities of a business refer to its financial obligations and comprise of debts and other obligations that the firm owes to outsiders. Debt refers to funds borrowed by a firm (Frank, 2003). The amount of debt that a firm should use whether short term or longterm has been controversial matter due to the benefits and risks associated with debt usage. Debt has numerous other benefits however it requires constant servicing by the borrower to avoid loss of image and creditworthiness alongside lawsuits for default (Hamid and Rohani, 2018).

Some scholars have observed that firms that generated high profits were more likely to use more debt as they faced lower risk of financial distress by possessing the requisite resources needed to clear the debt without difficulty (Robert and Kraus, 2013). It is noteworthy that there is a difference between profitability and cash position since it is possible for a firm to be profitable yet lack cash to clear its obligations. Such scenarios occur due to the firm engaging in credit transactions or has non cash related expenditure and incomes. Hence the need to reconcile the profitability and cash positions through the preparation of cash flow statements. Other scholars have observed that profitable firms tend to have lower debt levels as they are able to generate more funds internally and lack the need to take on additional risks of defaulting on the constant debt repayment requirements (Mugosa, 2015). This observation that is consistent with the pecking order theory of financing by Myers and Majluf (1984) which advocates for the use of internal funds before resorting to use of external funds by firms.

Profitability as a metric of firm financial performance is widely used by financial analysts during security selection and if a firm has been incurring losses continuously it is deemed to financially unhealthy and at risk of collapse from loss of capital invested in the firm (Liem and Sautma, 2012). Knowledge of a firm's profitability or bottom line is of great importance to investors who wish to avoid the risk of investing in loss making unviable firms or divesting or not investing in profitable and viable firms. The financial measure of profitability can be measured using the financial ratios of return on assets (ROA) and return on equity (ROE) amongst other ratios and metrics. If a firm is not profitable and has been incurring losses in a continuous

manner it is regarded as being in trouble and is deemed to be facing the risk of bankruptcy (Liem and Sautma, 2012). Profitability as a performance measure is criticized for being affected by accounting estimates and judgments and also affected by accounting standards that guide the preparation of financial statements (Al Matari, Al Swidi, Bt Fadzil, 2014). Accounting profits are also affected by the problem of creative accounting (Satwinder et al., 2017).

The return on assets (ROA) profitability measure is not perfect, it is deemed to be the generally most effective available financial measure of companies. It a long term performance measurement concept and it considers the intrinsic aspects of a business in broad perspective and incorporates the income and assets needed to run the business. ROA is deemed to be a balanced measure that considers risk of leverage such that an increase in leverage improves assets through increase in cash borrowing. Return on equity (ROE) is a profitability metric that describes how much income is attributable to the equity shares of the business. ROE measure is criticized as inferior to ROA as it ignores the risk of financial leverage by only focusing on equity returns (Hagel et al., 2013). This study employed ROE and not ROA since total assets were employed in computing the measure of solvency and firm size was measured using natural log of total assets. This study thus focused on assessing the effect of default whether short term on long term on the profitability of firms listed in the Nairobi Securities Exchange.

Previous related studies have had inconclusive findings on the association between liquidity and solvency which are both measures of default perhaps due to the urgent requirement to settle short term obligations or risk being sued for default and be denied credit by suppliers (Heejung, 2016). Past studies have been inconclusive on findings about the relationship between default and profitability. Kyule (2015); Mburu (2015); Niresh (2012) found that liquidity is not related to profitability. On the other hand Yameen et al., (2019); Khidmat and Rehman (2014) and Yusoff (2017) found that liquidity is positively and significantly related to profitability. On the contrary, Mugosa (2015) found profitability and liquidity are significantly and negatively related and thus a research gap relating to the relationship between default components and profitability arose for the current research.

The Nairobi Securities Exchange and was established in 1954 and presently has 64 listed firms that are grouped into 9 sectors. The current study concentrated on 41 sampled non-financial listed companies as the interpretation of assets and liabilities in financial companies differs from that of non-financial companies. This study narrowed on the period of years 2013 to 2017 and during this period it was noted that 10 listed Kenyan firms had insolvency related challenges by negative net worth or having total liabilities exceeding total assets. During the same period 17 listed Kenyan companies had experienced substantial losses and negative return on equity and negative P/E ratio. It was noted that 7 out of the 10 insolvent non-financial listed firms were loss making which is an indicator that the 7 firms were in serious financial distress. The continued losses and insolvency coupled with illiquidity by listed firms, limits investment options of Kenyan investors. This challenge worsens when there are many local individual investors who are unknowledgeable (Financial Sector Deepening 2019) and are thus faced with the risk of inappropriate stock selection and can invest in unviable firms while divesting or not investing in viable firms. All these challenges became the motivation behind the current study that sought to address the following research hypotheses:

H01: There is no significant association between solvency and liquidity in Kenyan listed firms

H02: There is no significant relationship between default and profitability in Kenyan listed firms

The rest of the paper is organized as follows: section 2 focuses on review of past literature and development of hypothesis. Section 3 explains the methods that were employed. Section 4 presents the empirical findings while section 5 discusses the findings, conclusions and makes recommendations from the study.

Literature Review

This section reviewed the theories and variables / concepts being reviewed in detail and then developed relevant hypothesis. Liquidity preference theory was employed. It was proposed by John Keynes (1936) and opined that firms need to be liquid for transaction, precautionary and speculative reasons. The default determinants in the current research of liquidity and solvency are thus supported by the liquidity preference theory. The shiftability theory by Harold Moulton (1915) opined that liquidity can be maintained by firms having assets that can be converted into cash easily and for commercial banks liquidity can easily be maintained through interbank transfers. This implies that firms do not require need not be very liquid if they have a good relationship with financial institutions that can finance them during times of liquidity constraint.

In the current research the liquidity and solvency default variables and even the profitability dependent were also supported by the shiftability theory. If liquidity level is reduced without the firm suffering, then the extra cash can be invested in profitable opportunities by the firm.

Another theory that grounded the current study was the pecking order theory by Myers and Majluf (1984) opined that firms may not be in need of external borrowing and that firms should exhaust use of internal funds before considering the use external funds. This implies that the amount of debt or borrowed funds that a firm employs is influenced by the firm's exhaustion of internal funds. Mugosa (2015) observed that profitable firms assume less debt if they have enough internal funds which they can employ instead of borrowing of debt which is expensive and lead to financial distress. The pecking order theory has been criticized for ignoring other factors that may affect the choice of financing other than cost of capital and availability of internal funds (Adedeji, 1998). Liquidity and profitability variables have been informed by the pecking order theory. The tradeoff theory by Modigliani and Miller (1963) is relevant to the current study as it implies that there is a negative association between liquidity and solvency and that there is a negative relationship between default and firm profitability.

Very few studies have focused on the relationship between liquidity and solvency and the few have concentrated on commercial banks and hence the existence of a research gap of studying the relationship in non-financial institutions in Kenya. Kundid and Marinovic (2016) studied the relationship between solvency and liquidity in Croatian banks during years 2002 to 2010 and that liquidity and solvency are have a significant and negative relationship. Heejung (2016) also found a significant and negative relationship between liquidity and solvency in a study involving 130 shipping companies located in 19 countries in Europe and Asia between 2009 to year 2013. Mosab and Hassan (2017) in UAE during years 2011 to 2014 found that solvency and liquidity were negatively and significantly related. The few studies between the association between liquidity and solvency caused the development of the following alternative hypothesis:

HA1: There is a significant association between liquidity and solvency in Kenyan listed non-financial companies

Past studies on the effect of solvency on profitability have been inconclusive, Olalere et al., (2019) studied the effect of loan growth, bank solvency on firm value in Nigerian and Malaysian commercial banks during years 2009 and 2017 and the findings revealed that bank solvency was positively and significantly related to financial performance. These findings agreed with those of Yameen, Farhan and Tabash (2019) in India during years 2008 to 2017; Khidmat and Rehman (2014) in Pakistan during years 2001 to 2009 and Yusoff (2017) in Malaysia during years between 2012 – 2015 found that default and profitability are positively and significantly related. On the contrary, some researchers found no significant relationship between default and profitability including Kyule (2015) in Kenya during 2009 – 2015; Mburu (2015) in Kenya during years 2010 to 2014 and Niresh (2012) in Sri Lanka during the period 2007 to 2011. The inconclusive findings in literature on the relationship between default and profitability resulted in the development generated the following alternative hypothesis:

HA2: There is a significant effect between default measures of solvency and liquidity on profitability in Kenyan listed companies

Research and Methodology

This section contains the population and sample size and techniques employed, the data collection sources and data analysis techniques employed in the study. The total population of the study involved 64 NSE listed firms during years 2013 – 2017 and the firms comprised of 19 financial companies and 46 were non-financial companies. The current study focused on the non-financial companies as the interpretation of current assets and current liabilities in financial companies is dissimilar from that non-financial ones. Out of the 46 non-financial companies, 41 of them were selected to be in the sample. The stratified random sampling technique was employed to ensure that all non-financial sectors of NSE were represented in the study and the Yamane (1967) sample size determination formula was employed as follows:

$$n = N / 1 + (Ne^2) \tag{1}$$

Where: n = sample size, N = population size and e = error term = 0.05 confidence level. Hence sample size (n) = 46 / 1 + (46*0.052) = 41 companies.

The study employed secondary data gathered from annual audited financial statements for five years from 2013-2017. The information gathered from the financial statements include; long term debt, total debt, equity, total assets, number of outstanding ordinary shares, revenue and operating expenses. The financial statements were sourced out from the Capital markets authority and the companies' official websites.

Liquidity can be measured using current ratio, liquidity or quick or acid test ratio while solvency is measured using debt equity, debt to asset, times interest earned and similar financial ratios (Surbhi, 2016; Khidmat and Rehman, 2014). In the current research, the liquidity aspect which focuses on the ability of firms to meet their short term obligations on time was measured in terms of the current ratio where current assets is divided by current liabilities. Solvency which is concerned with the firm meeting its long term obligations in the current research was measured using debt assets ratio. Profitability was measured using return on equity and firm size as a control variable was measured using the natural log of total assets. Firm size was controlled for in the current study following the finding that liquidity and solvency have a negative relationship for large and stable firms (Kundid and Marinovic, 2016). Panel data was employed in this study due to the longitudinal and cross sectional nature of the data. The regression model was as follows:

$$PFT_{it} = \beta_0 + \beta_1 SLV_{it} + \beta_2 LIQ_{it} + \beta_3 FSize_{it} + U_{it} + \varepsilon_{it} \quad (2)$$

Where:

PFT_{it} = Profitability measured by ROE ratio of firm_i at time t, β_0 = Constant term

β_1 , β_2 and β_3 = Regression Coefficients of variables of firm_i at time t,

SLV_{it} = Solvency of firm_i at time t, measured using total liabilities / total assets

LIQ_{it} = Liquidity of firm_i at time t, as measured by current assets / current liabilities

$FSize_{it}$ = natural log of total assets of firm_i at time t,, was employed as a control variable

α_i (i=1...n) is the unknown intercept of each company (n entity-specific intercepts),

u_{it} = between entity error and

ε_{it} = within entity error.

Empirical Results

This section presented results on descriptive analysis, diagnostic test findings, correlation analysis findings and panel data regression analysis findings. The descriptive statistics as indicated in Table 1 showed that on average, the firms studied were generating losses with return on equity being 3.1% annually with a standard deviation of 6.1%. On average the firms studied had a solvency ratio of 13.7% with a standard deviation of 4.8%. This implied that total liabilities were minimal compared to the total assets in the Kenyan listed firms. The average liquidity as measured by current ratio of the firms studied was 6.2:1 which was well above the rule of thumb of 2:1 which indicated that Kenyan listed firms had working capital management challenges.

Table 1: Descriptive Statistics Findings

Variable	Obs	Mean	Std.Dev.	Min	Max
Profitability	205	-.121	1.718	-11.99	10.95
Liquidity Ratio	164	-.154	1.217	-8.79	7.1
Solvency Ratio	205	.838	1.489	-.076	17.416
Firm Size	205	16.13	2.102	12.163	22.075

Source: Author, 2020

None of the variables had multicollinearity problem as their correlation coefficients were below 0.8 level as per Table 2 (Hair et al., 2014).

Table 2: Correlation Matrix Test Findings

	Firm size	Solvency	Liquidity
Firm size	1		
Solvency	-0.016	1	
Liquidity	-.361**	-.163*	1

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

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

Source: Author, 2020

The Null Hypothesis 1 that solvency and liquidity lacked a significant relationship in Kenyan listed firms was rejected as per the findings in Table 2 which indicated a significant correlation coefficient of -0.163 between liquidity and solvency. This findings agreed with those of Kundid and Marinovic (2016); Heejung (2016) and Mosab and Hassan (2017). The trade-off theory was also supported by the current research findings that liquidity and solvency are negatively and significantly associated.

The data when tested for stability by employing Levin, Lin & Chu t, ADF - Fisher Chi-square and PP - Fisher Chi-square tests indicated that it was stable with p-values being significant at 5% level and thus rejecting the null hypothesis that there is a unit root problem in the data as indicated in Table 3.

Table 3: Unit Root (Stationarity) Test Findings

	Unit Root Tests	P-value
Profitability	Levin, Lin & Chu t*	0.000
	ADF - Fisher Chi-square	0.004
	PP - Fisher Chi-square	0.000
Solvency	Levin, Lin & Chu t*	0.000
	ADF - Fisher Chi-square	0.001
	PP - Fisher Chi-square	0.000
Liquidity	Levin, Lin & Chu t*	0.000
	ADF - Fisher Chi-square	0.000
	PP - Fisher Chi-square	0.000
Firm Size	Levin, Lin & Chu t*	0.000
	ADF - Fisher Chi-square	0.000
	PP - Fisher Chi-square	0.000

Source: Author, 2020

The stability of the data implied that it was suitable for panel data regression analysis (Hair et al., 2014). As per the autocorrelation test findings displayed in Table 4, the data did not exhibit serial correlation problem with the null hypothesis of no serial correlation in the data not being rejected since the p-value of 0.2087 was not significant.

Table 4: Wooldridge Autocorrelation Test findings

	Coef.
H0: no first-order autocorrelation	
F(1, 40) =	1.633
Prob > F =	0.2087

Source: Author, 2020

Before reporting panel data regression findings it was necessary to establish the appropriate regression model between fixed effects and random effects models using the Hausman test whose results revealed a p-value of 0.01 being significant at 5% level as per Table 5.

Table 5: Hausman Test Findings

	Coef.
Chi-square test value	11.362
P-value	0.01

Source: Author, 2020

The Hausman test findings implied that the null hypothesis that random effects model was not appropriate for panel regression analysis and thus the fixed effects model was employed in regression analysis.

As per the fixed effects panel regression analysis model in Table 5 the determinants of liquidity and solvency did not significantly influence the profitability since they had insignificant t-statistics of -0.116 and -0.162 respectively. The firm size as a control variable also lacked significant effect on profitability and had an insignificant t-statistic of -0.67 as per Table 6. The null hypotheses that default metrics of liquidity and solvency lacked a significant relationship with profitability in Kenyan listed companies was not rejected.

Table 6: Fixed Effects Regression Model

	ROE
Liquidity Ratio	0.054 (-0.116)
Solvency Ratio	0.12 (-0.162)
Firm size	-0.46 (-0.67)
_cons	7.226 -10.974
Obs.	164
Pseudo R2	.z

Source: Author, 2020

The R square was also found to be very weak with a value of 0.43% which implied that the regression model was a weak prediction model (Hair et al., 2014). The current research findings agreed with those of Kyule (2015); Mburu (2015) both in Kenya and Nireesh (2012) in Sri Lanka who also found that liquidity and solvency lacked significant effect on profitability. The lack of a significant relationship between solvency, liquidity and profitability was also explained by the shiftability theory by Harold Moulton (1915) that saw no reason for firms to maintain high liquidity levels if they have a good and stable relationship with financial institutions that can intervene when liquidity needs arise. The regression findings on Table 6 also revealed that firm size as a control variable lacked significant effect on profitability which contradicted the findings of Kundid and

Marinovic (2016) who found that firm size significantly affects profitability but in financial institutions which was not the focus of the current study.

Conclusions

The overall findings indicated that liquidity and solvency are significantly and negatively associated. The effect of liquidity, solvency as measures of default on profitability in Kenyan listed firms during years 2013 to 2018 was not significant most likely due to the ability of the firms to raise cash easily when needed by converting non-cash assets into cash as advocated for by the shiftability theory. These findings imply that firm management and regulators should not over worry about low liquidity levels in firms if they have assets that can be readily converted into cash when needed or if they have good relationships with financial institutions that are ready to support them at the time of liquidity shortage.

The current study was limited to only non-financial listed firms and hence excluded financial in the banking and insurance industries. The current study also excluded small and medium sized firms by studying listed firms with were large sized. By concentrating on 5 year period between years 2013 and 2018 which was intermediate, the study ignored long-term effects of the relationships. The current study employed only secondary data and omitted the effects of perceptions of stakeholders regarding the research. These omissions can be researched upon in the future by prospective scholars.

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