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## Financial Risk Hedging Practices and Firm Value of Non-Financial Firms Listed at Nairobi Securities Exchange

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### **Abstract:**

*This study sought to examine the effect of financial risk hedging practices on firm value of listed Non-financial firms in Kenya. The business environment has become very volatile as firms sell their products internationally. Due to dropped earning, share prices of firms have dropped significantly as a result of financial issues faced thereby risking the wealth of their investors. Companies in the Non-financial sector have had to restructure their debt due to financial difficulties they are facing. These financial difficulties are because of the risks involved in carrying out their businesses. The study was guided by the following objectives: To assess the effect of credit risk hedging practice, market risk hedging practice, liquidity risk hedging practice and the moderating effect of firm size on firm's value of listed Non-financial firms in Kenya. The study's target population was the listed Non-financial firms. Secondary data was extracted from published annual reports of these firms for the last five years 2015-2019 and primary data gathered using questionnaires administered to the CFOs to establish strategies used by the firms. Both descriptive and inferential statistics were used and findings be presented using tables accompanied with the respective explanations. The study concludes that market risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Additionally, the study concludes that credit risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Further, the study concludes that liquidity risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. The study also concludes that financial risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. From the results, this study recommends that the management of listed non-financial firms should formulate and implement better strategies for making sure marketplace evaluation and decrease marketplace associated risks. Further, the management of listed non-financial firms should formulate and implement better strategies for preventing risk related to credit extended to customers. This can be ensured through taking insurance cover.*

**Keywords:** Firm value, credit risk, market risk, liquidity risk, financing risk, earnings per share and non-financial firms

### **1. Introduction**

The environment that majority of businesses perform their activities is highly changing and not certain. The volatile business environment has come up due to globalization as businesses sell their products in the global market place. In particular service firms are realizing they are exposed to a number of business risks that is becoming a threat to their long-term survival. In most cases, many of the business risk are a result of business practices that have failed and not supportive to business operations (Askari&Krichene, 2017).

In the global stage, derivatives markets have developed to provide specific derivatives to handle business risks that cannot be diversified. As a result, products such as futures, swaps, options and forwards have been developed to help businesses with international operations extensively hedge against risk associated with international operations as well as domestic activities just as the listed Non-financial firms are exposed to price variability and forex risks that threaten their activities (Armstrong &Ndiaye, 2011).

The function of financial risk management is very crucial for Non-financial firms in Kenya especially those that have a lot of their transactions dominated in foreign currencies due to export of finished products or import of raw materials and other supplies for their operations. In addition, the management of the firms must come up basic accepted financial risk management processes recognized in the process of identifying, analyzing, measuring, and stating the level of risk that may be tolerated or transferred by a firm (Askari&Krichene, 2014).

According to Minnit, Goodwin, and Stacey (2007) the mining industry in South Africa risk arises as a result of unsuccessful exploration, price volatility and cost of production makes the use of derivatives like fixed forward exchange rates and interest rate swaps vital as techniques for hedging. The use of such instruments has contributed greatly to stabilization of firms in the industry which would have otherwise shutdown. Soyemi, (2014) on the risk management

practices and financial performance: evidence from the Nigerian deposit money banks in the 2012 financial year, found that the explanatory variables significantly accounted for variations in the financial performance.

According to the Central Bank of Kenya (2015) Kenya has in the recent past experienced one among the worst inflation instances since independence. To mitigate the effect of those risks Kenyan firms use a variety of hedging practices. Wanja (2005) found that Kenyan firms use futures, swaps, options and forward contracts to hedge against interest rate risk. However, firms in Kenya are hampered by institution policies and market trading platform technology (Otsyula, 2014). The effect of hedging on firm's performance in Kenyan context is not clear. According to CBK (2017) non-financial listed companies at the NSE have taken up more debt for financing as it can be seen from the balance sheets. There has been an increase in the debt to equity ratio since 2015 which in turn reduces the borrowing capacity on these firms, putting them at risk.

### *1.1. Statement of the Problem*

According to (CBK, 2017) non-financial listed companies at the NSE have taken up more debt financing as it can be seen from their financial statements. There has been an increase in the debt to equity ratio since 2015 which in turn reduces the borrowing capacity on these firms, putting them at risk. Majority of these firms are large borrowers, when the management of a company increases their debt capacity then it in turn leads to an increase in the risk factor if they do not get returns as anticipated. Default in debt repayment can lead to a company being liquidated or becoming bankrupt (CBK, 2017)

Non-financial firms in particular have been facing the major problem of how best to control financial risks which has been blamed to erode the value of the firm in global studies. In 2015, Kenya Airways and Uchumi Supermarkets reported 25.7 billion shillings and 262.3million shillings losses respectively which were linked to lack of proper hedging practices (Kiio, 2017). In 2017 Deacons EA shut down four of it's stored in Kenya barely a month after it sold off its eleven Mr. Price Kenya Shops due to uncertainties like sales, performance and consumer spending habits.

Fauver and Naranjo (2010) in a study done on use of derivatives and firm value in the journal of corporate finance postulates that hedging does not necessarily have a positive association with performance or value of the firm. Dhanani, Stevenson Hellia and Fifield, (2007) reviewed reasons why UK companies hedge against interest rate risk determined that hedging does not necessarily have a positive association with performance or value of the firm but depends on a country, industry and corporate governance of the company, but failed to look at Non-financial sector.

Studies done on hedging practices by firms in Kenya Njuguna, Gakure, Waititu&Katuse, (2013) acknowledged that hedging had positive effect on the growth of microfinance sector. They however did not check out the Non-financial sector. Mugenda, Momanyi and Naibei, (2012) established lack of financial derivatives in the risk hedging activities and cited that management felt other tools including insurance could address risk management in Kenyan firms.

Majority of the studies done in Kenya on the effect of risk hedging on firm value has been under banks and other financial firms. The current study therefore sought to establish the effect of financial risk hedging practices on the value of Non-financial firms listed at the NSE in Kenya.

### *1.2. Objectives of the Study*

This study sought to examine the effect of financial risk hedging practices on firm value of listed Non-financial firms in Kenya.

The specific objectives were:

- To examine the effect of market risk hedging practice on firm value of listed Non-financial firms in Kenya.
- To establish the effect of credit risk hedging practice on firm value of listed Non-financial firms in Kenya.
- To identify the effect of liquidity risk hedging practice on firm value of listed Non-financial firms in Kenya.
- To analyze the effect of financing risk hedging practice on firm value of listed Non-financial firms in Kenya.

## **2. Empirical Review**

### *2.1. Market Risk Hedging Practice and Firm Value*

A study by Carter et. al., (2006) on effect of commodity price hedging by American airline companies showed that hedging with reference to oil prices in the airlines industry is positively related to firm value and the hedging premium reaches over 5%. The authors found evidence that the greatest benefit of hedging in this sector would be the reduction in underinvestment costs because the fuel price is highly correlated to the investment opportunities in the sector. The study also showed that firms can survive from following appropriate hedging strategies where the 'intensity' of hedging is positively related to the firm value.

Gachua (2011) looked at how foreign exchange rate exposure affected overall financial results of firms in Kenya. The study applied secondary data for the ten years (2001-2010) which was analyzed using correlation and regression analysis. The findings indicate that different exchange rate risk management strategies were applied to help improve the performance of the organization.

Chen (2016) carried an investigation of foreign exchange management practices and financial performance of Chinese owned enterprises operating in Kenya. Data was collected on 41 Chinese enterprises operating in Kenya. The study found out that management practices under transaction exposure had a positive effect on the financial performance (ROA) of the enterprises. Conversely, economic exposure management practices had a negative influence on performance (both on ROA and Net profit). No relationship was found between translation exposure practices, policy and regulatory

requirements and financial performance. The study suggested a comparative relook on the foreign risk management practices between locally owned multinationals and their foreign counterpart's practices.

## *2.2. Credit Risk Hedging Practice and Firm Value*

A study by Alshatti (2015) analyzed the influence of credit risk management on the financial performance of commercial banks. The study employed causal effect research design, sourced secondary data from CBK publications and annual reports. OLS regression analysis was employed to analyze the findings. It was determined that asset quality, capital adequacy, liquidity and management efficiency liquidity had a weak association with financial performance. Additionally the study noted strong relationship between earnings and financial performance.

Otsyula (2014) investigated demanding situations going through the usage of financial derivatives in hedging interest rate risk by commercial banks in Kenya. The study investigated five commercial banks two big banks, one medium and two small banks as per Central Bank of Kenya commercial banks classification. According to the outcomes from the effort by commercial banks in Kenya to appoint the use of derivatives for purposes of hedging against interest rate risk, are mainly hampered by the financial institution policy and market trading platform technology. Though the Central Bank of Kenya has adequate structures at hand to hedge interest rate risk using derivatives among commercial banks in Kenya, the banks' financial institution policies and trading platforms hampered the hedging interest rate risk using financial derivatives.

Ericson for example, lost 400 million euros after their supplier's semiconductor plant caught on fire in Albuquerque, New Mexico back in 2000. Despite the fire just lasting for 10 minutes, millions of chips that were being stored had been contaminated and hence rendered useless. This caused a massive blow for Ericson in the cell phone market and caused it to lose significant ground against major rivals like Nokia. This was obviously followed by a poor financial performance and a great drop share prices Mukhrjee and A. S (2008).

## *2.3. Liquidity Risk Hedging Practice and Firm Value*

Liquidity risk is a type of risk that a business faces when it finds itself not able to solicit enough financial resources to meet its daily commitments in relation to financial instruments. Study by Sheikhdon & Kavale (2016) examined factors of Liquidity management in influencing financial performance of commercial banks in Somalia. The study employed descriptive survey design with a sample of 87 bank employees from the targeted 112. The study established that drivers of liquidity had a positive association with commercial banks financial performance.

Ngira, Oluoch&Kalui (2015) analyzed the influence of management of liquidity on the financial performance of firms listed NSE. The study adopted a Census on all companies listed in NSE 2008 to 2013. The study used simple OLS model to analyze the data inferentially. It was established that there was significant difference in market performance of liquid companies in comparison to illiquid firms. The function of liquidity management was quick ratio. Additionally, research showed that management of liquidity had an influence on returns in the market while for firms that were not liquid the influence was not statistically significant. Further liquid firms posted statistically significant excess returns compared to illiquid firms. The study however failed to examine the effect of the same on firm's value of listed Non-financial firms hence this is a gap to be filled by this study.

Salim & Bilal (2016) examined the liquidity position of Omani banks and how it affects their financial performance. The study used a sample of four domestic commercial banks for the study period of five years beginning 2010 to 2014. Data was extracted from the published financial statement of the banks and recorded on data collection sheets. The inferential data analysis proceeded with using multiple regression analysis. Study results showed that the relationship between liquidity and financial performance was not statistically significant. The study however relied on examining effect of liquidity on financial performance rather than firm's value which is a concern for the current study.

## *2.4. Financing Risk Hedging and Firm Value*

Brodsky (2010) noted that participants within the stock market utilized stock futures and options in respect to their portfolio strategies. The researcher however acknowledged that futures stock market compared thereto of other financial derivatives such as interest rate also stock index futures and options led to positive growth and liquidity of underlying stock market. Though the study focused on two financial derivatives, it does show a relationship between equity hedging practices and firm performance.

Joseph & Jagongo (2017) on the effects of Financial Risk Hedging Practices and Performance of Firms found out that a positive relationship between hedging practices, the moderator (central bank controls) and dependent variable performance of listed firms. Data was collected from the firm's financial statements for the last five years 2011-2015. The study recommended that firms in the stock exchange could employ other risk mitigation instruments like exchange-traded funds, insurance, collateralized debt obligations and credit default swaps.

Crawford and Seidel (2013) observe that some companies use insurance as a means of transferring risks associated with extreme events. They caution that companies must balance the costs of insurance, which are likely to increase over time with more frequent extreme events, with the costs of taking action to reduce premiums and the potential for damages from such events. Lesourd and Schilizzi (2009) contend that removing a significant part of these risks and/or making them insurable will at least partially free up the firm from that hitherto latent or hidden financial burden, making some capital resources available for profitable ends going towards the firm's objectives, such as investment in new products or new technologies, and generally, making a more efficient use of the firm's capital assets.

Afza&Nazir (2007) investigated the relationship between the aggressive/conservative working capital policies for seventeen industrial groups and a large sample of 263 public limited companies listed at Karachi Stock Exchange for a

period of 1998-2003. The study found significant differences among their working capital investment and financing policies across different industries. Moreover, rank order correlation confirmed that these significant differences were remarkably stable over the period of six years of study.

### 3. Research Methodology

The study adopted a descriptive survey design in which the study was concerned with learning why one variable resulted in changes in another and essentially tried to explain the relationship amongst variables. The target population in this study was 52 and the unit of observation was 47 respondents from of CFOs of the listed companies in the Non-financial sector at the NSE, Kenya. Questionnaires were administered to the CFOs of the firms to determine the practices used to hedge against risk. Secondary data from firms annual reports from the last five years was collected on the study variable EPS.

Statistical Model- Multi-Linear Regression

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y presents value of firms, the dependent variable

$\beta_0$  is the value of Y when all of the independent variables ( $X_1$  through  $X_4$ ) are equal to zero

$X_1$  = Market risk hedging practices

$X_2$  = Credit risk hedging practices

$X_3$  = Liquidity risk hedging practices

$X_4$  = Financing risk hedging practices

$\beta_1$ ,  $\beta_2$ , and  $\beta_3$  = regression coefficients representing the change in Y relative to a one unit change in the respective independent variable

$\varepsilon$  = regression error term.

### 4. Results and Discussion

#### 4.1. Response Rate

Out of 47 questionnaires which were distributed, 34 were duly filled and returned. The drop-off and pick-up-later method yielded a response rate of 72.3%.

#### 4.2. Diagnostic Tests

##### 4.2.1. Test for Normality

Shapiro-Wilk test was used to test the normality of data. Null hypothesis in Shapiro-Wilk test indicate that variables data are obtained from a normally distributed population. Therefore, the p-value should be greater than the significant level of 0.05.

	Statistic	df	Sig.
Firm value	.802	34	.068
Market risk hedging practice	.909	34	.108
Credit risk hedging practice	.920	34	.079
Liquidity risk hedging practice	.911	34	.101
Financing risk hedging practice	.815	34	.081

Table 1

##### 4.2.2. Autocorrelation Test

Durbin-Watson statistic was used to test autocorrelation. The general principle in Durbin-Watson statistic is that values which range from 1.5 to 2.5 tend to indicate there is non- autocorrelation in a particular data.

Model	Durbin-Watson
1	1.887

Table 2

##### 4.2.3. Multi-collinearity Test

Multi-collinearity is used to determine the probability that independent variables (which are equal or greater than 2) in a particular multivariate regression model are highly or significantly correlated. This would mean that one variable can be predicted from the other (Singparwalla, 2013). The study adopted the use of Variance Inflation Factor (VIF) so as to measure the level of correlation among the variables. The general principle is that VIF which is greater than ten (10) tend to warrant further investigation. The VIF indicates that multicollinearity was absent among the independent variables, since the VIF values were below 6 which is the acceptable threshold below which indicates absence of multicollinearity.

	<b>Tolerance</b>	<b>VIF</b>
Market risk hedging practice	.778	1.332
Credit risk hedging practice	.646	1.678
Liquidity risk hedging practice	.696	1.486
Financing risk hedging practice	.654	1.497

Table 3

#### 4.2.4. Heteroscedasticity and Homoscedasticity Test

Violation of homoscedasticity tends to inhibit critical evaluation of forecast errors of standard deviation, which often leads to confidence intervals which are extremely narrow or extremely wide. Heteroscedasticity in this study was calculated by the use of Breusch-Pagan test. The null hypothesis for this test was that the error variances were equal and were a multiple function of variables. Homoscedasticity normally occurs when the p-value is greater than the significance level (0.05) (Bryman & Cramer, 2012). With regard to the results presented in Table 4.5, the significance level (0.05) was less than the p-value (0.672) hence there was no violation of the homoscedasticity principle in the data.

<b>Ho: Constant variance</b>	
Chi2 (1)	0.60
Prob>chi2	0.672

Table 4

### 4.3. Descriptive Statistics

#### 4.3.1. Market Risk Hedging Practice and Firm Value of Listed Non-Financial Firms

The respondents were requested to indicate their level of agreement on various statements relating to market risk hedging practice and firm value of listed Non-financial firms in Kenya.

The respondents agreed that their organization uses leading and lagging of receipts and payments (M= 3.986, SD=0.924). In addition, the respondents agreed that their company ensures commodity price risk management (M= 3.897, SD=0.982). Further, the respondents agreed that the firm has implemented various market risk hedging techniques (M= 3.876, SD=0.897). The respondents also agreed that their company ensures offsetting of operating cash flows (M= 3.871, SD=0.724).

As shown in the results, the respondents agreed that their organization has adopted currency invoicing (M= 3.764, SD=0.953). Further, the respondents agreed that the operational techniques implemented by the firm shields it from risk (M= 3.674, SD=0.756). The respondents also agreed that they are satisfied with the market risk hedging practices adopted (M= 3.654, SD=0.787).

These findings are supported by studies e.g., Carter et al (2006); Lookman (2004) that found out underinvestment and employment of agency as some of practices considered in minimization of commodity price risk hedging practices. The study also showed that firms can survive from following appropriate hedging strategies where the 'intensity' of hedging is positively associated with the firm value.

#### 4.3.2. Market Risk Hedging Practice

	<b>Mean</b>	<b>Std. Dev</b>
Our firm has implemented various market risk hedging techniques	3.876	0.897
The operational techniques implemented by the firm shields it from risk	3.674	0.756
The organization has adopted currency invoicing	3.764	0.953
Our organization uses leading and lagging of receipts and payments	3.986	0.924
Am satisfied with the market risk hedging practices adopted	3.654	0.787
Our company ensures offsetting of operating cash flows	3.871	0.724
Our company ensures Commodity Price Risk Management	3.897	0.982
Aggregate	3.826	0.858

Table 5

#### 4.3.3. Credit Risk Hedging Practice and Firm Value of Listed Non-Financial Firms

The second specific objective of the study was to examine the effect of Credit Risk Hedging Practice on firm value of listed Non-financial firms in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to Credit Risk Hedging Practice and firm value of listed Non-financial firms in Kenya.

The respondents agreed that monitoring and evaluation is conducted on a regular basis (M= 3.982, SD=0.987). In addition, the respondents agreed that credit risk management has led to effectiveness of business operations (M= 3.867, SD=0.673). Further, the respondents agreed that credit risk hedging practices influence organization performance (M= 3.787, SD=0.871).

As shown in the results, the respondents agreed that they are satisfied with the level of credit risk management in our organization (M= 3.787, SD=0.883). Further, the respondents agreed that their company has adopted credit risk management practices (M= 3.786, SD=0.939). The respondents also agreed that their company has formulated risk

identification strategies ( $M= 3.676$ ,  $SD=0.893$ ). Further, the respondents agreed that credit risk management purposes on ensuring efficiency of the business activities and the continuity of the business ( $M= 3.598$ ,  $SD=0.793$ ).

The study results showed strong association between financial performance of SACCOs and credit monitoring. Study by Alshatti (2015) analyzed the influence of credit risk management on the financial performance of commercial banks. Variables. The findings showed asset quality had weak association with financial performance.

#### 4.3.4. Credit Risk Hedging Practice

	Mean	Std. Dev
Our company has adopted credit risk management practices	3.786	0.939
Am satisfied with the level of credit risk management in our organization	3.787	0.883
Credit risk management has led to effectiveness of business operations	3.867	0.673
Our company has formulated risk identification strategies	3.676	0.893
Monitoring and evaluation is conducted on a regular basis	3.982	0.987
Credit risk management purposes on ensuring efficiency of the business activities and the continuity of the business	3.598	0.793
Credit risk hedging practices influence organization performance	3.787	0.871
Aggregate	3.811	0.862

Table 6

#### 4.4. Liquidity Risk Hedging Practice and Firm Value of Listed Non-Financial Firms

The third specific objective of the study was to examine the effect of Liquidity Risk Hedging Practice on firm value of listed Non-financial firms in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to Liquidity Risk Hedging Practice and firm value of listed Non-financial firms in Kenya.

The respondents agreed that the company is in a position to settle its bills on time ( $M= 3.976$ ,  $SD=0.824$ ). In addition, the respondents agreed that liquidity management influences organizational performance ( $M= 3.908$ ,  $SD=0.987$ ). Further, the respondents agreed that their company has formulated and implemented liquidity risk management strategies ( $M= 3.886$ ,  $SD=0.986$ ).

As shown in the results, the respondents agreed that efficient liquidity management requires maintaining sufficient cash reserves ( $M= 3.887$ ,  $SD=0.857$ ). Further, the respondents agreed that their company can use its current assets to settle the current liabilities ( $M= 3.869$ ,  $SD=0.676$ ). The respondents also agreed that they are satisfied with the liquidity level of the organization ( $M= 3.882$ ,  $SD=0.953$ ). Further, the respondents agreed that the company is able to run all its operations smoothly, ( $M= 3.798$ ,  $SD=0.723$ ).

Ngira, Oluoch and Kalui (2015) analyzed the influence of management of liquidity on the financial performance of firms listed NSE establishing that there was significant difference in market performance of liquid companies in comparison to illiquid firms listed at NSE. Additionally, research showed that management of liquidity had an influence on returns in the market while for firms that were not liquid the influence was not statistically significant. Further liquid firms posted statistically significant excess returns compared to illiquid firms. The study however failed to examine the effect of the same on firm's value hence this was a gap to be filled by the current study.

##### 4.4.1. Liquidity Risk Hedging Practice

	Mean	Std. Dev
Our company has formulated and implemented liquidity risk management strategies	3.886	0.986
Efficient liquidity management requires maintaining sufficient cash reserves	3.887	0.857
Our company can use its current assets to settle the current liabilities	3.869	0.676
The company is in a position to settle its bills on time	3.976	0.824
Am satisfied with the liquidity level of the organization	3.882	0.953
The company is able to run all its operations smoothly	3.798	0.723
Liquidity management influences organizational performance	3.908	0.987
Aggregate	3.887	0.858

Table 7

#### 4.5. Financing Risk Hedging Practice and Firm Value of Listed Non-Financial Firms

The fourth specific objective of the study was to examine the effect of financing risk hedging practice on firm value of listed Non-financial firms in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to Financing Risk Hedging Practice and firm value of listed Non-financial firms in Kenya. The results were as presented in Table 4.9.

The respondents agreed that their company has formulated and implemented financial risk strategies ( $M= 3.978$ ,  $SD=0.867$ ). In addition, the respondents agreed that financial risk hedging practices influence firm performance ( $M= 3.929$ ,  $SD=0.825$ ). Further, the respondents agreed that their company has established several line of credit ( $M= 3.967$ ,  $SD=0.935$ ). As shown in the results, the respondents agreed that they are satisfied with the level of financial risk management in our company ( $M= 3.876$ ,  $SD=0.712$ ). Further, the respondents agreed that they are satisfied with the financial position of the company ( $M= 3.818$ ,  $SD=0.921$ ). The respondents also agreed that investors are more interest to invest in their firm ( $M= 3.768$ ,  $SD=0.753$ ). In addition, the respondents agreed that the company has taken financial insurance cover ( $M= 3.568$ ,  $SD=0.921$ ). The above results are consistent with Njoroge (2013) also concluded that adoption of better risk management instruments such as insurance policies was key to reducing financial losses within a business organization. Milanova (2013); Brodsky (2010); Pwc (2012) in their study also found out investment portfolio and equity prices to have an impact on equity risk hedging practice.

#### 4.5.1. Financing Risk Hedging Practice

	Mean	Std. Dev
Our company has formulated and implemented financial risk strategies	3.978	0.867
Am satisfied with the level of financial risk management in our company	3.876	0.712
The company has taken financial insurance cover	3.568	0.921
Our company has established several line of credit	3.967	0.935
Am satisfied with the financial position of the company	3.818	0.921
Investors are more interest to invest in our firm	3.768	0.753
Financial risk hedging practices influence firm performance	3.929	0.825
Aggregate	3.843	0.848

Table 8

#### 4.6. Inferential Statistics

##### 4.6.1. Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables and the dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients.

##### 4.6.2. Correlation Coefficients

		Firm Value	M.R.H.P	C.R.H.P	L.R.H.P	F.R.H.P
Firm Value	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	34				
Market Risk Hedging Practice	Pearson Correlation	.832**	1			
	Sig. (2-tailed)	.001				
	N	34	34			
Credit Risk Hedging Practice	Pearson Correlation	.817**	.219	1		
	Sig. (2-tailed)	.002	.065			
	N	34	34	34		
Liquidity Risk Hedging Practice	Pearson Correlation	.840**	.192	.183	1	
	Sig. (2-tailed)	.000	.089	.074		
	N	34	34	34	34	
Financing Risk Hedging Practice	Pearson Correlation	.861**	.316	.199	.269	1
	Sig. (2-tailed)	.001	.069	.081	.064	
	N	34	34	34	34	34
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 9

#### 4.7. Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (market risk hedging practice, credit risk hedging practice, liquidity risk hedging practice and financing risk hedging practice) and the dependent variable (firm value of Non-financial firms listed at the NSE in Kenya)

##### 4.7.1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921	.848	.849	.11288
a. Predictors: (Constant), Market Risk Hedging Practice, Credit Risk Hedging Practice, Liquidity Risk Hedging Practice and Financing Risk Hedging Practice				

Table 10

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.848. This implied that 84.8% of the variation in the dependent variable (firm value of Non-financial firms listed at the NSE in Kenya) could be explained by independent variables (market risk hedging practice, credit risk hedging practice, liquidity risk hedging practice and financing risk hedging practice).

##### 4.7.2. Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
1					
Regression	134.077	4	33.519	54.95	.000 <sup>b</sup>
Residual	1.768	29	.0610		
Total	138.845	33			
a. Dependent Variable: firm value of Non-financial firms listed at the NSE in Kenya					
b. Predictors: (Constant), Market Risk Hedging Practice, Credit Risk Hedging Practice, Liquidity Risk Hedging Practice And Financing Risk Hedging Practice					

Table 11

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 54.95 while the F critical was 2.701. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of market risk hedging practice, credit risk hedging practice, liquidity risk hedging practice and financing risk hedging practice on firm value of Non-financial firms listed at the NSE in Kenya.

##### 4.7.3. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.265	0.065		4.077	0.001
	Market risk hedging practice	0.379	0.098	0.380	3.867	0.001
	Credit risk hedging practice	0.409	0.095	0.410	4.305	0.000
	Liquidity risk hedging practice	0.371	0.098	0.373	3.786	0.002
	Financing risk hedging practice	0.413	0.095	0.414	4.347	0.000
a Dependent Variable: Firm value						

Table 12

The regression model was as follows:

$$Y = 0.265 + 0.379X_1 + 0.409X_2 + 0.371X_3 + 0.413X_4 + \varepsilon$$

From the results, market risk hedging practice has a significant effect on firm value of Non-financial firms listed at the NSE in Kenya ( $\beta_1=0.379$ , p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings are in line with the findings of Runo (2013) who indicated that there is a very strong relationship between market risk hedging practice and firm value of Non-financial firms.

In addition, the study findings revealed that credit risk hedging practice has a significant effect on firm value of Non-financial firms listed at the NSE in Kenya ( $\beta_1=0.409$ , p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings are in line with the findings of Chen (2016) who



indicated that there is a very strong relationship between credit risk hedging practice and firm value of Non-financial firms.

Further, the study found that liquidity risk hedging practice has a significant effect on firm value of Non-financial firms listed at the NSE in Kenya ( $\beta_1=0.371$ ,  $p$  value= 0.002). The relationship was considered significant since the  $p$  value 0.002 was less than the significant level of 0.05. The findings are in line with the findings of Githinji (2016) who indicated that there is a very strong relationship between liquidity risk hedging practice and firm value of Non-financial firms. The study also revealed that financing risk hedging practice has a significant effect on firm value of Non-financial firms listed at the NSE in Kenya ( $\beta_1=0.413$ ,  $p$  value= 0.000). The relationship was considered significant since the  $p$  value 0.000 was less than the significant level of 0.05. The findings are in line with the findings of Joseph & Jagongo (2017) who indicated that there is a very strong relationship between financing risk hedging practice and firm value of Non-financial firms.

## 5. Conclusions and Commendations

The study concludes that market risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Findings revealed that market risk hedging practice (netting, futures & forwards and options) influence the firm value of listed Non-financial firms in Kenya.

In addition, the study concludes that credit risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Findings revealed that credit risk hedging practice (credit monitoring, credit derivatives and credit insurance) influence the firm value of listed Non-financial firms in Kenya.

Further, the study concludes that liquidity risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Findings revealed that liquidity risk hedging practice (debt equity mix management, working capital management and liquidity insurance) influence the firm value of listed Non-financial firms in Kenya.

The study also concludes that financial risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. Findings revealed that financial risk hedging practice (leverage buyout, lines of Credit and insurance) influence the firm value of listed Non-financial firms in Kenya.

### 5.1. Recommendations

The study findings revealed that market risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. This study therefore recommends that the management of listed non-financial firms should formulate and implement better strategies for ensuring market analysis and reduce market related risks. In addition, the study findings revealed that credit risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. This study therefore recommends that the management of listed non-financial firms should formulate and implement better strategies for preventing risk related to credit extended to customers. This can be ensured through taking insurance cover

Further, the study findings revealed that liquidity risk hedging practice has a positive and significant effect on the firm value of listed Non-financial firms in Kenya. This study therefore recommends that the management of listed non-financial firms should formulate and implement better strategies for preventing liquidity related risks.

The study also revealed that financial risk hedging practices have a positive and significant effect on the firm value of listed Non-financial firms in Kenya. This study therefore recommends that the management of listed non-financial firms should formulate and implement better strategies for preventing these risks.

### 5.2. Policy Recommendation

Risk evolves from time to time and companies need to create suitable steps to regularly evaluate company risks and decide whether to take on the risks individually or with another party, transfer the risk or avoid the risk all together. This is the only way that firms can remain competitive in today's business environment. The study also recommends that the regulatory authorities establish policies laws that take note of the risks that company take and provide them with certain incentives on the bourse.

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