

Long Run Impact of Mergers and Acquisitions Activities on Acquirer's Return of Firms Listed in Eastern Africa Securities Markets

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Abstract:- This study investigated the impact of mergers and acquisitions activities of acquiring firm return in the long run on firms listed in Eastern Africa Securities Markets. The final sample comprised of twenty five (25) completed mergers and acquisitions firms publicly trading in Eastern Africa securities markets merging with or acquiring either a private or a public target firm for the period between 1998 to 2015. Carhart four factor model was used to compute long run cumulative abnormal return. The findings of the study were insignificant. Consequently, the null hypothesis was not rejected, leading to the conclusion that, in the long run, M&A activities do not generate significant returns to acquiring firms listed on Eastern Africa securities markets. The findings of this study resonates with majority of the existing studies.

Keywords:- Mergers and acquisitions, Carhart four factor model, long run return.

I. INTRODUCTION

In the light of challenging economic conditions coupled with an ever changing business environment, corporations must explore and pursue strategies that guarantees them business continuity and relevance in the face of adversary. Globally, firms have employed mergers and acquisitions strategies in a large way for past four decades since first merger wave of 1904. This reality can be well illustrated by significant changes observed in the rank of leading firms over time in many securities markets across the world. Most firms are eliminated either through merger, acquisitions and consolidations, fortunately as the jungle law takes effect new firms are emerging. The composition of the 500 largest U.S firms has changed severally since its inception in 1955. Recent data indicate that only 14% of the company that made up the original Fortune 500 can be found on the list today. This point out that mergers and acquisitions strategies remains a crucial tool used by corporations navigate in an evolving market conditions (Kariuki, Muturi and Kiragu, 2016; Eurelich, Kopp and Fligge; 2022).

In Eastern African region has not been left behind. The region has exhibited a remarkable resilience in mergers and acquisitions fronts in the face of challenging economic condition impact of Covid 19 pandemic. Report show

mergers and acquisitions activities trend within the Eastern Africa have increased overtime with some sectors reporting substantial activities compared to others. The sector that have reported most mergers and acquisitions are telecommunications, financial service sector and agribusiness Sector (KPMG, 2023). The discussion around whether mergers and acquisitions activities create value to the shareholders is far from conclusion. Given the positive report on mergers and acquisitions activities in the Eastern Africa region, the question on whether these investment strategies create value to the shareholders is complex especially when one considers that the sole fact that mergers are pursued with an aim of creating synergies.

Quite a number studies have been conducted to study the impact of mergers and acquisitions in the short run. There has been a unanimous conclusion in literature that overall mergers and acquisition activities creates value for the target firm. (Yaghoubi, Yaghoubi, Locke, and Gibb: 2016). Normally, acquirer firms induce target firm shareholders to sell of their shares to them offering them premium offers incentives. Contrary to this existing research work on impact of mergers and acquisitions in the short run on the acquirer's firm exhibits mixed evidence with most studies documenting mergers and acquisitions activities destroy acquirers' shareholders value or at best offer them insignificant returns (Andred Mitchell and Stafford, 2004; Masulis, wang and Xie, 2007; Alexandris, Petmezas and Travos, 2013; Mateev and Andonov, 2016). Few studies however, have documented that mergers and acquisitions activities creates value to the shareholders (Francis, Hasan and Sun; 2008; Rani, Yadav and Jain, 2015). Of important to note is that these observations on short run impact of M&A activities on the acquirer firm has been consistent throughout the M&A waves.

Long term impact of M&A activities on the acquirer firm performance has been widely studied in the developed markets particularly U.S. Europe and Canada. Evidence documented in the extant studies suggest that in the long term acquirer firm report either negative or insignificant returns following M&A deals Mitchell and Strafford (2000) Draper and Paudyal, 2006) Dutta and Jog's (2009). Similarly, the few studies done in developing countries report poor financial performance the acquirer firm in the long term. Kyriazis (2010) examined long term performance of Greek acquiring firm using fama and French three factor model for

a period of three years. Evidence indicated that Greek acquiring firm experienced negative return three consistently following M&A deals. In a different study, Zaremba, Szyszka, Plotnicki, Grobelny (2018) present contradicting results on long term performance of acquiring firms in developing countries. Their study did not find evidence in support of underperformance of acquirer's firm.

In conclusion, Triki and Chun (2011) examined the longterm performance of US acquirers of target firms in Africa. The findings of the study showed that US acquirers did not benefit from these transactions. Given the widely documented evidence that mergers and acquisitions deals have a negatively impact acquirer return in the long term there is need to conduct an extensive study using a totally different out-of-sample data different from what has been in most mergers and acquisition long term performance studies. The study assess the long term impact of mergers and acquisitions on acquiring firm in Eastern Africa securities markets acquiring or merging with targets firms in the region. This study intends to fill this important gap in M&A literature. A comprehensive literature review analysis reveal lack of an indepth study on long term impact of mergers and acquisitions on acquirer firms within Eastern Africa.

➤ Objective of the Study

To determine the Long term impact of mergers and acquisitions activities on acquirer's return of firms listed in Eastern Africa securities markets.

➤ Study Hypothesis

Mergers and acquisition activities have no significant impact on acquirer's return of firms listed in Eastern Africa securities markets.

II. RESEARCH METHODOLOGY

The study utilized a quantitative research design, chosen due to the extended time span of the study variable data. This method is considered suitable for research that incorporates both cross-sectional and longitudinal elements (Gujarat, 2009). The study's target population comprised all firms listed on the securities markets of the three East African countries that engaged in mergers and acquisitions. The study utilized a multi-stage sampling method to determine the final sample (Saunders, Lewis, & Thornhill, 2019). The initial stage involved determining the number of the listed firms involved in mergers and acquisitions. Secondly, the M&A activity must have occurred between year 1998 and 2015. Appendix (1) presents all the listed firms that have been involved in mergers or in acquisitions for the period under study. In addition, all the firms selected must have all the information regarding the operationalization of the variables. Alexandridis, Petmezas and Travos (2010) and Halfar (2011) used multi-stage sampling while studying gains from acquisitions around the world and effect of mergers and acquisition on long run financial performance of acquiring companies in South Africa respectively. The final sample included only the mergers and acquisitions made by firms listed in the security markets in the three Eastern Africa countries including Kenya, Uganda and Tanzania which

merger with or acquired either a public or a private target in the same countries data for the period 1998 through 2015. Issue of confounding effect in the final sample were properly addressed (McWilliams & Siegel, 1997). The final sample comprised of twenty five (25) completed mergers and acquisitions firms publicly trading in Eastern Africa securities markets merging with or acquiring either a private or a public target firm for the period between 1998 through 2015. The base year (1998) coincided with the liberalization of financial service sector in many Eastern Africa countries (Kodongo, Makoteli & Maina, 2014).

The study gathered secondary data from audited annual company reports, central bank publications, and reports from the Capital Markets Authority and the Nairobi Securities Exchange. Data collection was facilitated through a secondary data collection sheet, adhering to established procedures. This process involved accessing the websites of selected listed firms to download their published financial statements for a period of five (5) years before and five (5) years after the event, aligning with the requirements of the long-term study. Most studies on M&A rely secondary data (Moeller, Schlingemann, and Stulz, 2005; Alexandridis *et al.* 2010). Secondary data for the study was collected five years before and five years after the merger or the acquisition activity. Long term return following M&A activity was estimated using Carhart Factor Model (1997). Long run data required by the study for computing return included: annual adjusted closing prices for all firms selected, annual NSE 20 average index, 91 - days (3 months) Government of Kenya treasury bill rate, annual market capitalization for all the firms selected, annual book value of equity for all the firms selected, market to book value of equity for the selected firms and earnings after tax to measure prior firm performance.

A. Carhart Four Factor Model Specification

The Capital Asset Pricing Model (CAPM), developed by Sharpe and Lintner in 1964, continues to be one of the most extensively used asset pricing models six decades after its inception. Its applications include calculating the cost of capital and assessing the performance of managed portfolios, largely owing to its simplicity (Bodie, Kane, & Marcus, 2021). Despite its widespread use, the empirical performance of the CAPM has been unsatisfactory, and debates regarding its validity remain unresolved (Estrada, 2011). To address its limitations, Fama and French (1996) introduced a three-factor model as an alternative. The model is presented in equation one (1). The model posits that the required rate of return is influenced by the market premium, size premium, and value premium. Over time, it has gained widespread acceptance, with finance researchers increasingly using it to assess the long-term stock performance of listed firms and evaluate portfolio performance (Bodie, et al., 2021).

$$E(RP_{it}) = Rf_t + \beta_i (Rm_t - Rf_t) + \beta_s(SMB) + \beta_h(HML)(1)$$

Where $E(RP_{it})$ measures the expected return on asset i during period t . $(Rm_t - Rf_t)$ measures market premium while SMB and HML measure size premium and the book-to-market premium respectively. β_i , β_s , and β_h measure the factor

sensitivities for market premium, size premium and book-to-market premium respectively. Carhart (1997), in his study on the persistence of stock returns in U.S. mutual funds, extended the Fama and French Three-Factor Model by incorporating an additional factor—the momentum factor.

$$E(RP_{it}) = Rf_t + \beta_i(Rm_t - Rf_t) + \beta_S(SMB) + \beta_H(HML) + \beta_W(WML) + \varepsilon_{i,t} \dots\dots\dots(2)$$

In this model, $E(RP_{it})$ is the expected return on asset i during period t while $Rm_t - Rf_t$ is the market premium and SMB is size effect premium. Similarly HML is book-to-market premium while WML is the momentum effect premium. $\beta_i, \beta_S, \beta_H$ and β_W are measures of factor sensitivities for market premium, size premium, book-to-market premium and the momentum effect premium respectively. Lastly, $\varepsilon_{i,t}$ represent the error term. Several studies in developed markets have utilized the Fama and French model, along with the Carhart Four-Factor Model, to analyze the long-term performance of firms following mergers or acquisitions (Moeller, Schlingemann, & Stulz, 2005; Arx & Ziegler, 2008; Dutta & Jog, 2009; Fu, Lin, & Officer, 2013; Zaremba & Plotnicki, 2014). A review of existing studies in Eastern Africa reveals that only a limited number of researchers have applied the Fama and French Three-Factor Model to assess long-term performance following merger or acquisition activities.

However, an examination of M&A studies across Africa indicates that the model has been utilized to evaluate long-term abnormal returns in the context of M&A events. This includes studies such as Halfar (2011), who utilized the Control Portfolio Model, based on the Fama and French (1996) framework, to examine the impact of mergers and acquisitions on the long-term financial performance of acquiring companies in South Africa. Similarly, Triki and Chun (2011) applied the Fama and French Three-Factor Model to assess the performance of U.S. acquirers operating in Africa. A review of research on the long-term effects of mergers and acquisitions reveals that the Carhart Four-Factor Model has not been utilized to estimate long-term returns following M&A activities within Eastern Africa. This study seeks to address this gap by employing the Carhart Four-Factor Model to evaluate long-term returns for acquiring firms listed on securities markets in Eastern Africa. This study therefore aims at bridging the gap by using Carhart Four-Factor Model in estimating long term return following M&A for the acquiring firms listed is Eastern Africa securities markets.

To compute the SMB and HML factors, we followed Fama and French (1996) methodology. To compute the size factor (SMB) all the stocks selected were sorted into two groups based on their market capitalizations, for the number of years under study at the end of December of each year. The two groups were the big (B) group and the small (S) group. Market capitalization median was determined; stock above the median market capitalization formed the big group portfolio while stock below the median formed the small group portfolio.

This modification led to the development of the Carhart Four-Factor Model. Carhart's findings indicated that adding the momentum factor significantly enhanced the model's explanatory power. The model is presented in Equation 2.

Secondly, all the firms were ranked independently based on book-to-market ratio and three portfolio groups were formed. The formed portfolios included low (L) book-to-market portfolio group that consisted of 30% with the lowest book-to-market ratio, medium (M) book-to-market portfolio group comprised the 40% with medium book-to-market ratio and high (H) book-to-market portfolio group comprised the 30% with the highest book-to-market ratio. The intersection of the two size groups with the three book-to-market ratio groups formed six (6) portfolios; S/L, S/M, S/H, B/L, B/M, and B/H. SMB portfolio was computed by getting the difference between the average annual returns on the three small stocks portfolio (S/L, S/M and S/H) and the average annual returns on the three big stocks portfolio (B/L, B/M, and B/H) as shown in Equation 4. HML was computed by taking the difference between the average annual returns on the two high book-to-market ratio stocks portfolio (S/H and B/H) and the average annual returns of the two low book-to-market ratio stocks portfolio (S/L and B/L) as presented in Equation 5.

$$SMB = \frac{1}{3}(S/H + S/M + S/L) - \frac{1}{3}(B/H + B/M + B/L) \dots\dots\dots(3)$$

$$HML = \frac{1}{2}(S/H + B/H) - \frac{1}{2}(S/L + B/L) \dots\dots\dots(4)$$

To estimate the WML (Winner minus Loser) variable for each month from Jan of year $t-1$ to December of year $t-1$, stocks were sorted based on size and prior performance. Two portfolio groups were formed namely: Winner (W) portfolio group containing of 50% with stocks with the highest past returns and Loser (L) portfolio (L) which comprised of 50% of the stocks with lowest past returns. The interaction of winners and losers portfolio groups with size portfolios formed four (4) portfolio groups; S/W, B/W, S/L, B/L. WML variable was determined as presented in Equation 6.

$$WML = \frac{1}{2}(S/W + B/W) - \frac{1}{2}(S/L + B/L) \dots\dots\dots(5)$$

III. STUDY FINDINGS AND DISCUSSION

The Carhart Four-Factor Model is an extension of the Fama-French Three-Factor Model, incorporating an additional factor, WML (Momentum), to explain asset returns. In this study, long-term returns were calculated using the Carhart Four-Factor Model, which assumes that returns are influenced by excess market returns, SMB (small-minus-big), HML (high-minus-low), and WML (winner-minus-loser). Descriptive statistics for various portfolio groups based on Carhart factors—market capitalization, book-to-market ratio, and momentum are presented in Table 1. The

findings indicate that 47.6% of the companies were classified as small, while 52.4% were categorized as large based on size under the Carhart return framework. In terms of the book-to-market ratio, approximately one-third of the 25 companies involved in M&A were distributed across the high, medium,

and low categories. Momentum, the fourth factor in the Carhart model, grouped stocks as winners or losers based on their prior security price performance before the M&A event. The results showed that 51.2% of the firms were classified as losers, while 48.8% were identified as winner.

Table 1: Descriptive Statistics for Market Capitalizations Book-to-Market Ratio and Momentum Portfolios

Carhart Factors	Portfolio Groups	Frequency	Percent
Market capitalization	Small	119	47.6
	Big	131	52.4
	Total	250	100
Book to market ratio	High	86	34.4
	Medium	81	32.2
	Low	83	33.2
	Total	250	100
Momentum	Winners	128	51.2
	Losers	122	48.8
	Total	250	100

Descriptive statistics for SMB and HML portfolios are summarized in Tables 2 and 3, respectively. Table 2 reveals that small-stock portfolios had the highest average return, with a mean of 0.15, and the highest monthly return of 3.05 during the study period. The difference between small-stock and big-stock portfolio returns formed the SMB portfolios. SMB portfolios reported a mean return of 0.03, compared to

the market portfolio's mean excess return of -0.01. This indicates that SMB portfolios yielded higher returns but were associated with greater total risk compared to the market portfolio. These findings suggest that, to some extent, the Nairobi Securities Exchange (NSE) provided adequate compensation for investors in small stocks due to the higher risk premium associated with SMB portfolios.

Table 2: Descriptive Statistics for the Returns of Size Sorted Portfolios

Portfolios	Minimum	Maximum	Mean	Std. Deviation
Small	-0.64	3.05	0.15	0.55
Big	-1.01	1.18	0.11	0.40
SMB	-0.97	1.02	0.03	0.59
Rm-rf	-0.46	1.13	-0.01	0.35

The results in Table 3 indicate that high-stock portfolios achieved the highest average return of 0.17, although they also exhibited a relatively high total risk of 0.58. In contrast, low-stock portfolios had a total risk of 0.37. The differences in returns between high, medium, and low-stock portfolios were used to construct the HML portfolios. Compared to

market portfolios, HML portfolios delivered a higher average return of 0.02, albeit with the highest total risk of approximately 0.78. These findings suggest that the securities market provided better compensation to HML stock investors than to market portfolio investors.

Table 3: Descriptive Statistics for the Returns of the Book to Market Sorted Portfolios

Portfolios	Minimum	Maximum	Mean	Std. Deviation
High	-0.75	3.05	0.17	0.58
Medium	-1.01	1.18	0.08	0.46
Low	-0.60	1.48	0.14	0.37
HML	-1.29	1.43	0.02	0.78
Rm-rf	-0.46	1.13	-0.01	0.35

To evaluate the effectiveness of the momentum factor in explaining variations in stock returns, historical returns of all relevant stocks were used to create momentum portfolios. Descriptive statistics for these portfolios are provided in Table 4. The findings reveal that loser portfolios achieved a higher average return compared to winner portfolios. The difference in returns between winner and loser portfolios was

used to construct WML portfolios. These portfolios recorded a mean return of 1.98 and a total risk of 2.63, both significantly higher than those of the market portfolio. This indicates that the Nairobi Securities Exchange (NSE) provided adequate compensation to investors in WML portfolios.

Table 4: Descriptive Statistics for the Returns of Momentum Sorted Portfolios

Portfolios	Minimum	Maximum	Mean	Std. Deviation
Losers	-1.01	3.05	0.18	0.52
Winners	-0.75	1.45	0.08	0.42
WML	-4.03	4.31	1.98	2.63
Rm-rf	-0.46	1.13	-0.01	0.35

Multiple regression analysis was employed to calculate returns for ten portfolios formed by intersecting size with book-to-market ratios and size with the momentum factor. The results, presented in Tables 5 and 6, indicate that the market risk premium ($Rm_t - Rf_t$) is statistically significant at the 5% level for all ten portfolios, contrary to the assumptions of the multifactor model. The model's highest reported R-squared value was 70% for portfolio S/L, while the lowest was 24.9% for portfolio B/W. Additionally, F-statistics indicated that the explanatory power of the Fama-French-Carhart Multi-Factor Model is statistically significant at 1% level of significance for all the ten portfolios.

At the 5% significance level, the size factor (SMB) did not significantly explain variations in M&A returns for the /M, S/H, S/L, B/M and B/L portfolios. Positive coefficients were observed for the S/H and S/L portfolios, while negative coefficients were recorded for the B/M and B/L portfolios; however, all were statistically insignificant. Interestingly, a positive and significant relationship was identified between SMB and M&A returns for the B/H portfolio, suggesting a notable large-firm effect within this group (Malin & Veeraraghavan, 2004). The inability of the size factor to consistently explain variations in M&A returns of stocks across five portfolios indicates that the variable is not a reliable determinant of return variations for stocks listed on the Nairobi Securities Exchange during the study period.

Our findings align with Nwani (2015), who found the size effect to be insignificant in explaining long run return variations when applying the Fama & French–Carhart Multifactor Model in the U.K. Similar conclusions were

drawn by Cakici and Tan (2014). Additionally, at the 5% significance level, the value factor (HML) was also statistically insignificant in explaining M&A long run return variations during the study period. Nevertheless, the expected relationships were observed for the S/L, B/L, S/M, and B/H portfolios. These results contradict the empirical evidence provided by Fama and French (1992, 1996) for the U.S. equity market. However, this does not imply that the model is invalid in Kenya; rather, the Fama & French–Carhart Model is widely applicable across different markets. Empirical studies, such as those by Morelli (2007) and Malin and Veeraraghavan (2004), have demonstrated that the model's value and growth factors are significant in explaining return variations. While the study findings failed to explain the inconsistent results, it is acknowledged that specific forces within our data may have diminished the value and growth effects in explaining return variations.

At the 5% significance level, the momentum factor (WML) did not significantly explain the relationship between the factor and excess returns for the S/W, S/L, and B/W portfolios, indicating its insignificance in explaining stock returns for these categories. However, the WML variable was statistically significant in explaining return variations for the B/L portfolios. This suggests that stocks with large market capitalization offered significant future returns. Consistent with Nwani (2015), we conclude that while the momentum factor effectively explains returns for big market capitalization stocks, it fails to account for returns on small market capitalization returns.

Table 5: Carhart Four Factor Model Regression Results for Size and Value Factors

		Unstandardized Coefficients		Standardized Coefficients		T	Sig.	R	R ²	Adjusted R ²	F	Sig.
		Beta	Std. Error	Beta								
SM	(Constant)	0.03	0.10			0.33	0.75	0.637a	0.41	0.32	4.60	.006b
	Rm-rf	0.66	0.16	0.64		4.19	0.00*					
	SMB	-0.02	0.15	-0.03		-0.15	0.88					
	HML	-0.03	0.13	-0.06		-0.25	0.80					
	WML	0.02	0.03	0.10		0.52	0.61					
SH	(Constant)	0.15	0.07			2.15	0.04	0.736a	0.54	0.51	18.00	.000b
	Rm-rf	1.16	0.14	0.72		8.09	0.00*					
	SMB	0.11	0.11	0.12		0.97	0.34					
	HML	-0.09	0.10	-0.11		-0.83	0.41					
	WML	0.03	0.03	0.15		1.27	0.23					
SL	(Constant)	0.34	0.19			1.81	0.09	0.837b	0.70	0.61	8.20	.001c
	Rm-rf	0.96	0.25	0.61		3.84	0.00*					
	SMB	0.27	0.14	0.32		2.00	0.07					
	HML	-0.10	0.14	-0.13		-0.70	0.49					
	WML	-0.060	0.06	-0.16		-0.94	0.36					
BM	(Constant)	-0.00	0.08			-0.05	0.96	0.598a	0.36	0.30	6.10	.001b

	Rm-rf	0.71	0.16	0.55	4.54	0.00*					
	SMB	-0.04	0.12	-0.06	-0.38	0.71					
	HML	-0.09	0.11	-0.14	-0.77	0.44					
	WML	0.04	0.03	0.23	1.38	0.18					
BH	(Constant)	0.21	0.12		1.75	0.10	0.830a	0.69	0.60	7.70	.002b
	Rm-rf	1.22	0.30	0.63	4.01	0.00*					
	SMB	0.39	0.15	0.45	2.64	0.02*					
	HML	0.05	0.12	0.08	0.40	0.70					
	WML	-0.02	0.04	-0.09	-0.45	0.66					
BL	(Constant)	0.10	0.05		2.08	0.04	0.519a	0.27	0.22	5.40	.001b
	Rm-rf	0.45	0.12	0.44	3.90	0.00*					
	SMB	-0.15	0.08	-0.28	-1.98	0.05					
	HML	-0.06	0.07	-0.13	-0.78	0.44					
	WML	0.02	0.02	0.14	0.94	0.35					

a Dependent Variable: Return.
b Predictors: (Constant), WML, Rm-rf, SMB, HML.
c Predictors: (Constant), WML, SMB, Rm-rf, HML.

Table 6: Carhat Four Factor Model Regression Results for Size and Momentum Factors

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R	R ²	Adjusted R ²	F	Sig.
		B	Std. Error	Beta							
SW	(Constant)	0.085	0.057		1.489	0.143	0.566	0.320	0.267	6.01	0.000
	Rm-rf	0.419	0.103	0.484	4.080	0.000					
	SMB	0.135	0.085	0.240	1.590	0.118					
	HML	-0.008	0.083	-0.019	-0.010	0.921					
	WML	-0.010	0.023	-0.081	-0.450	0.652					
SL	(Constant)	0.010	0.065		0.156	0.877	0.587	0.343	0.298	7.57	.000
	Rm-rf	0.717	0.131	0.596	5.454	0.000					
	SMB	0.101	0.097	0.133	1.035	0.305					
	HML	-0.063	0.08	-0.118	-0.790	0.435					
	WML	0.019	0.022	0.114	0.869	0.388					
BW	(Constant)	0.010	0.059		0.162	0.872	0.49	0.249	0.199	5.05	0.000
	Rm-rf	0.521	0.133	0.435	3.919	0.000					
	SMB	0.094	0.092	0.138	1.024	0.310					
	HML	-0.085	0.084	-0.173	-1.010	0.315					
	WML	0.040	0.023	0.279	1.770	0.081					
BL	(Constant)	0.024	0.045		0.540	0.589	0.589	0.348	0.304	7.99	0.000
	Rm-rf	0.412	0.097	0.446	4.260	0.000					
	SMB	-0.107	0.065	-0.208	-1.640	0.107					
	HML	-0.113	0.064	-0.277	-1.770	0.081					
	WML	0.055	0.017	0.466	3.310	0.002					

Table 6 presents descriptive statistics of impact of M&A activity on returns in the long run; five years before and five years after the M&A. The result shows a mean return of 0.06 five years before M&A and an average return of 0.021 five years after the event. This shows that in the long run M&A

do not improve shareholders' returns for listed firms in Eastern Africa securities market. Post M&A return standard deviation was lower than pre M&A return standard deviation indicating that M&A firms had low risk after the event.

Table 7: Descriptive Statistics for the Pre M&A and Post M&A Long Run Return

Group Statistics					
Return	Type	N	Mean	Std. Deviation	Std. Error Mean
	Pre -M&A Return	125	0.060	0.428	0.038
	Post M&A Return	125	0.021	0.344	0.031

The study also compared the long-term returns before and after M&A activity to determine whether such announcements generate significant returns for shareholders of firms listed on securities markets in Eastern Africa. The

findings are summarized in Table 7. The study hypothesized that M&A activities do not generate significant long-term returns for the acquiring firm shareholders (LAR = 0), against an alternative hypothesis that stated that M&A

announcements generate returns to the acquiring firm's shareholders; that is ($LAR \neq 0$). A test of mean equality revealed no significant difference between pre-M&A and post-M&A long-term returns. The t-value was 0.8, with a p-value of 0.43, indicating statistical insignificance. Consequently, the null hypothesis was not rejected, leading to the conclusion that, in the long term, M&A activities do not generate significant returns to firms involved in mergers and acquisitions listed on Eastern Africa securities markets.

The findings of this study resonates with past studies that have concluded that in the long run acquirer firm report either negative or insignificant returns following M&A deals (Dutta and Jog's, 2009; Triki and Chun, 2011). However, the findings of this study are in contrast with findings of Zaremba, Szyszka, Plotnicki, Grobelny (2018) who failed to find evidence in support of underperformance of acquirer's firm.

Table 8: Significance Test for Pre M&A and Post M&A Long Run Return

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal Variances Assumed	3.65	0.06	0.8	248	0.43	0.04	0.05	-0.06	0.14
Equal Variances Not Assumed			0.8	237	0.43	0.04	0.05	-0.06	0.14

The long-run average abnormal return (LAAR) and long-run cumulative average abnormal return (CLAAR) for M&A firms listed on Eastern Africa securities markets were estimated over a window period of -5 to +5 years, as illustrated in Figure 1. The graph indicates that, on average, shareholders do not realize significant returns following

M&A activity in the long run. This is evident from the decline in LAAR from the fifth year before the M&A to one year prior to the event. Post-M&A returns show no substantial improvement. However, three years after the M&A, the LAAR begins to increase, albeit at a modest rate.

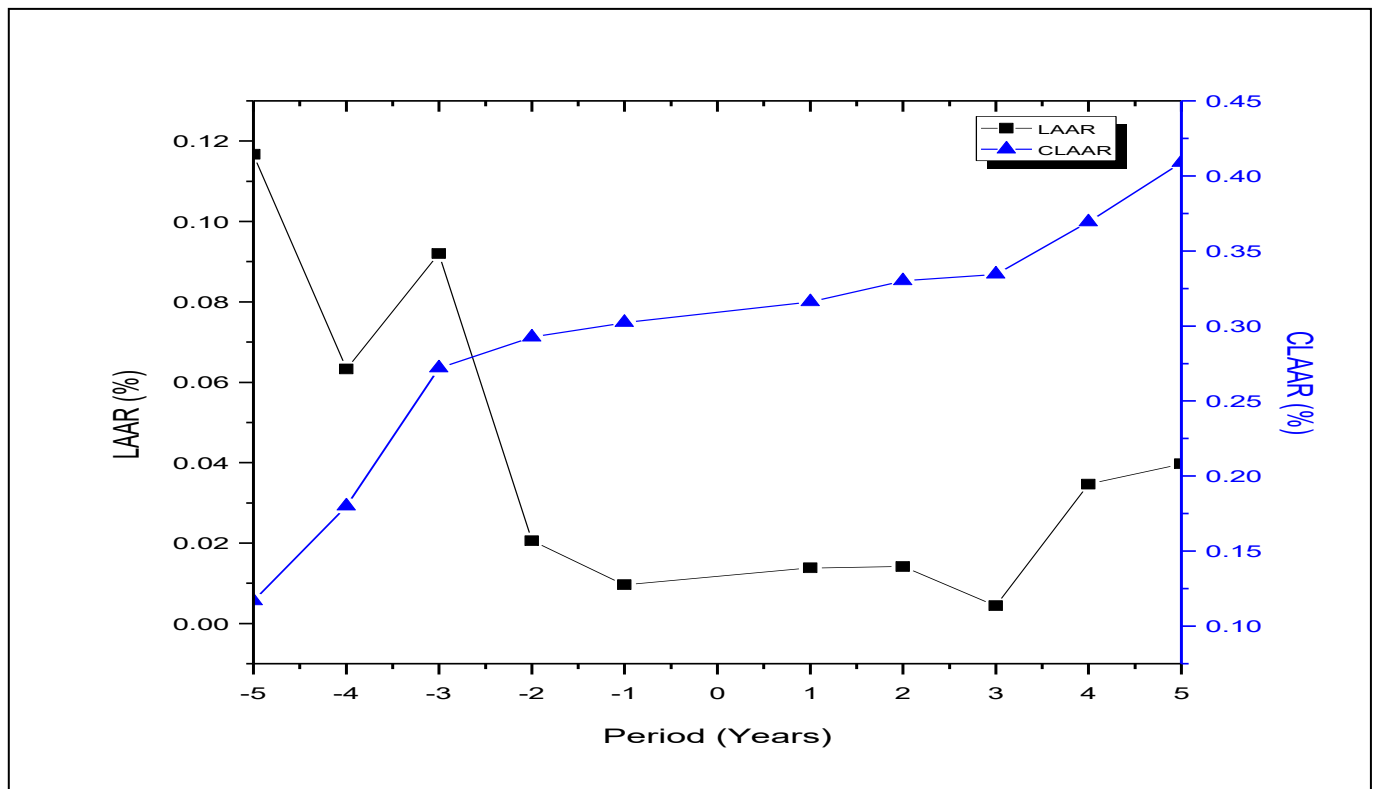


Fig 1: Long Run Average Abnormal Return (LAAR) and Cumulative Long Run Average Abnormal Return (CLAAR) for Listed Firms in Eastern Africa Securities Markets Involved in Mergers and Acquisitions for the Window Period [-5,+5] Years.

IV. CONCLUSION AND RECOMMENDATION

The objective of the study was to evaluate the long term impact of mergers and acquisitions activities on acquirer's return of firms listed in Eastern Africa securities markets. Carhart four factor model was used in computing cumulative abnormal returns in the long run of a sample of 25 firms. Based on the study findings the study concluded that in the long term, M&A activities do not generate significant returns to acquiring firms listed in Eastern Africa securities markets. Previous studies advocate application of long run market based measures for effective evaluation of impact of mergers and acquisitions. This study acknowledges that long run evaluation of impact of M&As activities on return can be a problematic undertaking and may be susceptible to confounding effect. The study therefore suggests use of large samples and adequate control in computation of long run return to reduce noise effects.

V. AREAS OF FURTHER RESEARCH

Future studies should consider using two or more models when computing long run cumulative abnormal return from mergers and acquisitions for a comparative analysis. Long run abnormal return can be modelled using the Fama and French Three-Factor Asset Pricing Model, Buy and Hold Return Method and in addition to this the researchers may seek to test the reliability of the recent Five-Factor Model in determining the long term abnormal returns following M&A activities.

This study considered listed firms in Eastern Africa securities markets involved in M&A activities. This represented M&A activities in emerging markets therefore providing an out-of-sample data. In total, twenty five (25) M&A firms were studied; these could be considered few and hence less representative in wider jurisdictions. A broader study could be conducted across a larger region, such as Sub-Saharan Africa or the entire Africa continent, to minimize potential sampling bias that may have influenced this research. Finally, this study restricted itself to long run impact M&A activities returns, similar studies should be undertaken to find out the impact of M&A activities on risk.

REFERENCES

- [1]. Alexandridis, G., Petmezas, D., & Travos, G. (2010). Gains from mergers and acquisitions around the world: New evidence. *Financial Management Journal*, 39 (4), 1671-169.
- [2]. Andrade, G., & Stafford, E. (2004). Investigating the economic role of mergers. *Journal of Corporate Finance*, 10(1), 1-36.
- [3]. Andrey Golubov, A. Petmezas, D. and Travlos N. (2013). Empirical mergers and acquisitions research: a review of methods, evidence and managerial implications Chapter 12 *Handbook of Research Methods and Applications in Empirical Finance*, 2013, pp 287-313 from Edward Elgar Publishing
- [4]. Arx, U. von, & Ziegler, A. (2008). The effect of CSR on stock performance: New evidence for the USA and Europe. *University of Zurich, Institute for Empirical Research in Economics Working Paper*.
- [5]. Bodie, Z., Kane, A., & Marcus, A. J. (2021). *Investments* (12th ed.). McGraw-Hill Education.
- [6]. Cakici, N., & Tan, S. (2014). Size, value, and momentum in emerging market stock returns. *Emerging Markets Review*, 19, 1–23.
- [7]. Carhart, M. M. (1997). On persistence in mutual fund performance. *The Journal of Finance*, 52(1), 57–82.
- [8]. Dutta, S., & Jog, V. (2009). The long-term performance of acquiring firms: A re-examination of an anomaly. *Journal of Banking & Finance*, 33(8), 1400–1412.
- [9]. Estrada, J. (2011). *The Essential Financial Toolkit: Everything You Always Wanted to Know About Finance But Were Afraid to Ask*. Wiley.
- [10]. Eurelich M., Kopp R., and Fligge B., (2022) Mergers and acquisitions research, A bibliometric analysis. *Elsevier*, 40 (6) 832- 846.
- [11]. Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47(2), 427–465.
- [12]. Fama, E. F., & French, K. R. (1996). Multifactor explanations of asset pricing anomalies. *The Journal of Finance*, 51(1), 55–84.
- [13]. Fu, F., Lin, L., & Officer, M. S. (2013). Acquisitions driven by stock overvaluation: Are they good deals? *Journal of Financial Economics*, 109(1), 24–39.
- [14]. Halfar, C. (2011). *The impact of mergers and acquisitions on the financial performance of South African listed companies* (Master's dissertation, University of Johannesburg).
- [15]. Kariuki, Muturi and Ndung'u, 2016. Firm Characteristics and Stock Market Return to Mergers and Acquisitions Announcements in Emerging Markets. Evidence from Mergers and acquisitions Firms Listed in Eastern Africa Securities Markets. *International journal of economic commerce and management*, 4(12), 200-216.
- [16]. Kodongo, O., Mokoteli, T., & Maina, L. (2014). Capital structure, profitability and firm value: panel evidence of listed firms in Kenya. Electronic copy available at: <http://ssrn.com/abstract=2465422>
- [17]. Kyriazis, D. (2010). The long-term post acquisition performance of Greek acquiring firms. *International Research Journal of Finance and Economics*, 43(1), 69-79.
- [18]. Malin, M., & Veeraraghavan, M. (2004). On the robustness of the Fama and French multifactor model: Evidence from France, Germany, and the United Kingdom. *International Journal of Business and Economics*, 3(2), 155–176.
- [19]. Masulis, R. W., Wang, C., & Xie, F. (2007). Corporate governance and acquirer returns. *Journal of Finance*, 62, 1851-1889.

- [20]. Mateev, M and Andonov, K. (2016). Do cross-border and domestic bidding firms perform differently? New evidence from continental Europe and the UK. *Research in International Business and Finance*, 2016, 37, 327-34.
- [21]. McWilliams, A., and Siegel, D. (1997). Event studies in management research. Theoretical and empirical issues. *Academy of Journal Management*, 40(3), 626-657.
- [22]. Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005). Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *The Journal of Finance*, 60(2), 757–782.
- [23]. Morelli, D. (2007). Beta, size, book-to-market equity and returns: A study based on UK data. *Journal of Multinational Financial Management*, 17(3), 257–272.
- [24]. Nwani, C. (2015). Does the Fama and French three-factor model explain stock returns in the Nigerian stock market? *Journal of Finance and Investment Analysis*, 4(1), 1–16.
- [25]. Rani, N. Yadav, S. and Jain, P. (2015). Impact of Mergers and Acquisitions on Shareholders' Wealth in the Short Run: An Event Study Approach. *Vikalpa*, 40(3) 293-312.
- [26]. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research Methods for Business Students* (8th ed.). Pearson
- [27]. Triki, T., & Chun, O. (2011). Does good governance create value for international acquirers Africa? Evidence from US acquisitions. *Working Paper No. 143*. Development research department, African Development Bank Group. <http://www.afdb.org/>.
- [28]. Yaghoubi, R., Yaghoubi, M. Locke, S., & Gibb, J. (2016a). Mergers and acquisitions: A review (Part 1). *Studies in Economics and Finance*, 33(1), 147-188.
- [29]. Zaremba, A., & Plotnicki, M. (2014). The performance of value, size, momentum, and mix strategies: [31] Evidence from the Polish market. *Economic Research-Ekonomska Istraživanja*, 27(1), 861–876.
- [30]. Zaremba, A., Szyszka, A., Plotnicki, M., & Grobelny, P. (2018). Post-merger returns in frontier markets, or how we learned to stop worrying and love the acquirers. *Journal of Business Economics and Management*, 17(1), 96-109.

APPENDICES**Appendix I. Study Population****a) Listed Financial and Non Financial Institutions involved in Mergers**

	Institution	Merged with	Current name	Date
1	Stanbic Bank (K) Ltd	Stanbic Finance (K) Ltd	Stanbic Bank of Kenya Ltd	1996
2	National Industrial Credit Bank Ltd	African Mercantile Bank Corp	NIC Bank	1997
3	Standard Chartered Bank of Kenya	Standard Chartered Financial Services	Standard Chartered Bank of Kenya	1999
4	Diamond Trust Bank (K) Ltd	Premier Saving and Finance Ltd	Diamond Trust (K) Bank	1999
5	Barclays Bank of Kenya Ltd	Barclays Merchant Finance Ltd	Barclays Bank of Kenya Ltd	1999
6	Kenya Commercial Bank	Kenya Commercial Finance Co	Kenya Commercial Bank Ltd	1999
7	Cooperative Bank Ltd	Cooperative Merchant Bank Ltd	Cooperative Bank of Kenya	2002
8	CFC Bank Ltd	Stanbic Bank Ltd	CFC Stanbic Bank Ltd	2008
9	Saving and Loan (K) Ltd	Kenya Commercial Bank Ltd	Kenya Commercial Bank Ltd	2010
10	Biashara Bank Ltd	Investment & Mortgage Bank Ltd	I&M Ltd	2002
11	Pan African Insurance	Apollo Insurance Co Ltd	APA Insurance	2003
12	Kobil Kenya	Kenya Oil	Kenol Kobil	2014
13	Safaricom Ltd	Essar Telecommunacation	Safaricom ltd	2014

Source: Competition Authority of Kenya, 2015; Central Bank of Kenya 2015.

b) Listed Financial and Non Financial Institutions Acquisition Firms in Eastern Africa Securities Market

S/n	Acquisition Companies	Year
14	Kenya oil Acquisition of kobil oil	2007
15	Acquisition of Uganda Telecom by Lap Green company	2006
16	Equity Bank of Kenya Acquires Housing Finance	2007
17	Equity Bank of Kenya Acquires Microfinance Institution (MFI) of Uganda	2008
18	Safaricom Kenya Acquires One Com (Kenya IT Firm).	2008
19	Total Kenya acquisition of Chevron Kenya	2009
20	East African Breweries Acquisition of Serengeti Breweries of Tanzania	2010
21	East African Breweries Acquisition of Kenya Breweries	2011
22	TPS Serena group of Hotels acquires Hotel Movenpick Dareesalam	2012
23	Acquisition of Crown Berger (Crown Paint Kenya Acquisition of Crown Paint Tanzania)	2012
24	Tps Eastern Africa (Serena) Acquisition of TPS Uganda	2012
25	I&M Bank Acquisition by City Trust	2012
26	Pan African Insurance Acquisition by Hubris Holding Ltd	2012
27	Centum Investment acquisition of Genesis Kenya Investment Management	2013
28	Scan group and Cavendish Squareholdings	2013
29	Acquisition of Getaway Insurance Company by Pan Africa Insurance Holding Ltd	2014
30	Britam Acquisition of Real Insurance	2014
31	British American Investment (Britam) Kenya Acquisition of Housing Finance	2014
32	Acquisition of Phoenix Uganda by Kenol Kobil	2014
33	Barclays Bank acquires First Assurance Company	2015
34	Equity Investment Bank acquires 250,000 of Thuo and Partners Brokerage Firm	2013
35	Standard Chartered private Equity (SCPE) and ETC group.	2013
36	I&M Bank Acquisition of Giro Bank	2015
37	Equity Bank of Kenya Acquires Pro-credit Bank of Congo	2015
38	Unga Group Ltd Acquisition of Enns Valley Bakery Ltd	2014

Source: Competition Authority of Kenya

Appendix 11: Carhart Return Variable Data Plot by Firm

