

Examining the Influence of Agency Costs on the Relationship between Free Cash Flows and Performance of Firms Listed at the Dar es Salaam Stock Exchange

Mutahyoba D. Baisi

Department of Business Studies, Catholic University of Mbeya, Tanzania

Abstract

Firm performance is affected by both internal and external factors. Internal factors include firm characteristics such as firm size, age, liquidity, leverage, profitability, and growth prospects. External factors include regulations, agency costs and general macro-economic factors. This study sought to establish the effect of agency costs on the relationship between free cash flows and firm performance of firms listed at the Dar es Salaam Stock Exchange (DSE). Regression analysis using OLS utilized both primary data and secondary panel data which were obtained from all firms listed at the DSE. Results indicate that free cash flows have a significant positive relationship with firm performance, and, agency costs have a positive significant moderating effect on the relationship between free cash flows and firm performance. All the predictor variables have a joint positive and significant effect on performance. It has been established that free cash flows have a positive relationship with firm performance and that agency costs; and specifically, firm monitoring and corporate governance have a positive and significant effect on firm performance. It is recommended that firm stakeholders should enhance firm monitoring and corporate governance because the benefits derived from investing therein seem to outweigh the costs.

Key words: *Free cash flows, Agency costs, Firm Performance, Corporate governance*

Date of Submission: 03-09-2026

Date of Acceptance: 13-09-2026

I. Introduction

The separation of firm proprietorship and management in public firms causes conflict of interests between firm owners (principals) and firm managers (agents). While the primary incentive of firm owners is to maximize their wealth by improving firm value, the goals of firm managers are varied and may include enrichment of personal wealth and status. This varying of interests sometimes leads managers to prefer engaging in activities which have no mechanisms for effective monitoring, validation and approving of managerial decisions (Wang, 2010).

Jensen and Meckling (1976) argue that agents resort to extraction of private benefits from firms that they manage if they are not shareholders. This has the effect of raising agency costs which are manifested through inefficient investment choices and inefficient or insufficient effort expended by firm managers. The rise in agency costs eventually affects firm performance (Tirole, 1986). Brush, Bromiley and Hendrickx (2000) also show that management's self-interest motivates wastage and inefficiency in the presence of free cash flows (FCF) which similarly increases agency costs and eventually affects firm performance.

Brush, *et al.* (2000) observe that agency theory examines how management's behavior could be focused at shareholders' interests by reducing agency costs. Jensen and Meckling (1976) and Jensen (1986) describe three forms of agency costs. First, the monitoring cost of management's actions; second, the bonding cost of restrictive covenants; and thirdly, residual loss due to suboptimal management's decisions. The goal of management is to maximize personal wealth instead of shareholders' wealth. This self-interest encourages wastage when there are FCF. Tanzania has experienced turbulent times with regard to the agency problem and its corporate governance (CG) practices since the early years of economic liberalization in the early 1990s resulting in generally low corporate profits across the economy (Baisi, 2025). Ongore and K'Obonyo (2011) also note that agency problems were fairly well replicated globally during the same period. This study, based on the agency theory and the FCF hypothesis, aimed at exploring how agency costs influence the relationship between FCF and performance of firms listed at the Dar es Salaam Stock Exchange (DSE).

The concept of FCF, introduced by Jensen (1986), refers to the sum of the surplus funds available after funding profitable projects. Wang (2010) observes that the original definition of FCF, according to Jensen

(1986) is net operating income less capital expenditure (CAPEX), inventory cost and dividend payment. On the other hand, Brealey, Myers and Allen (2005) describe FCF as net income plus depreciation and amortization, less CAPEX, less change in non-cash working capital, plus net borrowing. Richardson (2006) argues that firms that have excess funds risk ending up wasting them in unprofitable projects, and that since FCF is financial resources at the management's discretion to allocate, it is also called idle cash flows. FCF represents the cash that a firm is able to generate after setting aside cash required to maintain or expand its asset base.

Agency costs refer to the cost that a firm incurs due to inconsistent interests of management and shareholders (Berle and Means, 1932). Jensen and Meckling (1976) point out that the incomplete contractual relationship between the principal (shareholders) and the agent (management) might cause agency problem. The agency problem caused by the management would result in a loss in shareholders' wealth in the following ways: first, management, from the aspect of self-interest motive, would increase perquisite consumption and shirking behavior, which in turn leads to an increase in agency costs. Second, management might not choose the highest Net Present Value (NPV) investment project, but the one that maximizes their own interest, which would expose shareholders to unnecessary investment risk.

Tirole (1986) argues that there are two important manifestations of agency costs: first, inefficient investment choices; and second, inefficient or insufficient effort expended by managers. Agency cost measures should therefore depend on inefficient asset utilization (because of poor investments), excessive production cost and wasteful managerial perks (resulting in higher expenses), and insufficient effort exerted by management (resulting in lower revenues and earnings). Efficiency of asset utilization is measured by asset turnover ratio which is defined as the ratio of sales to assets. This reflects how management uses the assets under their control for revenue generation. Production cost efficiency on the other hand is measured as operating expenses divided by sales.

Firm performance is defined by Gleason and Barnum (1982) as the firm's ability to achieve planned results as measured against its intended outputs. It encompasses outcomes related to financial performance, market performance and shareholder return while Daft (1995) defines it as the firm's ability to attain its goals by using resources in an efficient and effective manner.

Research Problem

The FCF hypothesis implies that a higher level of FCF could lead to more unnecessary administrative waste and inefficiency, negatively impacting on firm performance (Nekhili, *et. al.*, 2014). The agency problem has afflicted many firms including Enron Corporation in the United States of America, China Aviation, and Uchumi Supermarkets in Kenya (Ongore and K'Obonyo, 2011) although Frentrop (2003) maintains that there is still lack of concurrence on identifying the extent and dealing with the complexities that are inherent in CG processes. Waithaka, *et. al.* (2012) note that FCF causes conflicts between management and shareholders which in turn affects firm performance.

Globally, empirical literature shows mixed findings regarding FCF and firm performance. For instance, Nekhili, *et. al.* (2014) found increased agency costs emanating from the presence of FCF and similarly, Brush, *et. al.* (2000) established that weak CG caused inefficiency in the allocation of FCF. While these findings support the argument that FCF negatively affects firm performance, Gregory (2005) found that mergers with higher levels of FCF outperform those with lower FCFs. Moreover, Wambua (2013) found a positive correlation between FCF and performance of firms listed at the NSE, which again invalidates the hypothesis that there is a negative relationship between FCF and firm performance.

Unlike Wang (2010) and Lin and Lin (2014) who excluded CAPEX and net borrowings in their operationalization of FCF, this study included both of them in the definition of FCF. Also, unlike Njuguna and Moronge (2013) who used asset utilization efficiency as the sole measure of agency costs, this study incorporated production cost efficiency and also developed a monitoring index to measure agency costs that arise out of monitoring management's actions. These measures of FCF and agency costs are more robust. Studies such as Brush, *et. al.* (2000) and Wambua (2013) used financial performance outcomes only in measuring firm performance. Apart from financial performance outcomes, this study incorporated non-financial outcomes (Balanced Score Card and non-market performance measures) because non-financial aspects such as customer satisfaction, efficiency of internal business processes, and learning and growth perspectives are an integral part of the overall firm performance (Baisi, 2025).

II. Literature Review

Wang (2010) studied the impacts of FCF and agency costs on firm performance using descriptive statistics, correlations and regression analyses and found significant effects of FCF on agency costs which were, however, contradictory. On one hand, FCF could increase the incentive for management to increase perquisite consumption and shirking, thus leading to an increase in agency costs and lower firm performance while on the other hand, FCF could be generated due to management's operating efficiency such that there may be a negative

relationship between FCF and agency costs. However, in his definition of FCF, Wang (2010) did not take into account CAPEX and net borrowings, which are critical in the FCF definition (Baisi, 2025). Wang's (2010) findings are consistent with Gregory (2005) who found that mergers with higher levels of FCF would perform better than those with lower FCFs.

Brush, *et. al.* (2000) investigated the agency argument that sales growth in firms with FCF is less profitable than sales growth for firms with lower FCF. It was found that firms with FCF gain less from sales growth than firms without FCF and that different types of strong governance affect performance and sales growth in different ways: owner-managed firms with FCF use it to grow faster than firms without FCF. The findings by Wang (2010) and Gregory (2005) on the one hand and Brush, *et. al.* (2000) on the other hand reveal inconsistencies. These contradictions indicate that the relationship between FCF and firm performance is still unresolved.

Lin and Lin (2014) investigated the relationship between agency costs of FCF and bidders' long-run takeover performance by introducing two proxies of FCF (excess cash holdings and excess accounting cash flow). The results indicated that the level of excess cash holdings did not provide a significant explanation for the cross-sectional variation in long-run post acquisition performance. Results from the flow measure of cash indicated that the acquisitions carried out by bidders with excess accounting cash flow did not increase agency costs and therefore were not value decreasing. Instead, bidders with higher excess accounting cash flows had better long-run post-acquisition performance. This finding is contrary to the argument that substantial FCF increases agency costs which subsequently negatively impacts on firm performance. However, Lin and Lin's (2014) definition of FCF ignores CAPEX and net borrowings which are vital variables.

Nekhili, *et. al.* (2014) analyzed the moderating effect of CG and ownership features in lessening earnings management practices when there is FCF. The results highlight the opportunistic behavior of firm managers in the presence of high FCF. The study measured FCF by multiplying the retained cash flows by the inverse of Tobin's Q. However, like in Lin and Lin (2014), CAPEX and net borrowings were omitted in the definition of FCF. The results show that in the presence of FCF, the propensity of corporate executives to use discretionary accruals depends on firm ownership and the effectiveness of governance mechanisms. The findings show that managers engage in earnings management practices that increase reported earnings, which implies that there are increased agency costs emanating from the presence of FCF, subsequently negatively affecting firm performance.

Study Hypothesis

The study was based on the following two hypotheses:

H₁: Free cash flows have a significant effect on the performance of firms listed at the Dar es Salaam Stock Exchange.

H₂: Agency costs have a significant moderating effect on the relationship between free cash flows and performance of firms listed at the Dar es Salaam Stock Exchange.

III. Research Methodology

The study adopted both the cross sectional and longitudinal descriptive survey of all 28 firms listed at the DSE (22 local and 6 cross-listed) whereby at least seven managers were targeted from each firm bringing the total sample size to 196. Secondary data was obtained from published financial statements over a multiple period of time ranging from 2016 to 2025 (longitudinal data). Yearly data covering the entire study period was collected so as to ensure that enough degrees of freedom in the models to be estimated were available.

Data was analyzed using inferential statistics generated from statistical software, using 95% confidence interval as in Aiken and West (1991). The study also employed panel data regression analysis using the OLS method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression.

In establishing the effect of FCF on firm performance FCF was the independent variable, while firm performance was the dependent variable. In the specification, the standard errors were clustered by firm and year. The regression model for hypothesis 1 was as follows:

$$\bar{Q}_{it} = \alpha + \beta FCF_{it} + \varepsilon \text{ ----- (1a)}$$

$$\bar{Q} = \alpha + \beta FCF + \varepsilon \text{ ----- (1b)}$$

Where:

$\bar{Q}$ = Firm performance measures

Financial performance measures employed Tobin's Q for $\bar{Q}_{it}$ in equation 1a while non-financial measures used $\bar{Q}$ in equation 1b

Non-financial performance measures entailed customer satisfaction; efficiency of internal business processes; learning and growth perspectives; and non-market perspectives

α = Constant term

β = Beta Coefficient

FCF_{it} = Free cash flows measure in panel data

FCF = free cash flows measure in ANOVA

ϵ = Error term.

Firm performance measures were entered into the model one at a time. $\bar{Q}_{it}$ and $\bar{Q}$ are therefore not composite measures of performance.

In analyzing hypothesis 2, the relevant variables were FCF (independent variable), agency costs (moderating variable) and firm performance (dependent variable). Moderating effects were examined using hierarchical (stepwise) multiple regression analysis. According to Baron and Kenny (1986), moderator variables have certain distinctive characteristics such as: they are independent, exogenous to criterion variables and often uncorrelated to either the predictor or the criterion variables.

The regression model was as follows:

$$\bar{Q}_{it} = \alpha + \beta_1 FCF_{it} + \beta_2 PCE_{it} + \beta_3 AUE_{it} + (\beta_4 PCE_{it} + \beta_5 AUE_{it}) * (\beta_6 FCF_{it}) + \epsilon_{it} \text{ ---- (2a)}$$

$$\bar{Q} = \alpha + \beta_1 FCF + \beta_2 FMC + (\beta_3 FMC) * (\beta_4 FCF) + \epsilon \text{ ----- (2b)}$$

Where:

PCE_{it} = Production cost efficiency;

AUE_{it} = Asset utilization efficiency;

FMC = Firm monitoring and governance index

Equation 2a represents the moderation model for the panel data while equation 2b represents the moderation equation for cross-sectional data. To avoid potential high multicollinearity with the interaction term (Agency costs), the variables were centered and an interaction term added.

Table 1 Summary of Statistical Tests of Hypotheses

Objective	Hypothesis	Analytical Model	Interpretation
i. To establish the relationship between FCF and performance of firms listed at the DSE	H₁: FCF have a significant effect on the performance of firms listed at the DSE	- ANOVA regression model - Panel data regression model - Test of assumption (normality and multi- collinearity)	- Relationship exists if β is significant - Relationship is determined based on R²
ii. To assess the influence of agency costs on the relationship between FCF and performance of firms listed at the DSE	H₂: Agency costs have a significant moderating effect on the relationship between FCF and performance of firms listed at the DSE	- ANOVA regression model - Panel data regression model - Test of assumption (normality and multi- collinearity)	- The intercept of the regression model used to test the influence of agency cost, the relationship between free cash flow and firm performance. - Regression co-efficient and R² used to affirm the effect of agency cost on the relationship between free cash flow and firm performance.

Findings

Out of the total sample size of 196, a total of 145 positive responses were obtained implying that a response rate of 74% was achieved (Table 2), which, according to Baruch and Holtom (2008) is good enough.

Table 2: Responses According to Sector

Sector	Number of Companies	Responses	%
Banking and Financial Services	14	72	49.7
Consumer goods	5	26	17.9
Manufacturing	8	42	29.0
Telecommunications	1	5	3.4
Total	28	145	100.0

The study used OLS to estimate regression models 1 and 2. The use of OLS is based on normality, linearity, internal consistency and sampling adequacy of variables used in the regression model. To test whether the variables were normally distributed the Shapiro Wilk test for normality was used. The test has a null hypothesis that the data does not come from a population that is normally distributed. The test statistics for normality of each variable are shown in table 3.

Table 3 Normality Test

Variable	Test Statistic	
	Z statistic	P value
Free cash flows	1.751	0.070
Agency costs	1.138	0.128
Firm characteristics	0.710	0.239

Table 3 shows that the p-values for all the variables were greater than 0.05 implying that the alternative hypothesis that the variables were normally distributed could not be rejected at 5 per cent level of significance. Thus, OLS could be applied on the data and reliability tests requiring normality of the data such as t-tests and p-values could reliably be used.

Reliability tests were carried out using Cronbach's alpha tests in Statistical Package for the Social Sciences (SPSS) with the results presented below. The study results reveal that average reliability scores for the variables is 0.745 which is more than 0.700 the accepted score for reliability, implying that the research instrument was deemed good enough (Bonett and Wright, 2014).

Table 4: Reliability Scores for Individual Variables

Variable Item	Cronbach's Alpha
Free Cash Flow	0.738
Agency Costs	0.745
Firm Performance	0.695

To test whether the variables were linearly associated, correlation analysis was used. The test had a null hypothesis of no linear association. Table 5 shows the test statistics for linear associations between the predictor variables and firm performance (explanatory variable).

Table 5: Linearity Test

Reference Variable: Firm Performance	Correlation Coefficient	P-Value
Free cash flows	0.539	0.000
Agency costs	0.530	0.000

Table 5 shows that p-values for the correlation coefficients are less than 0.01 implying that all the predictor variables have significant positive correlation with firm performance at 5 per cent level of significance. This indicates that the predictor variables and firm performance move in the same direction implying a linear relationship. The significant and positive correlation implies that the signage coefficients of the predictor variables in the simple regression models are positive.

The consistency of the items used in the structured questionnaire to measure the various variables used in the study was tested using Bartlett's test of sphericity. The test has a null hypothesis of no internal consistency (intercorrelated). Failure to reject the null hypothesis means that the principal components that measure a particular section have to be found through principal component analysis. However, rejection of the null hypothesis means that all the items are internally consistent and their composites can be used to measure the variables concerned. The test statistics for each of the sections involved in the linear regression analysis are shown in table 6.

Table 6: Bartlett's Test

Variable	Degrees of freedom	Test statistic	
		Chi Square	P value
Free cash flows	21	447.7	0.000
Agency costs	10	243.1	0.000
Firm characteristics	10	154.3	0.000
Firm Performance	10	279.1	0.000

Table 6 shows that the null hypothesis that the variables in question are not intercorrelated in each of the sections is rejected at 5 per cent level of significance. This implies that there is internal consistency between the items of each section in the structured questionnaire. Therefore, summations of Likert scale items from each dimension of the structured questionnaire could be used as composites for each variable without use of principal component analysis.

To test whether the level of multicollinearity in the estimated models could be tolerated, Variance Inflation Factor (VIF) was used. The rule of the thumb is that a value of VIF that is less than 10 means that the

level of multicollinearity can be tolerated (Robinson and Schumacker, 2009). Since multicollinearity test is only applicable for multivariate regressions, only VIF statistics are reported since the regressions involve more than one independent variable.

Table 7: Multicollinearity Test

Variables	VIF
Free Cash Flows	2.26
Asset utilization Efficiency	1.46
Production Cost Efficiency	1.15
Financial Performance	2.35

Table 7 shows that the VIF for all the models estimated ranged from 1.15 to 2.35 showing that the VIF results are between the acceptable ranges of 1 to 10. This shows that the variables did not exhibit multicollinearity and regression analysis could then be carried out.

Free Cash Flows and Performance of Firms Listed at DSE.

The study sought to identify the effect of FCF on firm performance. In the first instance, tests were carried out to determine the type of model to be used (random or fixed effects). This was carried out through Chaw and Hausman tests with results indicating significance of p-value less than 0.05 thus allowing the use of fixed effect panel modelling.

Table 8: Analysis for Free Cash Flows and Firm Performance

Test	Number	Statistics	Statistics Value	Degree of Freedom	Sig
Chaw	600	F	3.5280	(104,593)	0.003
Hausman	600	Chi-Square	42.551	8	0.00
Variable	Coefficient	p-values			
FCF	0.235	0.03			
F-Statistic	Prob > Chi2 = 0.0016				
R-Squared	28%				
Model	R	R ²	Adjusted R ²	Standard Error	
1	0.594	0.352836	0.28462	0.946273	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	10.731	1	10.731	11.897	0.001
Residual	129.838	144	0.902		
Total	140.569	145			
Model	Unstandardized Coefficients		Std Coefficients	T	Sig
	B	Standard Error	Beta		
Constant	0.044	0.118		-0.371	0.711
FCF	0.201	0.060	1.96	3.332	0.001

The results in Table 8 indicate that FCF explains 35.3% and 28.5% of the variability in firm performance for primary data and panel data respectively. This contribution is significant at p value = 0.001, meaning that 64.7% and 71.5% variation in performance respectively is explained by other factors that are not captured by the study. Table 8 shows that the F statistic = 11.897 which is significant, meaning that the model was robust enough to explain the relationship. Therefore, the study rejected the null hypothesis.

$$\bar{Q} = 0.044 + 0.201FCF + \varepsilon$$

Where:

$\bar{Q}_{it}$ = Firm Performance

FCF = Free Cash Flows

ε = Error term

According to the statistics in Table 8 the model for panel data analysis and ANOVA is significant, thus showing that the model fits the regression analysis. This is indicated by p-values of 0.0016 and 0.001 respectively. There is a significant direct relationship between FCF and performance. The results indicate that firms with higher FCF perform better than the firms with lower FCF and thus, there is a significant positive relationship between FCF and firm performance as measured by Tobin Q and other non-financial measures. These results are inconsistent with the null hypothesis that there is no significant relationship between FCF and firm performance. The analysis shows that increasing FCF gives more resources to firm managers and a good usage of this money contributes to the increasing income and profits.

Hypothesis 1a: Free Cash flows have a Significant Effect on Customer Perspective

Table 9: Relationship between Free Cash Flows and Customer Perspective

Model	R	R ²	Adjusted R ²	Standard Error	
1	0.469	0.219	0.1786	0.56328	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	9.734	1	9.734	10.792	0.023
Residual	101.838	144	0.902		
Total	111.572	145			
Model	Unstandardized Coefficients		Std Coefficients		
	B	Standard Error	Beta		
Constant	0.21	0.118	0.23	0.12	0.06
FCF	0.06	0.023	1.76	3.332	0.042

From Table 9 it is shown that FCF explains 21.9% of the variability in customer perspective ($R^2 = 0.219$) with 78.1% being explained by other variables not captured in the study. The regression model is significant at $F = 10.792$ with p value = 0.023 which is lower than the cut-off p value of 0.05 implying that the null hypothesis is rejected. FCF have a significant effect on customer perspective aspect of non-financial performance. The regression model that explains the variation in customer perspective as a consequence of direct influence of FCF is shown below:

$$Y = 0.21 + 0.06FCF + \varepsilon$$

Where:

Y = Firm performance (customer perspective)

FCF = Free cash flows

ε = Error term

Hypothesis 1b: Free Cash flows have a Significant Effect on Internal Business Processes

Table 10: Relationship between Free Cash Flows and Internal Business Processes

Model	R	R ²	Adjusted R ²	Std Error	
1	0.321	0.10304	0.8145	0.108	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	10.349	1	10.349	16.5372	0.031
Residual	90.123	144	0.6258		
Total	100.472	145			
Model	Unstandardized Coefficients		Std Coefficients		
	B	Standard Error	Beta		
Constant	0.183	0.075			0.711
FCF	0.141	0.076	1.76	2.05	0.067

The results in Table 10 show that FCF explain 10.3% of the variability in efficiency of internal business processes ($R^2 = 0.10304$) with 89.7% being explained by other variables not captured in the study. The regression model is at $F = 16.5372$ with p value = 0.031 which is lower than the cut off p value of 0.05. This again means that the null hypothesis is rejected. FCF have a significant effect on internal business processes aspect of non-financial performance. The regression model that explains the variation in efficiency of internal business processes as a consequence of direct influence of FCF is shown below:

$$Y = 0.183 + 0.141FCF + \varepsilon$$

Where:

Y = Firm performance (efficiency of internal business processes)

FCF = Free cash flows

ε = Error term

Hypothesis 1c: Free Cash flows have a Significant Effect on Learning and Growth

Table 11: Relationship between Free Cash Flows and Learning and Growth

Model	R	R ²	Adjusted R ²	Std Error	
1	0.738	0.5446	0.4983	0.6856	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	11.564	1	11.564	14.082	0.034
Residual	118.258	144	0.8212		
Total	129.822	145			
Model	Unstandardized Coefficients		Standard Coefficients		
	B	Std Error	Beta		
Constant	0.245	0.123		2.13	0.645
FCF	0.11	0.052	1.684	1.954	0.041

Table 11 results reveal that FCF explain 54.5% of the variability in learning and growth perspective ($R^2 = 0.5446$) with 45.5% being explained by other variables not captured in the study. The regression model is at $F = 14.082$ with p value = 0.034 which is lower than the cut off p value of 0.05. This again means that the null hypothesis was rejected. FCF have a significant effect on learning and growth perspective aspect of non-financial performance. The regression model that explains the variation in learning and growth perspective as a consequence of direct influence of FCF is as shown below:

$$Y = 0.245 + 0.11FCF + \varepsilon$$

Where:

Y = Firm performance (Learning and growth perspective)

FCF = Free cash flow

ε = Error term.

Hypothesis 1d: Free cash flows have a Significant Effect on Non-market Perspective

Table 12: Relationship between Free Cash flows and Non-Market Perspective

Model	R	R ²	Adjusted R ²	Std Error	
1	0.521	0.2714	0.213	0.4672	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	11.443	1	11.443	13.318	0.42
Residual	123.726	144	0.8592		
Total	135.169	145			
Model	Unstandardized Coefficients		Std Coefficients		
	B	Standard Error	Beta		
Constant	0.207	0.09		3.067	0.045
FCF	0.128	0.035	1.87	2.31	0.08

The results in Table 12 reveal that FCF explain 27.14% of the variability in non-market perspective ($R^2 = 0.2714$) with 72.86% being explained by other variables not captured in the study. The regression model is at $F = 13.318$ with p value = 0.42 which is higher than the cut off p value of 0.05. This means that the null hypothesis is not rejected. FCF have no significant effect on non-market perspective aspect of non-financial performance. The regression model that explains the variation in non-market perspective as a consequence of direct influence of FCF is as shown below:

$$Y = 0.207 + 0.128FCF + \varepsilon$$

Where:

Y = Firm performance

FCF = Free cash flows

ε = Error term

Free Cash Flows, Agency Costs and Firm Performance

The study sought to identify the effect of agency costs on the relationship between FCF and firm performance. First, tests were carried out to determine the type of model to be used (random or fixed effects). This was carried out through Chaw and Hausman tests with results indicating significance of p -value less than 0.05 thus allowing the use of fixed effect panel modelling.

Table 13: Analysis for Free Cash Flows Agency Costs and Firm Performance

Test	Number	Statistics	Statistics Value	Deg. of Freedom	Sig.	
Chaw	600	F	3.570	(104,560)	0.004	
Hausman	600	Chi-Square	40.551	8	0.01	
Variable	Coefficient		p-values			
FCF	0.145		0.003			
AUE	0.418		0.034			
PCE	0.211		0.017			
Constant	0.028		0.043			
F-Statistic	Prob > chi² = 0.031					
R-Squared	46%					
Model	R		R²	Adjusted R²	Standard Error	
1	0.836		0.6988	0.5924	0.84341	
Model	Sum of Squares		DF	Mean of Square	F	Sig
Regression	10.041		1	10.041	11.436	0.042
Residual	126.432		144	0.878		
Total	136.473		145			
Model	Unstandardized Coefficients		Standard Coefficients			
	B	Std Error	Beta			
Constant	0.06	0.215			-0.283	0.031
FCF	0.103	0.197	0.226		1.982	0.034
FMC	0.139	0.2147	0.219		1.032	0.042

$$\hat{Q} = 0.028 + 0.145\text{FCF} + 0.418\text{AUE} + 0.211\text{PCE} + \varepsilon$$

Where:

$\hat{Q}$ = Firm performance (Financial)

FCF = Free cash flows

AUE = Asset Utilization Efficiency

PCE = Product Utilization Efficiency

ε = Error term

$$Y = 0.06 + 0.103\text{FCF} + 0.139\text{FMC} + \varepsilon$$

Where:

Y = Firm performance (non-financial)

FCF = Free cash flows

FMC = Firm monitoring costs

ε = Error term

Testing how agency costs influence the relationship between FCF and firm performance, Table 13 displays the regression results based on the models. The F-statistics of both models are significantly greater than one, indicating a significant goodness of fit. The FCF variable is found to be significantly positively associated with Tobin Q, indicating no evidence that FCF have a negative effect on firm performance. This is indicated by (0.145, 0.003) and (0.103, 0.034).

The findings reveal that the intercept (constant) is positive and significant in both secondary and primary data sets. This is indicated by constant values of 0.028 and 0.06 respectively. Overall, it shows a positive effect of agency costs on the relationship between FCF and firm performance. This is further corroborated by a strong co-efficient of determination for both secondary and primary data. The results indicate that an increase in agency costs by 2.8% or 6% (for secondary data and primary data respectively) will lead to an improvement in firm performance by 1%. These findings are supported by Kangarluei, *et. al.*, (2011) and Khidmat and Rehman (2014) who established a significant positive effect of agency costs on the relationship between FCF and firm performance.

Three different agency cost measures were tested in the study: asset utilization efficiency (secondary data), production cost efficiency (secondary data) and firm monitoring costs (primary data). The results reveal that firm monitoring cost measure is positive and significantly associated with firm performance (0.0139, 0.042). This can be attributed to the role of internal control systems in reducing agency costs. Asset utilization efficiency has been established to be significant and positively related to firm performance (0.418, 0.034).

Results for production cost efficiency (PCE) reveal a positive and non-significant effect on the relationship between FCF and with firm performance (0.211, 0.017). According to the regression results it is noted that the effect of agency costs on the relationship between FCF and firm performance explains 46% (secondary data) and 70% (primary data) variation in performance of listed firms. This implies that 54% and 30% of variation in performance of the DSE listed firms is not explained by the regression model (for secondary data and primary data respectively). Results from the ANOVA, indicate that the overall model had a

significance value of 0.6% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 0.05.

Table 14: Summary of Tests of Hypotheses, Results and Conclusions

Hypothesis	R ²	(p-value)	F- statistic	Conclusion
H1: FCF have a significant effect on performance of firms listed at the DSE	0.28 0.352836	0.03 0.001	3.528 11.897	Alternative Hypothesis supported
H1 _a : FCF have a significant effect on performance of firms listed at the DSE (customer perspective)	0.219	0.042	10.792	Alternative Hypothesis supported
H1 _b : FCF have a significant effect on performance of firms listed at the DSE (efficiency of internal business processes)	0.10304	0.067	16.5372	Alternative Hypothesis not supported
H1 _c : FCF have a significant effect on performance of firms listed at the DSE (Learning and growth perspective)	0.5446	0.041	14.082	Alternative Hypothesis supported
H1 _d : FCF have a significant effect on performance of firms listed at the DSE (Non-market perspective)	0.2714	0.08	13.318	Alternative Hypothesis not supported
H2: Agency costs have a significant moderating effect on the relationship between FCF and performance of firms listed at the DSE	0.46 0.6988	0.043 0.042	0.031 11.436	Alternative Hypothesis supported

IV. Conclusion

This study was formulated based on the premise that FCF have an influence on firm performance, and that the relationship between the two is moderated by agency costs. The first objective of the study was set to find out the relationship between FCF and firm performance. The findings reveal that FCF have a positive influence DSE listed firms' performance. The effect of FCF was found to be statistically significant and hence the null hypothesis was rejected. The findings also indicate that agency costs have a positive moderating effect on the relationship between FCF and performance of DSE listed firms. Thus the study rejected the null hypothesis that agency costs have no significant moderating effect on the relationship between FCF and firm performance.

The findings imply that DSE listed firms have effective control and oversight mechanisms which have allowed managers to make good investment decisions that are geared towards maximizing shareholders' wealth. Therefore, increasing FCF improves the performance of DSE listed firms. This could be attributed to improved firm monitoring and CG which seem to have achieved the objective of aligning the interests of firm managers and those of shareholders.

It is recommended that firms should strive to increase their FCF since it has a significant positive effect on firm performance. Similarly, firms should invest more in monitoring and CG which; according to findings in this study, suggest that the benefits derived therefrom outweigh the agency costs of investing therein. As there exists a positive relationship between FCF and firm performance, it is recommended that firm managers, investors and other practitioners should focus more on the need for firms to generate FCF. Positive FCF indicate that the firm is generating more cash than is used to run the firm and reinvest to grow the business. Such excess funds can be distributed back to shareholders through dividends or share repurchase programs in cases where the firms have limited growth potential and the cash could not be better invested elsewhere.

Results also indicate a positive moderating role of CG and board structure and composition on the relationship between FCF and firm performance. It is therefore recommended that regulators, policy makers, investors and other practitioners should emphasize on CG mechanisms to maintain if not improve the high firm performance. Study results indicate that proper CG mechanisms can bring the actions of firm managers into congruence with those of shareholders; which primarily is, to maximize shareholders' wealth.

References

- [1]. Aiken, L. S. and West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks. Sage.
- [2]. Baisi, M. D. (2025). *Corporate Financial Management*. Dar es Salaam University Press, DUP, Dar es Salaam.
- [3]. Baron, R. M. and Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- [4]. Baruch, Y. and Holtom, B. C. (2008). Survey Response Rate Levels and Trends in Organizational Research. *Human Relations Journal*, 61(8), 1139-1160.
- [5]. Berle, A. A. and Means, G. C. (1932). *The Modern Corporation and Private Property*. McMillan, New York.
- [6]. Bonett, D. G. and Wright, T. A. (2014). Cronbach's Alpha Reliability: Interval Estimation, Hypothesis Testing and Sample Size Planning. *Journal of Organizational Behavior*. 36, (1), 3-15.
- [7]. Brealey, A. A., Myers, S. C. and Allen, F. (2005). *Principles of Corporate Finance (8th ed.)*. Boston: McGraw-Hill.
- [8]. Bromiley, P. (1990). *Advances in Strategic Management*. JAI Press, Greenwich.

- [9]. Brush, H. W., Bromiley, P. and Hendrickx, M. (2000). The Free Cash Flow Hypothesis for Sales Growth and Firm Performance. *Strategic Management Journal*, 21, 455-472.
- [10]. Daft, R. L. (1995). *Organization Theory and Design (11th ed.)*. West Publishing Company, New York.
- [11]. Figge, F., Hanh, T., Schaltegger, S. and Wagner, M. (2002). The Sustainability Balanced Score Card-Linking Sustainability Management to Business Strategy. *Business Strategy and Environment*, 11, 269-284.
- [12]. Frentrop, P. (2003). On the Discretionary Power of Top Executives. *Journal of Asset Management*, 5 (2), 91-104.
- [13]. Gleason, J. M. and Barnum, D. T. (1982). Toward Valid Measures of Public Sector Productivity: Performance Measures in Urban Transit. *Management Science*, 28(14), 379-386.
- [14]. Gregory, A. (2005). The Long-run Abnormal Performance of UK Acquirers and the Free Cash Flow Hypothesis. *Journal of Business Finance and Accounting*, 32(5), 777-814.
- [15]. Jensen, M. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, 76(2), 323-329.
- [16]. Jensen, M. C. and Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure. *Journal of Financial Economics*, 3, (4), 305-360.
- [17]. Kaplan, R. S. and Norton, D. P. (2001). Transforming Balanced Score Card from Performance Measurement to Strategic Management: Part I. *Accounting Horizons*, 87-104.
- [18]. Kangarluei, S. J., Motavassel, M., and Abdollahi, T. (2011). The Investigation and Comparison of Free Cash Flows in the Firms Listed in Tehran Stock Exchange (TSE) with an Emphasis on Earnings Management. *International Journal of Economics and Business Management*, 2(2), 5352-118.
- [19]. Khidmat, W. B. and Rehman, M. U. (2014). The Impact of Free Cash Flows and Agency Costs on Firm Performance - An Empirical Analysis of KSE Listed Companies of Pakistan. *Journal of Financial Engineering*, 01(03), 145 – 175.
- [20]. Lin, L. and Lin, D. (2014). Agency Cost of Free Cash Flow and Bidders' Long-run Takeover Performance. *Universal Journal of Accounting and Finance*, 2(1), 1-8.
- [21]. Nekhili, M., Amar, I. F. B., Chtioui, T. and Lakhel, F. (2014). Free Cash Flow and Earnings Management: The Moderating Role of Governance and Ownership. *Journal of Financial Economics*, 11(13), 847 – 875.
- [22]. Njuguna, L. and Moronge, M. (2013). Influence of the Managerial Behavior of Agency Cost on the Performance of Listed Firms on NSE. *International Journal of Social Sciences and Entrepreneurship*, 1 (7), 397-410.
- [23]. Ongore, V. and K'Obonyo, P. (2011). Effects of Selected Corporate Governance Characteristics on Firm Performance: Empirical Evidence from Kenya. *International Journal of Economics and Financial Issues*, 1 (3), 99-122.
- [24]. Richardson, S. (2006). Over-investment of Free Cash Flow and Corporate Governance. *Review of Accounting Studies*, 11, 159-189.
- [25]. Robinson, C. and Schumacker, R. E. (2009). Interaction Effects: Countering Variance Inflation Factor and Interpretation Issues. *Multiple Linear Regression View Points*, 35(1), 6-11.
- [26]. Tirole, J. (1986). *The Theory of Corporate Finance*. Princeton University Press, Princeton.
- [27]. Waithaka, S. M., Ngugi, J. K., Aiyabei, J., Itunga, K. and Kirago, P. (2012). Effects of Dividend Policy on Share Prices: A Case of Companies in Nairobi Securities Exchange. *Journal of Business Administration and Management*, 2 (8), 642-648.
- [28]. Wambua, P. (2013). Effects of Agency Costs on Financial Performance of Companies Listed at the Nairobi Securities Exchange. *International Journal of Social Sciences and Entrepreneurship*, 1 (5), 587-607.
- [29]. Wang, G. Y. (2010). The Impacts of Free Cash Flows and Agency Costs on Firm Performance. *Journal of Service Science and Management*, 3, 408-418.