

Free Cash Flows, Agency Costs and Performance of Firms Listed at the Nairobi Securities Exchange

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Abstract: *Firm performance is affected by various factors, both internal and external. Internal factors include firm characteristics such as firm size, age, liquidity, leverage, profitability, growth prospects among others. External factors include regulation, agency costs and general macro-economic factors. This paper sought to establish the influence of agency costs on the relationship between free cash flows and firm performance. The second objective was to assess the influence of agency costs on the relationship between free cash flows and performance of firms listed at the Nairobi securities exchange. The study used both primary data and secondary panel data which were obtained from all firms listed at the NSE for the period 2006 to 2015. Panel data and simple regression analyses using OLS were employed in the study. 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 had a joint positive and significant effect on performance. The main academic contribution of the study is that free cash flows have a positive relationship with firm performance and that agency costs; and specifically, firm monitoring and corporate governance has a positive and significant effect on the performance of firms listed at the NSE. Firm managers, shareholders, practitioners, the government and other regulators should, therefore, enhance firm monitoring and corporate governance because the benefits derived from investing therein seem to outweigh the costs.*

Keywords: Free cash flows, Agency costs, Firm Performance.

Introduction

The separation of firm proprietorship and management in public firms causes a 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 engage in insider dealings where there are 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 behaviour could be focused on 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 lastly, 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 FCF are present; hence, implying the FCF hypothesis. Nyong'o (2000) observes that Kenya has experienced turbulent times with regard to the agency problem and its corporate governance (CG) practices in the last two and half decades, resulting in generally low corporate profits across the economy. 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, aims at exploring how agency costs influence the relationship between FCF and performance of firms listed at the Nairobi Securities Exchange (NSE).

Free Cash Flows

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

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 behaviour, 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). The 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

Gleason and Barnum (1982) define firm performance as a 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. On the other hand, Daft (1995) defines firm performance as the firm's ability to attain its goals by using resources in an efficient and effective manner.

The Balanced Score Card (BSC) was developed by Kaplan and Norton (2001) and it measures financial performance, customer satisfaction, efficiency of internal business processes and learning and growth perspectives of performance. The sustainable BSC has been applied to integrate the environmental and social aspects into successful implementation of both conventional corporate strategy and explicit corporate sustainability strategies (Figge, Hanh, Schaltegger and Wagner, 2002).

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. The agency problem, the vice of managerial fraud, accounting irregularities and other governance abuses is a global phenomenon, afflicting many firms including Enron Corporation in the United States of America (USA), China Aviation, and Uchumi Supermarkets in Kenya (Ongore and K'Obonyo, 2011). Frentrop (2003) has reported that there is still lack of concurrence on identifying the extent and dealing with the complexities that are inherent in CG processes. Waithaka, Ngugi, Aiyabei, Itunga and Kirago (2012) note that FCF caused conflict between management and shareholders which in turn affected the performance of firms listed at the NSE.

Globally, empirical literature shows mixed findings regarding FCF and firm performance. For instance, Nekhili, Amar, Chtioui and Lakhali (2014) carried out a study in Australia and found increased agency costs emanating from the presence of FCF. Similarly, Brush et al. (2000) conducted a study in the USA and found that weak CG caused inefficiency in the allocation of FCF. While these findings support the argument that FCF negatively affects firm performance; on the contrary, Gregory (2005), whose study was conducted in the UK found that mergers with a higher level of FCF would perform better than those with a lower FCF. Locally, 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.

Wang (2010) and Lin and Lin (2014) excluded CAPEX and net borrowings in their operationalization of FCF. This study included both CAPEX and net borrowings in the definition of FCF. Additionally, unlike Njuguna and Moronge (2013) who used asset utilization efficiency

as the sole measure of agency costs, this study also 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 (BSC 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.

Literature Review

Free Cash Flows and Firm Performance

Wang (2010) studied the impacts of FCF and agency costs on firm performance with empirical data obtained from Taiwan Stock Market and Taiwan Economic Journal for the period 2002 to 2007. Using 505 firms as the sample, the study used the variable of standard FCF to measure FCF and six proxy variables to measure agency costs. Descriptive statistics, correlations and regression analyses were employed in the study and found significant effects of FCF on agency costs. The effects were however contrary; 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. On the other hand, he found that FCF is 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.

These findings are consistent with results by Gregory (2005) who studied the long run abnormal performance of United Kingdom (UK) acquirers and the relationship between FCF and firm performance. In the study, Gregory (2005) found that mergers with a higher level of FCF would perform better than those with a lower FCF. In testing the hypothesis, the study used "long-term returns" and also "analyzed announcement month return". However, the study did not look at daily returns around announcement, which could probably yield different results. Furthermore, the study focused on financial performance outcomes only.

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. Data were obtained from USA firms; covering eight years, 1988 to 1995 and used Tobin's Q to identify whether firms have positive NPV projects available to determine FCF, and returns to shareholders as a performance measure. As cited by Bromiley (1990), it is erroneous to use shareholder returns as a measure of performance because it assumes capital market efficiency, which argues that the returns largely reflect surprises to the market. Thus, if the market anticipates a firm's sales growth and profitability, even highly profitable sales growth should not show up in shareholder returns in the period in which it occurred. The study found that firms with FCF gain less from sales growth than firms without FCF. The study also found 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 (average of 5.7% compared to averages around 4.5%). 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.

Free Cash Flows, Agency Costs and Firm Performance

Lin and Lin (2014) investigated the agency costs of FCF and bidders' long-run takeover performance in Australia, using data for the period 1993 to 2000. Using a sample of 556 acquiring firms, the study introduced two proxies of FCF; excess cash holdings and excess accounting cash flow and tested the relationship between the level of excess cash and bidders' long-run post-acquisition performance. 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 critical variables.

Nekhili et al. (2014) analyzed the moderating effect of CG and ownership features in lessening earnings management practices when there is FCF. Using a sample of 85 French listed firms during the period 2001 to 2010, the results highlight the opportunistic behaviour 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 deriving from the presence of FCF, consequently negatively affecting firm performance.

Hypothesis of the Study

H1: Free cash flows have a significant effect on the performance of firms listed at the Nairobi securities exchange.

H2: Agency costs have a significant moderating effect on the relationship between free cash flows and performance of firms listed at the Nairobi securities exchange.

Research Methodology, Data Analysis and Findings

The positivist approach effectively rendered itself to this study, because the study is centered on existing theory and it develops hypotheses which can be verified. The research design adopted for this study was both cross-sectional and longitudinal descriptive survey of all firms listed at the NSE. Secondary data were obtained from published financial statements over a multiple periods of time; ranging from 2006 to 2015 (longitudinal data). Secondary data from firms listed

at the NSE was obtained from published audited financial statements, obtained from the NSE. 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 includes time series and cross-sectional data that is pooled into a panel data set and estimated using panel data regression.

Effect of Free Cash Flows on Firm Performance

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

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

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

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 and 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.

Agency Costs on the Relationship between Free Cash Flows and Firm Performance

In analyzing hypothesis 2, the relevant variables are 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 is 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 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 NSE	H₁ : FCF have a significant effect on the performance of firms listed at the NSE	<ul style="list-style-type: none"> ANOVA regression model Panel data regression model Test of assumption (normality and multi-collinearity) 	<ul style="list-style-type: none"> Relationship exists if β is significant Relationship will be determined based on R^2
ii. To assess the influence of agency costs on the relationship between FCF and performance of firms listed at the NSE	H₂ : Agency costs have a significant moderating effect on the relationship between FCF and performance of firms listed at the NSE	<ul style="list-style-type: none"> ANOVA regression model Panel data regression model Test of assumption (normality and multi-collinearity) 	<ul style="list-style-type: none"> The intercept of the regression model will be used to tests the influence of agency cost the relationship between free cash flow and firm performance. Regression co-efficient and R^2 will be used to affirm the effect of agency cost on the relationship between free cash flow and firm performance.

The study targeted 63 firms listed at the NSE but three firms were left out of the study. Uchumi was left out because it was delisted for two years before being allowed back in 2015. Frame Tree Group and Home Africa were not included because they were listed at NSE in 2013 and therefore data for some of the study years were missing. From the 60 firms, three managers were targeted bringing the total sample size to 180. A response rate of 81% was achieved, which according to Baruch and Holtom (2008) is good.

Table 2. Responses According to Sector

Sector	Number	%
Banking	28	19.3
Insurance	25	17.2
Commercial and Allied	24	16.6
Manufacturing and Allied	20	13.8
Agricultural	12	8.3
Energy and petroleum	11	7.6
Construction and allied	10	6.9
Automobiles and Accessories	9	6.2
Telecommunication and Technology	3	2.1
Real Estate Investment Trust	3	2.1
Total	145	100.0

Pre-estimation Diagnostics

The study used OLS to estimate regression models 1 through 2. The use of OLS is based on normality, linearity, internal consistency and sampling adequacy of variables used in the regression model. Therefore normality, linearity and internal consistency of these variables were required for the application of OLS. To test whether the variables were normally distributed 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. Therefore, the alternative hypothesis that the variables were normally distributed could not be rejected at 5 percent level of significance. Therefore, 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. Field (2009) recommends the use of a visual inspection of histograms or Quantile-Quantile (Q-Q) plots to supplement use of tables and numbers. These plots are presented in Figure 1, Figure 2 and Figure 3.

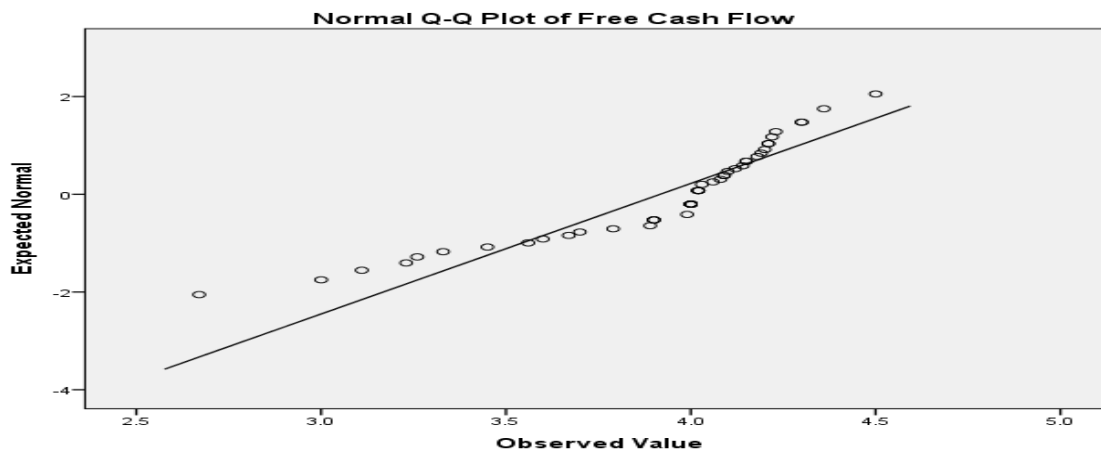


Figure 1. Q-Q Plot of Free Cash Flows

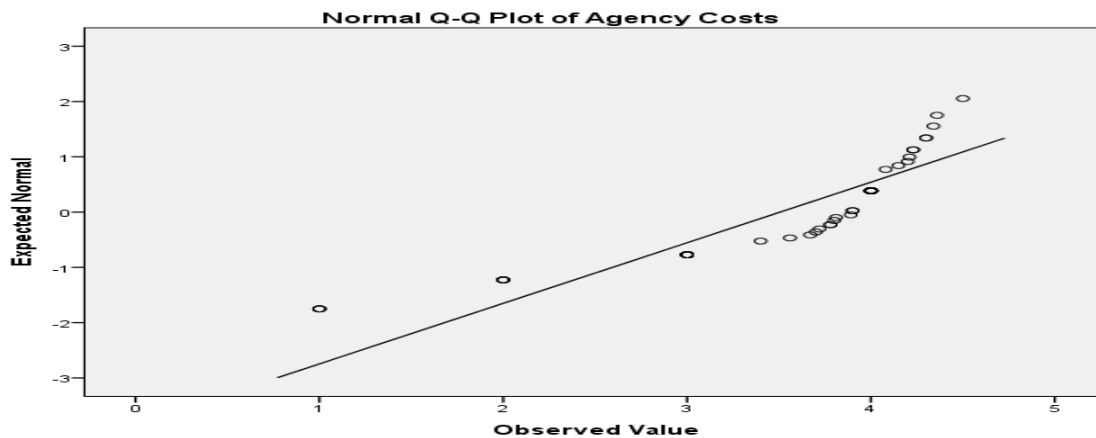


Figure 2. Q-Q Plot of Agency Costs

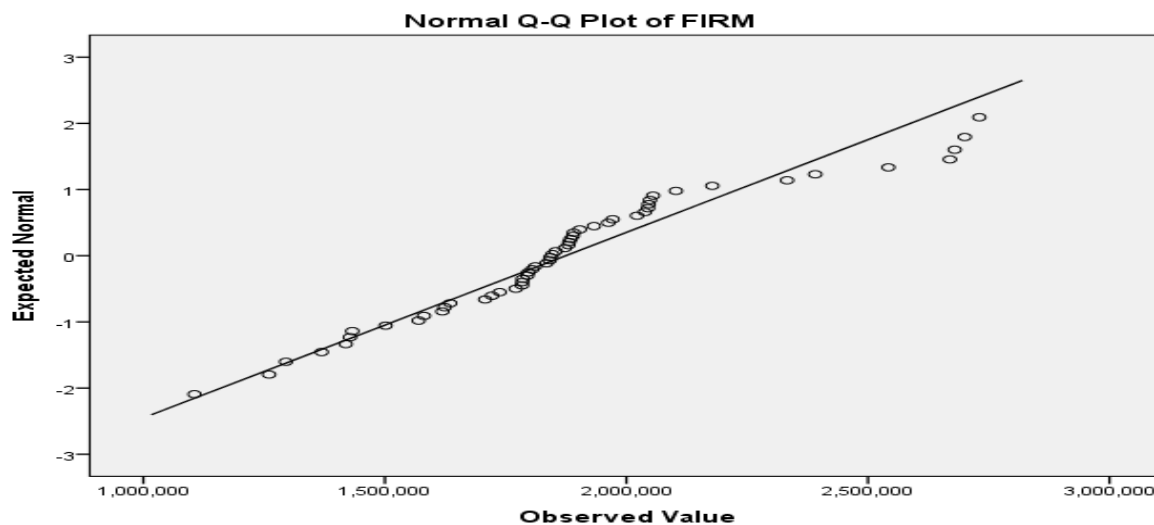


Figure 3. Q-Q Plot of Firm Performance

Reliability Tests

Reliability tests were carried out through 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 were 0.745 which is more than 0.700 the accepted score for reliability, thereby showing that the research instrument was deemed good as supported by 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

Test for Linearity

To test whether the variables were linearly associated, correlation analysis was used. The test had a null hypothesis of no linear association. Table 5 below 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. Therefore, all the predictor variables have a significant positive correlation with firm performance at 5 percent level of significance. That is; 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.

Bartlett's Test of Internal Consistency

The study tested the consistency of the items used in the structured questionnaire to measure the various variables used in the study 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 above shows that the null hypothesis that the variables in question are not intercorrelated in each of the sections is rejected at 5per cent level of significance. This implies that there is internal consistency between the items of each section in the structured questionnaire. Therefore, simple means or summations of Likert items from each dimension of the structured questionnaire could be used as composites for each variable without the use of principal component analysis.

Multicollinearity Test

Multicollinearity occurs if there is a strong relationship between two or more independent variables in a regression model. 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 1.09 to 2.53 showing that the VIF results are within 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 NSE

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	.044	.118		-.371	.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. The Table 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.

$$\bar{Q} = .044 + 0.201FCF + \epsilon$$

Where: \bar{Q}_{it} = Firm Performance; FCF=Free Cash Flows; and, 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 during the years 2006 to 2015. The results indicate that firms with higher FCF perform better than the firms with lower FCF. There is a positive relationship between FCF and firm performance. These results are inconsistent with the null hypothesis that states that there is no significant relationship between FCF and performance of firms listed at NSE. The findings show that there is a positive significant relationship between FCF and performance measurement criteria line Tobin Q and other non-financial measures. The analysis shows that increasing FCF disposes more resources to firm managers and their 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 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	.118	0.23	0.12	0.06
FCF	0.06	0.023	1.76	3.332	0.042

The results in Table 9 show 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 cutoff p-value of 0.05. This means that the null hypothesis was rejected. FCF has 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 as shown below:

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

Where: Y= Firm performance (customer perspective); FCF= Free cash flows; and, 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 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		Standard Coefficients		
	B	Standard Error	Beta		
Constant	.183	.075			.711
FCF	0.141	0.076	1.76	2.05	0.067

The results in Table 10 show that FCF explains 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 $p\text{-value} = 0.031$ which is lower than the cut off $p\text{-value}$ of 0.05. This again means that the null hypothesis was rejected. FCF has 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 as shown below:

$Y=0.183+0.141FCF + \epsilon$: Where: Y= Firm performance (efficiency of internal business processes); FCF= Free cash flows; and, 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 explains 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 $p\text{-value} = 0.034$ which is lower than the cut off $p\text{-value}$ of 0.05. This again means that the null hypothesis was rejected. FCF has 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:

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

Y= Firm performance (Learning and growth perspective); FCF= Free cash flow; and, 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	.09		3.067	.045
FCF	0.128	0.035	1.87	2.31	0.08

Table 12 results reveal that FCF explains 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 $p\text{-value} = 0.42$ which is higher than the cut off $p\text{-value}$ of 0.05. This means that the null hypothesis was not rejected. FCF has 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:

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

Y= Firm performance; FCF= Free cash flows; and, 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 the significance of $p\text{-value}$ 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	Significance	
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		R ²	Adjusted R ²	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	.06	.215			-.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

$$\bar{Q} = 0.028 + 0.145FCF + 0.418AUE + 0.211PCE + \epsilon$$

\bar{Q} = Firm performance (Financial); FCF= Free cash flows; AUE= Asset Utilization Efficiency; PCE= Product Utilization Efficiency; and, ϵ = Error term

$$Y = 0.06 + 0.103FCF + 0.139FMC + \epsilon$$

Y = Firm performance (non-financial); FCF = Free cash flows; FMC = Firm monitoring costs; and, ϵ = Error term

For 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).

From the study findings, it is revealed 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, Motavassel, and Abdollahi (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 revealed 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 the internal control system in reducing agency costs. Asset utilization efficiency was 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 was 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 the variation in performance of the NSE 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 NSE	0.28 0.352836	0.03 0.001	3.528 11.897	Alternative Hypothesis supported
H1a.: FCF have a significant effect on performance of firms listed at the NSE (customer perspective)	0.219	0.042	10.792	Alternative Hypothesis supported
H1b.: FCF have a significant effect on performance of firms listed at the NSE (efficiency of internal business processes)	0.10304	0.067	16.5372	Alternative Hypothesis not supported
H1c.: FCF have a significant effect on performance of firms listed at the NSE (Learning and growth perspective)	0.5446	0.041	14.082	Alternative Hypothesis supported
H1d.: FCF have a significant effect on performance of firms listed at the NSE (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 NSE	0.46 0.6988	0.043 0.042	0.031 11.436	Alternative Hypothesis supported

Summary, Conclusion and Recommendation

Summary of findings

This study was founded on the premise that FCF has 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 performance of firms listed at NSE. The findings reveal that FCF has a positive influence on the performance of firms listed at the NSE. 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 firms listed at the NSE. Thus the study rejected the null hypothesis that agency costs have no significant moderating effect on the relationship between FCF and performance of firms listed at NSE.

Conclusion

FCF has a positive significant effect on firm performance. Similarly, agency costs have a positive significant moderating effect on the relationship between FCF and firm performance. 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 there from outweigh the agency costs of investing therein.

The findings imply that NSE 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 firms listed at NSE. 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 (maximizing shareholders' wealth).

Limitations of the Study

The study relied on primary data which was obtained from managers of the firms listed at the NSE. The key informant approach in the study may have introduced bias into the data obtained. Incorporating data from customers, investors or other practitioners such as consultants could mitigate on the bias. Secondly, the study focused on firms listed at the NSE which operate in a unique environment. Unique factors such as regulatory environment, culture and demographics limit the generalizability of the study results to other countries or markets. However, these limitations did not undermine the robustness and/or the rigour employed in the study.

Recommendations and Suggestions for Further Research

The findings show that there exists a positive relationship between FCF and firm performance. The study, therefore, recommends that firm managers, investors and other practitioners should focus more on the need for firms to generate FCF. Positive FCF indicates 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, policymakers, 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.

This study employed both cross-sectional and longitudinal study designs. Further studies should be conducted with a focus on either cross-sectional design or longitudinal study design. Secondly, the study integrated both financial and non-financial performance outcomes. Further studies need to be conducted with a focus on either of the two performance outcomes. This would create room for use of more performance measurement tools such as ROE, ROI, ROA, DY, sales growth, market share and productivity. Other non-financial measurement tools would include use of the IDRC model, performance prism and the Cambridge performance measurement process.

Lastly, the study targeted NSE listed firms only. Further studies should be conducted on private firms, parastatals, and/ or other agencies.

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