

STOCK LIQUIDITY AND PERFORMANCE OF SELECTED QUOTED FIRMS IN NIGERIA: CASE STUDY OF FAST-MOVING CONSUMER GOODS (FMCG)

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Abstract:

This study investigated the impact of stock liquidity of performance of selected quoted firms, in the Fast-Moving Consumer Goods Sector (FMCG) in Nigeria. The study selected ten (10) firms based on their level of liquidity, five (5) most liquid firms and Five (5) least liquid respectively, spanning from year 2006-2020. It adopted explanatory research design, the dependent variable firm performance was Proxied by Return on Equity (ROE) while stock liquidity was Proxied by trade based measure(Ahmihud Illiquidity ratio), with control variables which include Firm size Proxied by Market Capitalization, Corporate Governance Proxied by Board size , Stock Return Volatility, Proxied by Variance of Stock Return and Inflation Rate .Pre estimation carried out include ; Bruesch-Pagan (BP) LM Test which showed existence of cross sectional dependency test, and Kao Cointegration test revealed existence of long run relationships. The study deployed the Non-Linear Panel Auto Regressive Distributed Lag (NARDL) to estimate the model, and Pooled Mean Group (PMG) was specifically used. We had three sample categories; Full Sample, High Liquid and Low Liquid. Results revealed that in the short run, variations in AILQ both positive AILQ+ and AILQ- have an effect on ROE. In the long run, both positive and negative changes in AILQ have a substantial long-term impact in ROE. However, the negative change seems to have a stronger influence. This study concludes that firm performance is greatly impacted by stock liquidity, which shows that fluctuations in stock liquidity would greatly impact an organization's profitability. Thus, validating the findings of Karim and Rashid (2020). This study recommends that the government should adopt rules and regulations that are more sector-specific in order to influence the Nigerian Stock Market and enable investors to make investments in areas that are essential to the country's economy as a whole. This can be accomplished by giving more security to crucial yet data-dictated areas.

Keywords: Stock Liquidity, Firm Performance, Return on Equity, Ahmihud Illiquidity

Introduction

The Nigerian Stock Exchange (NSE), formerly known as the Lagos Stock Exchange, was founded in 1961 and changed its name to Nigerian Exchange Limited (NGX) in 2021. The NSE was not very active until the Structural Adjustment Programme (SAP) was put into place in 1986 and caused interest rates in the money market to rise. The majority of this was caused by less costly solutions (Owido, Onyuma and Owuor, 2013). The Central Securities Clearing System (CSCS), a computerised clearing, settlement, and delivery system, and the Automated Trading System (ATS) were introduced by the NSE in 1997 to replace the traditional process of aggregating investible

long-term assets. The CSCS interacts with the ATS, dematerializes share certificates, and electronically stores them in a central repository to facilitate a transaction settlement cycle (Oladejo, 1999). The regulators of the NGX sought to enhance liquidity of the market because of the crucial role liquidity plays in the stock market. Kumar (2015) therefore, contends that there are major advantages for companies, dealers, regulators, and stock exchanges in accepting the idea that liquidity is often the lifeblood of stock markets.

It may therefore be important that firms are efficiently managed in order for their stocks to be liquid; and the performance of a firm affects share appreciation, dividend growth, and sales. Furthermore, as a gauge of the efficacy and efficiency of purposeful activity and decision-making, return on investment may be used to assess a company's success. In order to make choices and evaluate performance, managers usually look to financial indicators (Marc, Peljhan, Penikvar, Sobota, and Tekavcic, 2010). Monitoring and reporting on something's or an individual's progress is a part of analysing performance (Berry, Broadbent, and Otley, 2005). The consumer goods sector consists of stocks and companies that deal with things that are purchased by consumers. The consumer products industry is one of the main foundations of Nigeria's manufacturing business (Klynveld Peat Marwick Goerdeler (KPMG) 2020). In the same vein, the Lagos Business School (2016) opined that 71% of the Fast-Moving Consumer Goods (FMCG) firms' income comes from low-income earners. Arising from this account is the need to note that the highest consumers of FMCGs are known to be price sensitive and as such FMCG firms need to find the ways of minimizing cost of production such as to remain competitive in the industry. Consequently, FMCG companies must find methods to reduce manufacturing costs to maintain their competitiveness in the market. Likewise, the bulk of industrialised nations' manufacturing sector is dominated by the fast-moving consumer goods (FMCG) industry, according to the Food and Agriculture Organization of the United Nations (FAO) (2018). On the other hand, evidence of a steady fall in market share and profitability indicates that their performance has been insufficient. The primary reasons for these subpar performance patterns are the difficulties presented by inadequate market orientation and inefficient competition strategies. Afterwards, Audax (2018) stated that American multinational companies in the food and beverage industry have seen modest success due to slow

market development brought on by intense competition in an open market and slow pace set by customers and the market.

Nigeria's fast-moving consumer products business, despite fierce competition, is a thriving and expanding segment of the nation's industrial sector (KPMG, 2014 and Osundina, 2014). Nigeria has had a high incidence of manufacturing industry collapse, with the FMCG sector being particularly affected, according to Zwingina and Opusunju (2017). The researchers also found that the Nigerian Exchange Limited (NGX) enterprises in the consumer products sector were the most severely impacted by the 2016 economic downturn that put the majority of the nation's businesses at risk. Earnings after taxes in the consumer goods business, which was badly hit by the crisis, fell by 41% in 2016. After taxes, the profit was N114.8 billion in 2015 and N67 billion in 2016. Nestle's post-tax profits decreased from N73.7 billion in 2015 to N7.9 billion in 2016. A cursory look at the full year's financial report and the accounts of major players in the industry ended December 31, 2016, showed that Cadbury's loss increased by 268 percent year over year to N296.4 million, while Nigerian Breweries' after-tax profit fell by 25.37 percent to N28.4 billion from N38 billion the year before. Nonetheless, companies like Dangote Sugar, Nascon Allied Industries, Northern Nigeria Flour Mill, and Dangote Flour earned N48 billion (NNFM). The consumer goods sector on the NSE includes automobiles and auto parts, food products, diversified food products, household durables, personal/household items, and food products. The industry now makes up 13.543 percent of the market capitalization of the NGX, with a market value of N2.229 trillion. Operators claim that a combination of problems that had a big influence on manufacturers made 2016 a horrible year for Nigeria's manufacturing industry.

Against this background, with the effect of macroeconomic variables like inflation on firm performance, that this study seeks to evaluate the impact of stock liquidity on performances of selected firms based on their levels of liquidity.

Literature Review

Stock Liquidity

Stock The term "liquidity" has numerous important variations. According to some academics, liquidity is the capacity to complete a transaction swiftly and with little effect on the

price (minor change in the price accepted). According to some academics, liquidity is defined as a high volume or low cost of transactions (Goyenko, Holden and Trzcinka, 2009). Scholars have suggested that stock liquidity might be defined as the consistency of stock trading within a market. The capacity to acquire or sell stocks rapidly, in big quantities, without materially impacting the price, and without incurring high transaction fees is known as stock liquidity. These concerns are getting greater recognition (Norvaisiene and Stankeviciene, 2014).

Sudiyatno and Suwarti (2022) investigated the impact of liquidity on the firm performance of 123 manufacturing concerns that were in operation in Indonesia between 2019 and 2021. The data was collected using purposeful sampling, and the data analysis was done using multiple regression techniques. The variables that were analyzed were firm performance as the dependent variable, capital structure and firm size as the independent variables, operating assets as a control variable, and liquidity as a moderating variable. The findings showed that, although capital structure harms firm performance, operating assets, and firm size positively affect firm performance. The study concluded that liquidity is significant in its role as a moderating variable on capital. Boloupremo (2020) investigated the relationship between trading volume and turnover, two measures of liquidity, and stock returns on the Nigerian Stock Exchange from 1985 to 2015 using the vector auto-regression model. Boloupremo (2020) concludes empirically that greater trading and turnover volumes result in superior stock index returns, if market size is considered.

Gbalam and Nelson (2019) evaluated the Nigerian stock exchange market's deficient form efficiency using the daily, weekly, and monthly all share indexes of the NSE. Analytical tools used in the study included the random walk model, the Jarque-Bera test of normality, unit root tests of stationarity, and graph presentation. The outcomes showed that there was a considerable random walk in the Nigerian stock exchange's daily, weekly, and monthly returns. The study found that the Nigerian stock exchange market was functional despite its weakness and suggested that the government work to create and execute stock exchange regulations that will guarantee active trading and market vitality. However, the fact that Gbalam and Nelson (2019) focused on stock prices rather than stock returns in their research calls into question the validity of their empirical

conclusions. Stock prices alone cannot be used to determine the efficiency of a stock market or the random movement of stock prices.

The link between stock market liquidity and business value in Vietnam is examined by Batten and Vo (2019) using a sample of firms that were registered on the Ho Chi Minh City Stock Exchange between 2006. They show how liquidity and company value are inversely correlated and explain how this is different from past research from developed markets. The pricing-based hypothesis, which maintains that stock liquidity influences company performance through mispricing or an illiquidity premium, and variances in leverage effects are the sources of this. Mohammed and Yusheng (2019) indicate a positive significant effect of current assets and current liabilities that make up the liquidity decision with the firms' return on assets (ROA) in a study of 15 listed enterprises in Ghana over a period of 10 years (2008-2017). Nonetheless, the same study found a negligible correlation between the firms' ROE and ROCE (return on capital employed).

Aguiar and Reddy (2017) examined how the market price of the chosen FMCG companies was affected by the dividends that were issued. The researcher chose four businesses, including ITC Ltd., Godrej Consumer Goods Ltd., Procter & Gamble, and HUL, for convenience sampling. The analysis concluded that the FMCG sector showed an upward tendency in stock prices after the declaration of dividends. Hongli *et al.* (2019) look into how financial leverage and liquidity affect manufacturing companies' performance in six different industries that are listed between 2007 and 2015 on the Ghana Stock Exchange. The study uses fixed effect and random effect models for modelling, and returns on equity (ROE) and assets (ROA) are utilised as proxy for corporate performance. The results show that liquidity, as determined by the ratio of current assets to current liabilities, considerably increases return on equity (ROE).

Osadune and Ibenta (2018) looked at a few chosen Nigerian companies from 2001 to 2014 over 14 years. The study's conclusions showed a positive and significant association between the financial performance metric (return on assets) and all liquidity indicators, including current assets and current liabilities, as independent variables for liquidity decisions. Singh *et al.* (2015) examined the relationship between stock market liquidity and firm performance. The study deployed ordinary least and general linear models, which showed a favourable association between

the independent variables age and return on the dependent variable. The study also finds a link between better Tobin's Q corporate performance and stock liquidity. The purpose of Olorunfemi, Tomola, Adekunjo, and Ogunleye's (2013) investigation of manufacturing performance was to support sustainable economic growth in Nigeria. Panel data analysis was performed using secondary data extracted from the CBN Statistical Bulletin between 1980 and 2008. The results demonstrated the positive relationship between manufacturing and each capacity. However, the results indicated a negative relationship between manufacturing, investment, export, and exchange rate. The study discovered that investment, capacity utilisation, and imports were the three primary factors affecting manufacturing performance at the time.

Theoretical Review

Causative Theories-Maug (1998)

The causative theories provide additional insights into the various ways that stock liquidity affects performance. Most of them are causal theories based on agencies and focus on the relationship between liquidity and operating performance. In this regard, Maug (1998) is a noteworthy theory that models the monitoring decision of a large relationship investor. The investor wants to profit from price increases resulting from his activities, which he does by trading and keeping an eye on prices. Maug concludes that liquid stock markets frequently support sound corporate governance, as opposed to obstructing corporate control. Furthermore, stock liquidity is another causal mechanism that may discipline management, as mentioned by Admati and Pfleiderer (2009) and Palmiter (2002). Increased liquidity makes managers' opportunistic behaviour more costly by facilitating thoughtful "dumping" or selling, should management's compensation be contingent on current stock prices. The unique characteristic of causal agency theories is their capacity to predict a liquidity-related performance impact that is precisely connected with the level of agency conflict inside the organisation. As shown by Subrahmanyam and Titman (2001) and Khanna and Sonti, liquidity may positively affect company performance even in the absence of agency conflicts, in contrast to agency-based causation theories (2004). In this situation, liquidity promotes the arrival of astute investors, who raise pricing transparency for all parties involved.

Methods

The study adopts the explanatory research design. Examining causal relationships between or among variables is a typical feature of explanatory research plans (Saunders, Lewis and Thornhill, 2012). In the Nigerian context, explanatory research design is utilised to explain the relationships between stock liquidity and the financial performance of selected listed firms. This study deployed judgemental sampling technique to select ten (10) FMCG firms quoted on the Nigerian Exchange Group (NGX). The ten firms were chosen based on levels of extreme liquidity of stocks; the five (5) most liquid FMCG firms and five (5) least liquid firms were chosen. The study employed quarterly datasets on stock liquidity and corporate performance indicators in order to guarantee a robust empirical analysis. Panel datasets on daily stock returns, daily trading volume, daily bid and ask (buying and selling) prices of stock, quarterly earnings, quarterly ordinary shareholders' funds, quarterly dividend per share, and quarterly market price per share were thus collected across the ten (10) listed firms, or ten (10) cross-sectional units, for the sample period spanning from 2006 to 2020. The official daily records of the Nigerian Stock Exchange (NSE), presently known as Nigerian Exchange Limited (NGX), as well as the monthly financial reports of the selected listed firms served as the source of the datasets for the aforementioned variables.

Variable Description

Table3.1: - Variable Description Summary

<u>Dependent Variable:</u>	<u>Proxy/Measure</u>		<u>Definition</u>
Financial Performance Variable			
(a) Accounting-Based Measure	Return on Equity (ROE):	$ROE_{i,t} = \frac{\text{Earnings after tax}}{\text{Ordinary Shareholders' Funds}}$	Measures firms' performances based on the earning capacity of the shareholders in their equity value.

Independent Variable:	Proxy/Measure	Definition
Stock Liquidity Variable		
(a) Trade-Based Measure	Amihud Illiquidity Ratio	$AILQ_{i,t} = \frac{1}{D_{i,t}} \left(\sum_{d=1}^{D_{i,t}} \frac{ r_{d,t}^i }{V_{d,t}^i} \right)$ <p>Measures stock liquidity based on the responses of daily price changes (stock returns) to one Naira trading volume of stock.</p>
Control Variable	Proxy/Measure	Definition
(c) Firm's Size	Market Capitalization	The total number of a firm's outstanding shares multiplied by the current market price of share.
(d) Corporate Governance	Board Size	A firm's number of directors on the board of directors.
(e) Stock Return Volatility (SRV)	Variance of stock returns	$SRV_{i,t} = \frac{\sum_{d=1}^D (r_{d,t}^i - \bar{r}_{i,t})^2}{D_{i,t}}$ <p>Measures the quarterly unconditional volatility of stock returns</p> <p>$\bar{r}_{i,t}$ = quarterly mean stock returns</p>
(f) Inflation Rate	Consumer price index	Measures the rate of change in general level of prices.

Source: Researcher's compilation (2024)

Model Specification

The premise that the dependent variables ROE, which act as a proxy for a company's financial performance responds asymmetrically to changes in stock liquidity indicators forms the basis of the study's nonlinear panel ARDL model estimate. Put another way, it is expected that the companies' financial performance variable ROE, will respond to both positive and negative changes in the financial performance metrics (AILQ).

The linear or symmetric functional forms of the models are given as follows:

$$FPERF_{it} = \begin{cases} ROE_{it} = f(AILQ_{it}, SIZE_{it}, COG_{it}, SRV_{it}, INR_{it}) \end{cases} \quad (3.1)$$

In light of the asymmetric independent variables (AILQ and ROE) exhibiting both positive and negative variations, the models' nonlinear or asymmetrically functional forms have been changed in the following manner:

$$FPERF_{it} = \begin{cases} ROE_{it} = f(AILQ_{it}^+, AILQ_{it}^-, SIZE_{it}, COG_{it}, SRV_{it}, INR_{it}) \end{cases} \quad (3.2)$$

Results

Descriptive Statistics

Table 4.1:- Summary Statistics of FMCG sector (FMCGs)Full Sample

Variable:	ROE	AILQ	SIZE	COG	SRV	INF
Statistics						
Obs.	600	600	600	600	600	600
Mean	3.126	-0.879	4.428	2.332	-1.313	2.392
Maximum	7.711	1.933	7.208	2.869	2.873	2.907
Minimum	-4.516	-6.017	-1.376	0.953	-8.176	1.588
Std. Dev.	1.175	1.463	1.517	0.250	1.681	0.306
Skewness	-0.173	-0.454	-0.413	-0.599	-0.726	-0.735
Kurtosis	8.596	2.489	3.029	5.818	4.157	3.075
Statistics						
High Liquidity						
Obs.	300	300	300	300	300	300
Mean	3.239	-1.578	5.430	2.447	-1.558	2.392
Maximum	4.962	0.942	7.208	2.869	2.873	2.835
Minimum	-2.510	-5.169	2.258	1.838	-7.282	1.588
Std. Dev.	0.972	1.296	0.994	0.237	1.639	0.307
Skewness	-1.076	-0.119	0.134	-0.299	-0.370	-0.742
Kurtosis	6.540	2.508	2.282	1.810	3.732	3.073
Statistics						
Low Liquidity						
Obs.	300	300	300	300	300	300
Mean	3.012	-0.179	3.425	2.218	-1.068	2.393
Maximum	7.711	1.933	5.391	2.655	1.867	2.907
Minimum	-4.516	-6.017	-1.376	0.953	-8.176	1.588
Std. Dev.	1.340	1.275	1.266	0.207	1.689	0.306
Skewness	0.297	-1.194	-0.577	-2.174	-1.121	-0.727
Kurtosis	8.562	4.460	2.722	13.431	5.079	3.077

Source: Researcher’s computation and compilation using Eviews 13 (2024)

The FMCG (fast-moving consumer goods) industry data are shown in Table 4.1 above for each of the sample categories. The full-sample data structure appears to have comparable variability characteristics. All panel variables, with the exception of AILQ, have peaked

distributions that are leptokurtic and negatively skewed. Parallel variability conditions are also present for the high- and low-liquidity sample categories. All panel data, with the exception of the SIZE and ROE series under the high- and low-liquidity sample groups, respectively, are negatively skewed. ROE, RQS, SRV, and IN are present in the high-liquidity sample group.

Pre-Estimation Tests

The pre-tests conducted include cross-sectional dependence (CD) test, panel unit root tests and the co-integration test. The tests were conducted to examine the statistical healthiness of the sample data.

Cross-section Dependence Tests

The cross-sectional dependence (CD) test is conducted to ascertain the absence or otherwise of the common shocks among the entities in each sector. Thus, since the time period (T) is large relative to the size of the cross-sectional units or firms (N), that is, $T > N$ and $T \rightarrow \infty$, the Breusch-Pagan (BP) LM was employed for the CD test. The test is based on the null hypothesis of no cross-sectional dependence.

Table: Cross-section Dependence Test Results
Sample:FMCGs: $T = 60, N = 10$

Sector	FMCGs	
Variable	BP LM Stat.	$p < 0.01$
ROE	390.180	0.0000
TBQ	872.908	0.0000
AILQ	142.770	0.0000
RQS	184.358	0.0000
SIZE	431.102	0.0000
COG	217.693	0.0000
SRV	194.884	0.0000
INR	268.901	0.0000

Source: Researcher’s computation and compilation using Eviews 13 (2023)

The CD test results employing the BP LM test technique are shown in Table 4.2. According to test statistics and accompanying p-values, it appears that there is cross-sectional dependency among the chosen firms.

Panel Unit Root Tests

To determine if the panel series under investigation is stationarity, panel unit root tests were performed. Based on the findings of the CD test, all the variables seem to exhibit cross-sectional dependency, meaning that common factors or interdependence exist across the businesses in each sample, including the complete sample, high liquid firms, and low liquid firms.

Table: Panel Unit Test Results for FMCGs Models

Model: ROE-AILQ Full Sample				
CIPS Stat.				
Variable	Level	Δ	<i>I(d)</i>	Level
ROE	-2.1198	-4.1745***	I(1)	-2.1198
TBQ	-	-	-	-
AILQ	-3.5065***	-	I(0)	-
RQS	-	-	-	-3.111***
SIZE	-1.0242	-5.7234***	I(1)	-1.0242
COG	-2.3342***	-	I(0)	-2.3342***
SRV	-2.9897***	-	I(0)	-2.9897***
INR	-6.8704***	-	I(0)	-6.8704***
Model: ROE-AILQ High Liquidity				
CIPS Stat.				
Variable	Level	Δ	<i>I(d)</i>	Level
ROE	-2.3876**	-	I(0)	-2.3876**
TBQ	-	-	-	-
AILQ	-2.7394***	-	I(0)	-
RQS	-	-	-	-2.9152***
SIZE	-0.9986	-1.8410***	I(1)	-0.9986
COG	-2.2376***	-	I(0)	-2.2376***
SRV	-3.0627***	-	I(0)	-3.0627***
INR	-6.1900***	-	I(0)	-6.1900***
Model: ROE-AILQ Low Liquidity				
CIPS Stat.				
Variable	Level	Δ	<i>I(d)</i>	Level
ROE	-2.8571***	-	I(0)	-2.8571***
TBQ	-	-	-	-
AILQ	-3.2785***	-	I(0)	-
RQS	-	-	-	-2.6358***
SIZE	0.2650	-3.2584***	I(1)	0.2650
COG	-1.2838	-3.6252***	I(1)	-1.2838
SRV	-2.7512***	-	I(0)	-2.7512***
INR	-8.8997***	-	I(0)	-8.8997***

Source: Researcher’s computation using Eviews 13 (2023)

Note: *** and ** denote statistical significance at 1% and, 5% levels respectively

Panel Cointegration Test

This was conducted to ascertain the existence or otherwise of the long-run relationship among the variables in each model. Thus, the Kao Cointegration test method, which follows the Engle-Granger (EG) cointegration testing procedure for time series, was employed

Table: Panel Cointegration Test Results

Consumer-Goods Sector (CGs)

Model	<u>Full Sample: T = 60, N = 10</u>		<u>High Liquid: T = 60, N = 5</u>		<u>Low Liquidity: T = 60, N = 5</u>	
	ADF Stat.	p-value	ADF Stat.	p-value	ADF Stat.	p-value
ROE-AILQ	-1.8648**	-0.0311	-2.0525**	0.0201	-6.6251***	0.0000
ROE-RQS	-2.2917**	0.0110	-2.2997**	0.0107	-1.4673*	0.0711
TBQ-AILQ	-4.3825***	0.0000	-3.2901***	0.0005	-4.3217***	0.0000
TBQ-RQS	-4.1171***	0.0000	-3.2618***	0.0006	-4.1418***	0.0000

Source: Researcher’s computation using Eviews 13 (2023)

Note: ***, ** and * denote statistical significance at 1%, 5% and 10% levels respectively

The variables in each model have linear combination or long-run relationship in spite of having different orders of integration. Thus, the existence of the long-run relationships suggests that each of the models does not incorporate spurious relationship.

PMG Model Estimations for Consumer Goods (FMCGs) with Full-Sample Category

The model estimation presented herein involving the consumer goods sector for the full-sample

Table: PMG Model Estimation Results for FMCGs under Full-Sample Category
Sample:- T = 60 (2006Q1 – 2020Q4), N = 10

Model	1
Response Variable	ROE-AILQ
Independent Variable	ROE
Short-run Estimates	
ect_{ti-1}	-0.2097*** (-2.9746)
$\Delta AILQ_{ti}^+$	0.1201 (1.4360)
$\Delta AILQ_{ti}^-$	0.1190** (2.2319)
ΔRQS_{ti}^+	-
ΔRQS_{ti}^-	-
Long-run Estimates	
$AILQ_{ti}^+$	-0.6709*** (-6.2082)
$AILQ_{ti}^-$	-0.5602*** (-4.9622)
RQS_{ti}^+	-
RQS_{ti}^-	-
SIZE	-1.9002*** (-5.1515)
COG	1.4970*** (5.9895)

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<i>SRV</i>	0.2447*** (4.8958)
<i>INR</i>	0.7440*** (2.9614)
Diagnostics	
Log likelihood	-105.0342
Symmetry test:	
F-statistics	4.8061** (0.0288)
Chi-square (1)	4.8061** (0.0288)

Source: Researcher's computation, 2023. (Eviews 13)

Note: ***, ** and * denote statistical significance at 1%, 5% and 10% levels respectively. The values in the parentheses () are the *t*-statistics of the respective coefficients and diagnostics.

ROE-AILQ Nexus: Short-run Estimates for FMCGs Under Full-Sample Category

The short-run estimation produces a negative and statistically significant speed of adjustment coefficient (-0.2097) of the ECT (error correction term) term, as shown in Table 4.5. The coefficient for convergence falls between -1 and 0 as predicted. The return on equity (ROE) therefore adapts to, Q_{-+} , $AILQ_{--}$, SIZE, COG, SRV, and INR in the short term, according to the speed of adjustment coefficient. A negative AILQ change (Q_{--}) has a positive significant influence on return on equity (ROE), whereas a positive insignificant effect is exerted by a positive AILQ change ($AILQ_{+}$). In terms of size, an increase of one percent in AILQ will typically lead to an increase of around 0.12 percent in ROE. Conversely, a one-percent drop in AILQ will typically translate into a 0.119-percent drop in ROE. It appears that when AILQ changes positively, ROE reacts more marginally than when it changes negatively. However, in the short run, when economic agents (participants or institutions in the stock market and consumer goods sectors) are not working at full capacity, ROE reacts favourably but insignificantly to, $AILQ_{+}$.

ROE-AILQ Nexus: Long-run Estimates for FMCGs Under Full-Sample Category

Return on equity (ROE), appears to be negatively and significantly impacted over the long term by both positive ($AILQ_{+}$) and negative ($AILQ_{--}$). In terms of numbers, a one-percent increase in AILQ will, on average, cause a 0.67-percent drop in ROE. Conversely, a one-percent drop in AILQ would typically lead to a gain in ROE of around 0.56 percent. However, in the long term, when economic actors (participants or institutions in the stock market and consumer goods sectors) are working at maximum potential, ROE responds adversely and strongly to, $AILQ_{+}$ and, $AILQ_{--}$.

Additionally, it appears that variations in the size of the business (SIZE) have a negative and considerable impact on the return on equity (ROE) for the FMCGs as a whole. However, ROE reacts favourably and strongly to inflation, stock return volatility (SRV), and corporate governance (COG) (INR). In the ROE-AILQ nexus within the FMCGs full-sample category, numerically, ROE seems to be elastic with respect to SIZE and COG while being inelastic with respect to SRV and INR. However, based on the statistical significance of the symmetry test statistics, the long-run symmetric test supports the existence of an asymmetric or non-linear long run impact of stock liquidity measure on return on equity (F-statistics and Chi-square). Thus, there is evidence of an asymmetric link between return on equity, an accounting-based financial performance measure, and Amihud illiquidity ratio, a trade-based stock liquidity indicator.

Model Estimations and Results for FMCGs with High-Liquid Sample Category

The model estimations presented herein involving the FMCGs for the high-liquid sample category

Table PMG Model Estimation Results for FMCGs: High-Liquid-Sample Category
Sample:- $T = 60$ (2006Q1 – 2020Q4), $N = 5$

Model	1
Response Variable	ROE-AILQ
Independent Variable	ROE
Short-run Estimates	
ect_{ti-1}	-0.2471** (-2.0988)
$\Delta AILQ_{ti}^+$	0.0517 (0.4344)
$\Delta AILQ_{ti}^-$	0.1952** (2.3489)
ΔRQS_{ti}^+	-
ΔRQS_{ti}^-	-
Long-run Estimates	
$AILQ_{ti}^+$	-0.5852*** (-3.0589)
$AILQ_{ti}^-$	-0.5103*** (-2.6715)
RQS_{ti}^+	-
RQS_{ti}^-	-
SIZE	-0.4807* (-1.7378)
COG	0.9497** (2.3202)
SRV	0.28012*** (3.1722)
INR	0.7368** (2.0877)

Diagnostics	
Log likelihood	30.8801
Symmetry test:	
F-statistics	7.7452*** (0.0058)
Chi-square (1)	7.7542*** (0.0054)

Source: Researcher's computation, 2023. (Eviews 13)

Note: ***, ** and * denote statistical significance at 1%, 5% and 10% levels respectively. The values in the parentheses () are the *t*-statistics of the respective coefficients and diagnostics.

ROE-AILQ Nexus: Short-run Estimates for FMCGs Under High-Liquid Sample Category

The short-run calculation of the ECT (error correction term) provides a negative and statistically significant speed of adjustment coefficient (-0.2471), as shown in Table 4.6. The return on equity (ROE) therefore adapts to, Q_{-+} , $AILQ_{--}$, SIZE, COG, SRV, and INR in the short term, according to the speed of adjustment coefficient. A negative AILQ change (Q_{--}) has a positive significant influence on return on equity (ROE), whereas a positive insignificant effect is exerted by a positive AILQ change ($AILQ_{+}$). Measurably speaking, a one-percent boost in AILQ will, on average, translate into a 0.052 percent improvement in ROE. Conversely, a one-percent decline (drop) in AILQ would typically lead to a roughly 0.195-percent decrease in ROE.

ROE-AILQ Nexus: Long-run Estimates for FMCGs Under High-Liquid Sample Category

Return on equity (ROE), appears to be negatively and significantly impacted over the long term by both positive ($AILQ_{+}$) and negative ($AILQ_{--}$) AILQ developments. In terms of numbers, a one-percent increase in AILQ will, on average, cause a 0.59-percent drop in ROE. Conversely, an increase in ROE of around 0.51 percent will typically follow a one percent decline in AILQ. Therefore, it seems that ROE is not sensitive to, Q_{+} and, $AILQ_{--}$. Additionally, it seems that variations in the size of the business (SIZE) have a negative and significant impact on the return on equity (ROE) of the FMCGs' high-liquid sample category. In contrast, corporate governance (COG), stock return volatility (SRV), and inflation have a positive and considerable impact on ROE (INR). Regarding SIZE, COG, SRV, and INR, ROE's numerical behaviour in the ROE-AILQ nexus under the FMCGs high-liquid sample category seems to be inelastic.

4 Model Estimations and Results for FMCGs with Low-Liquid Sample Category

The model estimations presented herein involving the FMCGs for the low-liquid sample category

Table: PMG Model Estimation Results for FMCGs: Low-Liquid-Sample Category
Sample-: $T = 60$ (2006Q1 – 2020Q4), $N = 5$

1	
Model	<i>ROE-AILQ</i>
Response Variable	<i>ROE</i>
Independent	
Variable	
Short-run Estimates	
ect_{ti-1}	-0.2172* (-1.6905)
$\Delta AILQ_{ti}^+$	0.2393** (2.0716)
$\Delta AILQ_{ti}^-$	-0.0104 (-0.1159)
ΔRQS_{ti}^+	-
ΔRQS_{ti}^-	-
Long-run Estimates	
$AILQ_{ti}^+$	0.5205*** (2.7870)
$AILQ_{ti}^-$	-0.6255** (-2.0346)
RQS_{ti}^+	-
RQS_{ti}^-	-
<i>SIZE</i>	-1.6632** (-2.5079)
<i>COG</i>	2.7322*** (2.8188)
<i>SRV</i>	-0.4699 (-1.5778)
<i>INR</i>	0.2284

	(0.3959)
Diagnostics	
Log likelihood	-134.8969
Symmetry test:	
F-statistics	4.6376*** (0.0322)
Chi-square (1)	4.6376*** (0.0313)

Source: Researcher's computation, 2023. (Eviews 13)

Note: ***, ** and * denote statistical significance at 1%, 5% and 10% levels respectively. The values in the parentheses () are the *t*-statistics of the respective coefficients and diagnostics.

ROE-AILQ Nexus: Short-run Estimates for FMCGs Under Low-Liquid Sample Category

Table above (Table: PMG Model Estimation Results for FMCGs: Low-Liquid-Sample Category) reveals that a negative AILQ change (Q_{-}) has a negatively negligible influence on return on equity (ROE), whereas a positive AILQ change ($AILQ_{+}$) has a positively significant impact on ROE, an accounting-based financial metric. In terms of size, an increase of one percent in AILQ will typically lead to an increase of around 0.24 percent in ROE. Conversely, a rise in ROE of about 0.0104 percent will be produced by a one percent decline (reduction) in AILQ. Therefore, it seems that ROE is not sensitive to Q_{+} and $AILQ_{-}$. (Amihud illiquidity ratio as a trade-based stock liquidity measure). It appears that when AILQ changes positively, ROE reacts more than when it changes negatively (a trade-based stock liquidity measure).

ROE-AILQ Nexus: Long-run Estimates for FMCGs Under Low-Liquid Sample Category

In the long term, return on equity (ROE), appears to be significantly impacted both favourably and adversely by changes in the AILQ, with positive changes (Q_{+}) and negative changes ($AILQ_{-}$) having the opposite effect. In terms of numbers, an increase of one percent in AILQ will, on average, lead to an increase of around 0.52 percent in ROE. Additionally, it seems that modifications to corporate governance (COG) and firm size (SIZE) had a favourable and negative impact, respectively, on the return on equity (ROE) of the FMCGs' low-liquid sample

category. In the meanwhile, ROE reacts to inflation (INR) and stock return volatility (SRV) substantially differently—positively and adversely, respectively. In the ROE-AILQ nexus under the FMCGs low-liquid sample category, numerically, ROE seems to be elastic with respect to SIZE and COG, but inelastic with respect to SRV and INR).

Findings and Conclusion

In the short run, when economic agents (businesses or players in the Fast-Moving Consumer Good sector) are not operating to their full capacity, variations in Amihud illiquidity that are both positive ($AILQ_{+}$) and negative ($AILQ_{-}$) have an effect on return on equity (ROE). In the three sample categories, both positive and negative changes in Amihud illiquidity (stock Liquidity) have a substantial long-term impact on return on equity (ROE) when economic agents—financial sector players or institutions—are performing at their highest level of efficiency. As such, stock liquidity in the FMCG industry steadily improves return on equity. Since they are asymmetrically different (based on the asymmetry test), the positive (growing) and negative (decreasing) changes in Amihud illiquidity have distinct effects on return on equity; nonetheless, the negative change (decreasing component) seems to have a stronger influence.

Furthermore, compared to FMCG companies with excellent stock liquidity, those with poor stock liquidity would have more asymmetric effects on their return on equity over time from changes in the Amihud illiquidity index. Consequently, return on equity, an accounting-based financial performance indicator, is greatly impacted by the Amihud illiquidity measure's assessment of stock liquidity. This validates the findings of Karim and Rashid (2020), who demonstrated that stock liquidity enhances a company's financial performance. Thus, demonstrating that fluctuations in stock liquidity will significantly impact an organization's profitability.

In conclusion, stock liquidity has a positive effect on a company's financial performance, this implies that economic variables like inflation, which could lead to a reduction in liquidity of stocks, has a greater propensity to reduce profitability of firms.

Recommendations

Based on the findings from this study, the following recommendations are suggested:

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1. The government should adopt rules and regulations that are more sector-specific in order to influence the Nigerian stock market and enable investors to make investments in areas that are essential to the country's economy as a whole. This can be accomplished by giving more security to crucial yet data-dictated areas.
2. Furthermore, since market turbulence resulting from inflation-induced uncertainty is harmful to the stock market and the economy as a whole, the government must possess the political will to implement measures targeted at controlling and minimizing inflation.

REFERENCES

- Admati, A. R., & Pfleiderer, P. (2009). The Wall Street walk and shareholder activism: Exit as a form of voice. *Review of Financial Studies* 22:2645–85.
- Aguiar, E., & Reddy, Y. V. (2017). Corporate diversification on firm's financial performance: An empirical analysis of select FMCG companies in India.
- Audax, A. (2018). *Factors affecting financial performance of manufacturing firms listed in Nairobi securities exchange Kenya*. A Research Project submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Masters in Business Administration (MBA). <http://erepo.usiu.ac.ke/bitstream/handle/11732/3952/ANITHA%20AUDAX%20MBA%202018.pdf?sequence=1&isAllowed=y>. Accessed March 01, 2022.
- Batten, J., & Vo, X. V. (2019). Liquidity and firm value in an emerging market. *The Singapore Economic Review*, 64(2), 365–376. <https://doi.org/10.1142/S0217590817470063>. Retrieved September 3, 2021.
- Berry, A. J., Broadbent, J. & Otley, D. (2005). *Management control: Theories, issues and performance*. New York: Palgrave Macmillan
- Boloupremo, T. (2020). Stock market liquidity and firm performance in the Nigerian Stock Exchange. *International Journal of Commerce and Finance*, 6(1), 31-40
- FAO (2018). The state of food security and nutrition in the world. *Food and Agriculture Organization of the united nation*. www.fao.org/state-of-food-security-nutrition www.fao.org/state-of-food-security-nutrition › 2018 ›

- Gbalam, P. E., & Nelson, J. (2019). Testing the Weak Form Efficiency of the Nigeria Stock Exchange Market. *European Journal of Accounting, Auditing and Finance Research*, 7(10): 10-22
- Goyenko, R. Y., Holden, C. W., & Trzcinka, C. A., (2009). Do liquidity measures measure liquidity? *Journal of Financial Economics*, 9(2), 153–81.
- Hongli, J., Ajorsu, E. S., & Bakpa, E. K. (2019). The Effect of Liquidity and Financial Leverage on Firm Performance: Evidence from Listed Manufacturing Firms on The Ghana Stock Exchange. *Research Journal of Finance and Accounting*, 10(8), 91-100.
- Khanna, N., & Sonti, R. (2004). Value creating stock manipulation: Feedback effect of stock prices on firm value. *Journal of Financial Markets*, 7(3), 237-270
- KPMG (2020). *Impact of covid-19 on the Nigerian consumer and industrial market*. KPMG April Report. Printed in Nigeria
- Kumar, P. (2017). Impact of earning per share and price earning ratio on the market of share: A study on the auto sector in India. *International Journal of Research*: 5(2), 113–118
- Marc, M., Peljhan, D., Penikvar, N., Sobota, A. & Tekavcic, M. (2010). Performance measurement in large Slovenian companies: An assessment of progress, 2010 EABR and ETLC conference paper.
- Maug, E. (1998). Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control? *Journal of Finance*, 5(3), 65-98.
- Mohammed, M., & Yusheng, K. (2019). The effect of liquidity and capital structure on the financial performance of firms listed on the Ghana Alternative market (GAX). *International Journal of Research in Economics and Social Sciences*, 8(2), 74–92.
- Norvaišienė, R., & Stankevičienė, J. (2014), Companies' Internal Factors and Stock Liquidity: Evidence from the Baltic Markets, *Economics and Business*, 2(3), 2-6.
- Oladejo, M.O., & Oladipupo, A. U., (2011). Capital Regulation and the Performance of the Nigerian banks: Need for Review, *Journal of Emerging Trends in Economics and Management Sciences*, 2(3), 215 – 224.

- Olorunfemi,S., Tomola, M. O., Adekunjo, F.O. & Ogunleye, E.O (2013). Manufacturing Performance In Nigeria: Implication For Sustainable Development. *Asian Economic and Financial Review*, 3(9):1195-1213.
- Osadune, R., & Ibenta, S. (2018). Evaluation of the financial performance of deposit money banks in Nigeria (2001-2014). *IIARD International Journal of Banking and Finance Research*, 4(2), 23–50.
- Owido, P. K., Onyuma, S. O., & Owuor, G. (2013). A GARCH Approach to Measuring Efficiency: A Case Study of Nairobi Securities Exchange. *Research Journal of Finance and Accounting*, 4(4): 1-16
- Palmiter, A.R. (2002). Mutual fund voting of portfolio shares: Why not disclose. *Cardozo Law Review*, 2(3), 1419- 1491.
- Singh, T., Gupta, M., & Sharma, A. (2015). Stock market liquidity and firm performance. *Journal of Business and Management (IOSR-JBM)*, 1, 54-59.
- Subrahmanyam, A., & Titman, S. (2001). Feedback from stock prices to cash flows. *The Journal of Finance*, 56(6), 2389-2413.
- Sudiyatno, B., & Suwarti, T. 2022. The Role of Liquidity in Determining Firm Performance: An Empirical Study on Manufacturing Companies in Indonesia. *European Journal of Business and Management Research*. 7, 6 (Nov. 2022), 183–188.
- Zwingina, C. T., & Opusunju, M. I. (2017). Impact of innovation on the performance of small and medium scale enterprise in Gwagwalada, Abuja, *International Journal of Entrepreneurial Development, Education and Science Research*, 4 (1), 31-45.