

Liquidity, Leverage and Firm Value Nexus of Banks Listed on the Ghana Stock Exchange: A Panel Granger Causality Analysis

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This study aims to examine the linkage among liquidity, leverage, and firm value. The study employed panel data from listed banks on the Ghana Stock Exchange from 2010 to 2020 and a quantitative design to achieve the objectives of the study. The purposive sampling approach is used to source data from the Ghana Stock Exchange (GSE) and various entities' websites. With the aid of Granger causality, the study demonstrates a causal relationship between liquidity and firm value and a unidirectional causality between leverage and firm value. Further, the study showed that prudent leverage structures improve firm value by optimizing debt levels to improve shareholders' worth. The study recommended that firms need to sustainably manage their debts and liquidity to enhance their firm value because investing in viable projects with these resources of a firm will overall enhance firm value. In so doing, this will enhance the level of trust and confidence of diverse stakeholders such as clients, owners and potential investors, since shareholder's wealth emanates from the sustainable use of firm resources which in turn promotes firm value.

Keywords: liquidity, leverage, firm value, Tobin's Q, Granger causality

INTRODUCTION

In recent times, the changes in the contemporary business landscape have compelled firms to sustain their competitive advantage by investing in advanced technologies like artificial intelligence (AI) and machine learning, among others, to automate their organisational processes (Zhong et al., 2023). Embracing these modern technologies often require firms to channel resources for these initiatives, which is evidenced by changes in financing decisions as well as the outflow of resources. On the other hand, the investment levels of firms in the service sector are consistently declining, despite an increase in Foreign Direct Investment (FDI) in sub-Saharan Africa. For instance, a report by the United Nations Conference on Trade

and Development (UNCTAD) in 2019 indicated that despite a global decline in FDI, inflows to sub-Saharan Africa increased by 13% by approximately US\$32 billion (Nketiah-Amponsah & Sarpong, 2020). As a result, the issues and literature surrounding financing decisions, capital structure decisions, liquidity, and how resources are managed among firms have become a great issue of concern among various stakeholders (Fama & French, 2002; Tetteh et al., 2023; Endri & Fathony, 2020; Myers & Majluf, 1984; Zhong et al., 2023).

Liquidity, a cornerstone of financial markets, explains how quickly large quantities of securities can be traded at a low cost while the price remains the same or unchanged (Batten & Vo, 2019). Liquidity is a vital component for pricing assets and expected stock returns (Zhang et al., 2018). It is associated with innovations, institutional investor demands in the aggregate stock market, and stock returns (Fang et al., 2009). Liquidity reveals the sensitivity of individual stock market securities and their efficiency (Zhang et al., 2018; Batten & Vo, 2019). In trading, liquidity is perceived as an asset that has the potential to be converted into another without losing its value (Zhang et al., 2021). Therefore, understanding market liquidity is imperative due to its profound impacts on value creation and investor stock returns (Agarwal et al., 2016).

In asset management, while liquidity provides insights into the dynamics that influence investor behaviour and market performance, leverage offers insights into making capital structure decisions (Amidu, 2007; Li & Stathis, 2017; Huynh et al., 2020). Leverage is a ratio that explains the relationship between total assets and the equity position of an organisation. According to Adrian and Shin (2010), leverage decreases when equity remains the same or decreases but the total assets increase. This suggests a negative association between equity and leverage, which could be possible when executives do not manage the balance sheet effectively (Adrian & Shin, 2010; Huynh et al., 2020). Consequently, continuous changes in the assets and resources of firms place executives in a stringent position to consider other sources of financing and capital structure decisions (Amidu, 2007; Khan, 2011).

Previous studies have examined the influence of liquidity on expected firm outcomes. Bekaert et al. (2007) demonstrated that unexpected uncertainties emanating from liquidity shocks are positively associated with returns, while returns are negatively correlated with dividend yields and returns. Liquidity shocks further affect expected returns and cost of capital (Albuquerque et al., 2020). Studies also show that expected returns increase with stock illiquidity (Acharya et al., 2013; Amihud, 2002; Baker & Stein, 2004; Fang et al., 2009), and this association can change during an economic crisis which suggests that the impact of liquidity on expected returns is not the same across time and context (Baradarannia & Peat, 2013; Zhang et al., 2021). Stock liquidity is positively associated with future expected returns and plays a key role in the management of short-term decision-making (Huang & Ho, 2020). On the other hand, studies have examined how expected returns impact liquidity, and Pastor and Stambaugh (2003) affirm that expected returns are very sensitive to liquidity shocks and that there are greater expected returns when liquidity is low. Although these studies show that liquidity is associated with firm outcomes, it is crucial to note that the majority of these studies were conducted in developed countries using different measures (Ahmed & Bhuyan, 2020). For instance, the majority of the studies have relied on accounting-based measures such as ROE and ROA to measure the value of a firm but the current study will rely on Tobin's Q a market-based to examine the association between the variables of interests, specifically from a developing country.

Moreover, the influence of financing decisions on a firm's operations is an essential aspect of a business, as it contributes to the overall success and development of organisations (Tetteh et al., 2023). According to Amidu (2007) capital structure decisions are associated with bank size, corporate tax, growth, asset structure, and profitability. In another study, Ibhagui and Olokoyo (2018) noted that leverage has a positive effect on firm performance. As a result, firms encountering financing and liquidity issues often turn to alternative sources to raise funds to finance their strategic initiatives. Also, the liquidity position of an organisation affects management decisions. This is because liquidity affects a firm's ability to continue its normal business operations and its ability to undertake research and development, which increases the market value of the organisation (Huang & Ho, 2020; Ahmed & Bhuyan, 2020). Moreover, the liquidity and solvency position of financial institutions affects the entire economy, as difficulties in mobilising adequate funds for investment projects and asset management arise from poor liquidity and solvency.

Unlike other firms, banks offer depositors liquidity on demand through current accounts and extend credit and liquidity to borrowers through lines of credit. For this reason, their basic duties have been centered around effective management of solvency and liquidity (Amidu, 2007; Uddin et al., 2022).

The studies on the liquidity, leverage, and firm value nexus of banks are, however, relatively sparse in the banking literature. As a result, it is still not clear how banks enhance their firm value and what factors affect their financing decisions. Zhang et al. (2021) and Batten and Vo (2019) found that liquidity is negatively associated with firm value. Contrarily, Pastor and Stambaugh (2003) and Fang et al. (2009, 2014) found that liquidity is positively associated with firm value. Again, Fosu et al. (2016) observed that leverage is negatively associated with firm value. Uddin et al. (2022) showed that leverage structure enhances the value of firms in Bangladesh. Fama and French (2002) argue that the more profitable firms tend to pay dividend higher dividends, whereas firms with fewer investments have lower market leverage. This suggests that a firm that is not investing heavily in new projects or assets, is likely to have less debt relative to equity, resulting in lower leverage. In contrast, more profitable firms distribute a larger portion of their earnings as dividends. This behavior indicates a strategic financial decision where profitable firms reward shareholders directly through dividend payments, while firms with limited investment opportunities maintain a more conservative capital structure with lower debt levels (Batten & Vo, 2019). Nonetheless, Amidu (2007) pointed out that over 50 per cent of the quoted firms' assets in Ghana are financed by debt, and there is a link between debt ratio and firm size, growth, asset tangibility, corporate tax, and profitability. Given the distinct features of banks, the services they render, and the financial market in which they operate in, often surrounded by high volatility, less liquidity, funding limitations due market conditions, limited operational resources, and different investor behaviour as compared to developed markets, it is evident that there is a need to examine this association. Therefore, the current study seeks to examine the nexus between liquidity, leverage, and firm value.

The remaining portion of this article is organised as follows: Section 2 evaluates the relevant literature and generates testable hypotheses. Section 3 covers the sample, empirical design, and measurement of essential variables. Section 4 summarises the regression results and provides robustness tests. Finally, the last section provides a conclusion for the study.

LITERATURE REVIEW

Theoretical Review

Pecking Order Theory

Prior literature has underscored the relevance of the pecking order theory in assisting experts to understand the optimal capital structure of a corporation. (Myers & Majluf, 1984; Fama & French, 2002; Frank & Goyal, 2007). The theory assumes that a firm should initially fund its projects from internal sources before seeking external sources if not sufficient. Although external sources of financing are considered crucial for sustaining the development of a firm, it does not provide sufficient legal grounds to protect the interest of investors (Lemmer, & Zender, 2010). Furthermore, since managers have more information about the company than investors, it is pertinent for stakeholders to make decisions on the source of financing that can decrease any additional cost incurred due to asymmetric information especially if external financing is required (Adair & Adaskou, 2015; Fama & French, 2002). Additionally, there has been a debate on the optimal financing options available that promote firms' value, arguments surrounding these issues claim that debt is less susceptible to information asymmetry as compared to equity (Fosu et al., 2016). Due to information asymmetry, investors could estimate the price-sensitivity of their bonds and their value based on these payments, as well as the tenure of their instruments (Dang, Gorton, & Holmstrom, 2010). To summarize, this theory advocates for corporations to prioritize internal sources of funds over external sources especially equity, until their debt capacity is achieved. This practice ensures that they borrow an amount that is considered optimal for their financial health to enhance firm value (Fosu et al., 2016).

Agency Theory

Initial contributions to Agency theory were made by Jensen and Meckling (1976). The theory emphasises on the kind of relationship that exists between the principal (shareholder or owners) and engagement with the agent (management) (Bakri et al., 2020). The fiduciary relationship comes along with its obligations that the agent is expected to fulfil and overcome (Suyanto et al., 2021; Bukari et al., 2022). This implies that the principal gives the right to the agent to act on his behalf based on the kind of agreement prevailing between parties, where the agent is entrusted with resources and capabilities and in turn acts as the owner based on the agreement (Batten & Vo, 2019). However, every individual tend to have diverse kinds of interests (conflicting interests) and as a result, the interests of the principal and agent might differ resulting in agency conflicts (Ibhagui & Olokoyo, 2018; Bukari et al., 2019). Agency theory assumes that each individual is motivated purely by his or her interests, resulting in a conflict of interest between the agent and the principal (Amidu, 2007). Delegating authority to run the company and demonstrating management effectiveness through profitability and leverage ratios will affect dividend distribution and boost company value (Ibhagui & Olokoyo, 2018; Amidu, 2007). This implies that the main goal of the principal is to enhance his wealth, whereas management's goal is to enhance his well-being. Therefore, the current study appears to support the notion that shareholders possessing the necessary resources for operating a business will contract an agent to be custodians of the entity and thereby expect them to sustainably manage the level of liquidity and leverage in efforts to improve the value of the firm (Huynh et al., 2020; Ibhagui & Olokoyo, 2018).

Empirical Review and Hypothesis Development

Liquidity

Typically, the concept of liquidity is a complex one, and oftentimes researchers find it difficult to define and estimate it (Lesmond, 2005; Batten & Vo, 2019). While Lesmond (2003) mentions that "liquidity is a slippery and elusive concept, in part since it encompasses several transactional properties of a market," Hongli et al. (2019) note that liquidity emphasises the ability of an entity to strategically manage the level of current assets and liabilities to assist firms in efficiently meeting their short-term obligations into the foreseeable future. Liquidity tends to influence the flow of funds in and out of an entity, which most times affects the dividend pay-out that firms are required to offer to investors and shareholders as well as tax obligations (Chordia et al., 2008; Hongli et al., 2019 & Anlesinya et al., 2014b). This suggests that liquidity plays a vital role in the existence and success of a firm; hence, proper management is required for sustainable operation. Contrarily, firms facing liquidity issues often engage in diverse engagements to present good performance that is supposed not to be so, such as earnings management to safeguard the image of the firm (Xiao, 2015; Anlesinya et al., 2014a). In this study, liquidity is described as the capacity of a firm to settle its short-term obligations as they fall due. This aids in assessing the ability of banks to meet any expected and unexpected demands in the short run.

Leverage

According to Goel et al. (2015), financial leverage is an important component of the capital structure of a firm. Ibhagui and Olokoyo (2018) argued that leverage represents one major source of funding many firms rely on if the available resources are unable to meet the expected requirement. Farooq et al. (2016) demonstrated that managers' capital structure decisions to rely on leverage enhanced the value of companies situated in Pakistan.

Firm Value

The firm value of a business represents the wealth of its owners, which is typically reflected in the firm's share prices (Brainard & Tobin, 1968; Endri, 2018). This implies that if the value of a company's shares has increased over time, it will attract both new and existing investors. According to the Q theory, a firm with a high Tobin's Q value represents a lucrative avenue for stakeholders to invest in, and vice versa. Ibhagui and Olokoyo (2018) mentioned that a higher Q ratio often places a firm in a favourable position to

attract additional funding sources, whether debt or equity. This means that investors are more willing to put their money into companies with a larger and more favourable Q ratio.

There has been a renewed interest by scholars and experts in assessing the association between liquidity, leverage and firm value due to the dynamic changes in the financial sector caused by uncertainties such as the COVID-19 pandemic and innovations. According to Zhong et al. (2023), the advancement in technology (e.g., AI) has affected the liquidity held by banks. Moreover, several attempts by scholars to establish the relationship between financing decisions and firm outcomes have highlighted the relevance of sustaining levels of liquidity and financial leverage (Fama & French, 1998; Amihud, Mendelson, & Pederson, 2005). Accordingly, effectively managing the resources of banks gained from sustainable financial decisions improves client satisfaction (Lesmond, 2005). Therefore, liquidity and leverage may have potential association with firm value, however, to date empirical findings have been mixed.

Liquidity and Firm Value

Early studies and analysis have shown that the level of liquidity a firm has enhances its value. In an initial study on sampled firms in the US by Fang et al. (2009), it was shown that stock liquidity positively affects firm value as a result of enhanced management compensation and more informative stock prices. In that same year, Edmans and Danso (2011) investigated the association between block holder trading and managerial myopia in the US market, where small blockholders dominate. They report that these investors enhance firm value despite lacking strong control rights. This is due to the motivation of investors to trade on fundamental value, encouraging managers to strategize and invest in long-term stocks rather than short-term ones. In Asia, Huang et al. (2016) discovered that cross-listing improves liquidity, lowers transaction costs, and has less information content in Chinese stocks traded in Hong Kong, implying that it improves stock price informativeness and gives valuation gains to firms. Nguyen et al. (2016) and Zhang et al. (2018) demonstrated that higher stock liquidity can lead to a significant improvement in firm value. In a similar study conducted on Indonesian Oil and Gas mining companies, Hasanudin et al. (2020) revealed that liquidity is positively associated with firm value. Swagatika and Ajaya (2018) showed that there is a significant linkage between liquidity and the profitability of firms in India. Contrarily, Batten and Vo (2019) studied the nexus that pertains to stock market liquidity and Vietnamese firms' value. They found that firm value and liquidity had a negative association and criticised that this could be deficient as a result of the differences in leverage and pricing-based theories. The study focused on firms quoted on the Ho Chi Minh City Stock Exchange operating in robust and complex industries in Vietnam. Also, Zhang, Gao and Li (2021) reported that during the COVID-19 outbreak stock liquidity attained a negative significant relationship with the firm value among Chinese listed firms. Nevertheless, recent studies by Uddin et al. (2022) and Nguyen and Dao (2022) showed that stock liquidity has a significantly positive association with firm value.

Leverage and Firm Value

Moreover, regarding the association between leverage and firm value, Fama and French (1998) demonstrated that firm value is positively related to debts, whereas dividends and firm value are negatively related. They added that this finding obscures any tax effects on financing decisions. Focusing on publicly traded companies in Australia, Li and Stathis (2017) identified factors influencing firms' decisions to include leverage in their capital structure. They highlighted weaker support for the pecking order hypothesis and increased support for the trade-off theory in the Australian context, providing empirical support for capital structure theories (Amidu, 2007; Yazdanfar & Öhman, 2015). In another study conducted in India by Tripathy and Shaik (2020), relying on the pecking order theory and static trade-off theory, they revealed that leverage has a positive impact on firm performance. This suggests that the capital structure decisions of firms situated in India adhere to well-established financial theories that allow them to improve their operational outcomes. Accordingly, in attempts to improve financing decisions and ensure adequate capital structure (Jihadi et al., 2021; Li, Anlesinya et al. 2018 & Stathis, 2017; Myers & Majluf, 1984; Amidu, 2007), studies have directed attention to understanding the relationship between leverage and firm value.

Mishra and Dasgupta (2019), examining the cross-impact of leverage and firm performance, showed a negative association between debt and performance. On the other hand, Huynh et al. (2020) highlighted that information asymmetry negatively influences firm value; however, financial leverage helps in mitigating this effect. This implies that effective working capital management aids in overcoming information asymmetry. This assertion was affirmed by a study by Samo and Murad (2019) while examining the impact of leverage and liquidity on profitability. They showed that financial leverage exhibited a negative association with profitability, which suggests the potential risks that could be associated with higher debt levels in pursuit of increased returns. Similarly, Endri and Fathony (2020) reported that firm size, leverage, and growth do not influence firm value. From 2009 to 2012, Yazdanfar and Ohman (2015) employed 15,897 Swedish SMEs from five different industries to assess the effect of three different types of debt ratios on profitability: trade credit, short-term debt, and long-term debt. The findings indicate that all categories have a detrimental association.

Liquidity, Leverage and Firm Value

In addition, Hongli et al. (2019) studied the influence of liquidity and leverage on the financial performance of some quoted manufacturing firms in Ghana. The study found that liquidity had a positive significant influence on firm performance while leverage had a strong positive effect on firm performance. However, they criticised the heavy reliance on debt finance since its consequences are highly detrimental and could easily result in bankruptcy, which could be prevented. Pratt et al. (2023) discovered that, in general, the use of leverage improves firm value, which is in line with the trade-off theory; nonetheless, the inverse link between leverage and firm value was a transient occurrence and is likely attributed to corporations using tax loss carrybacks in reaction to tax reforms. Gathering data from Chinese companies, Alarussi and Gao (2023) documented that firm size, working capital, and intangible assets have positive and significant relationships with profitability, while liquidity has a negative and strong relationship. Again, leverage, measured by debt ratio and leverage ratio, showed mixed results, with a positive association with ROA but not with Earnings Per Share (EPS) (Alarussi and Gao, 2023). Bui et al. (2023) examined the relationship between capital structure and firm value of Vietnamese stock market enterprises. Relying on data from 769 companies from 2012 to 2022, they revealed that the debt ratio has a favourable impact on return on assets, return on equity, and Tobin's Q, whereas short-term and long-term debt ratios hurt these measures. A study conducted by Tahu and Susilo (2017) on the impact of liquidity, leverage, and profitability on the value of manufacturing companies listed on the Indonesian Stock Exchange shows that profitability has a considerable positive impact on company value, whereas liquidity and leverage have a negligible positive or negative impact on firm value. According to Endri and Fathony (2020), firm value is positively associated with profitability and capital structure whereas liquidity, firm size, and growth did not show any association with firm value. Pattiruhu and Paais (2020) documented that liquidity, profitability, and firm size are not associated to firm value, but dividend policy and leverage have a positive impact on firm value. Farooq and Masood (2016) investigated the impact of financial leverage on the value firms producing cement in Pakistan. They showed a positive relationship between financial leverage and firm value, which underscores that the potential for value creation includes having an optimal capital structure.

METHODOLOGY

Data and Sample

The sample included all banks quoted on the Ghana Stock Exchange and were actively involved in the stock market throughout the entire study period from 2010 to 2020. Using the purposive sampling approach, the data was sourced from the annual financial reports of the selected banks. Due to operational and goal differences as well as different regulatory requirements among financial institutions; hence, the current study concentrated solely on banks.

Empirical Model Specification

The current study employed this empirical model to assess the association between the variables of interest:

$$FV_{it} = a_{it} + \beta_1 LIQ_{it} + \beta_2 LEV_{it} + \beta_3 GROWTH_{it} + \beta_4 SIZE_{it} + \beta_5 PROF_{it} + \mu_{it} \quad (1)$$

where FV_{it} = Firm value; LIQ_i = Liquidity measure; LEV = Leverage of firm; $PROF_i$ = Profitability; $GROWTH$ = Growth of firm; $PROF_i$ = Profitability; $SIZE$ = Size of firm; Index i = the number of firms; Index t = the time period; β = represents the co-efficient of the /variable; μ_{it} = Error term; and a_0 = the constant. Table 1 provides a summary of the measurements/description as well as expected signs of both independent and dependent variables of this study.

TABLE 1
SUMMARY OF VARIABLE MEASUREMENT

Variable	Definition	Hypothesis	Expected sign
FV	Tobin's Q given as; Market capitalization/ Total assets		
LIQ	Cash and cash equivalent / Current liabilities	<i>H1</i>	+
LEV	Total liabilities divided by Total Equity	<i>H2</i>	+
GROWTH	Annual percentage change in sales		
SIZE	The natural logarithm of the firm's total assets, number of employees and revenue		
PROF	Net income/ Total equity		

Notes: FV= Firm value; LEV = leverage; LIQ= liquidity; GROWTH= firm growth; SIZE= firm size; PROF= profitability

RESULTS AND DISCUSSION

Descriptive Statistics of Variables

The summary from the descriptive statistics in Table 2 showed that liquidity attained a mean score of 4.812 and a standard deviation of 4.156. These findings show that on average the firm's understudy engages in working capital management practices which allows them to settle their current liabilities with its available short-term funds. The average value of leverage during the study period was 0.835 which showed a variability of 0.110 as the standard deviation. This suggests that the firm's understudy relies on debt as a major source of financing over equity. Furthermore, the average score of firm value (Tobin's Q) was 0.247 which is way below 1 suggesting that on average the sampled firms did not perform quite well. This explains that, on average, the firm's capitalisation is not as much worth as it costs to replace the assets of the entity. The standard deviation for Tobin's Q variable was 0.453. The average value of the profitability under the period of study was 0.667 with a standard deviation of 0.853. The average score of the company size during the study period was 9.365776 with a standard deviation of 0.426. Further, firm growth ranged from 7.317 to 9.288 and a mean value of 8.492.

TABLE 2
DESCRIPTIVE STATISTICS

	Obs.	Mean	Max	Min	SD
FV	96	0.247134	3.687577	0.000000	0.452517
PROF	96	0.666949	5.503740	0.000000	0.853105
SIZE	96	9.365776	10.18539	8.224261	0.425963
LIQ	99	4.812223	21.14067	0.397020	4.156862
GROWTH	99	8.492009	9.287557	7.316557	0.393468
LEV	99	0.834709	1.227228	0.026802	0.109874

TABLE 3
CORRELATION MATRIX

Variable	FV	PROF	SIZE	LIQ	GROWTH	LEV
FV	1.0000					
PROF	0.5400**	1.0000				
SIZE	-0.1416	-0.3252**	1.0000			
LIQ	-0.1665	0.2161**	-0.0386	1.0000		
GROWTH	0.1762*	0.0408	0.852804**	-0.0645	1.0000	
LEV	0.0931	-0.0355	-0.018966	-0.1552	-0.0064	1.0000

Notes: FV= Firm value; LIQ= liquidity; LEV = Leverage; GROWTH= firm growth; SIZE= firm size; PROF= profitability. The symbol * depicts a significance level of 10% while ** depicts a significance level of 5%.

Correlation Analysis

Table 3 shows that the correlation coefficients between the variables of interest are less than 0.90, indicating that there is no multicollinearity issue (Gujarati, 2004). More precisely, the results show that liquidity (-0.167) and firm size (-0.142) had a negative relationship with firm value. This means that the higher level of liquidity the lower the value firm value will be. Again, Table 3 reveals an inverse association between bank size and firm value. It can be argued that small firms are often seeking alternatives to improve their operational outcomes and therefore will likely channel their resources optimally to engage in value-creating activities that will aid in enhancing their firm value. The results indicate that leverage (0.093), growth (0.176) and profitability (0.540) are positively related to firm value.

TABLE 4
HAUSMAN TEST RESULTS

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	23.237449	5	0.0003

Variable	Fixed	Random	Var(Diff.)	Prob.
PROF	0.105886	0.172301	0.000410	0.0010
SIZE	-1.107518	-0.730414	0.007615	0.0000
LIQ	0.006240	-0.020659	0.000162	0.0343
GROWTH	0.981520	0.806415	0.006272	0.0270
LEV	0.027129	0.196403	0.006718	0.0389

Notes: LIQ = liquidity; LEV = Leverage; GROWTH = firm growth; SIZE = firm size; PROF = profitability.

Regression Analysis

In the quest to identify an appropriate model for the study, the Hausman specification test was employed as a guide in the careful selection of the right model for panel data analysis. The results in Table 4 present the output from the Hausman specification test which suggests we reject the null hypothesis since the p-value is less than 0.05 ($p < 0.05$). This implies that the fixed effect model is preferable more suitable and applicable than the other one thus, the random effects model. The coefficient of determination (R^2) was 0.6156 implying that about 61.6% per cent of the variations in firm value (Tobin's Q) can be explained by liquidity, leverage, bank size, profitability and growth. Also, the F-statistics had a p-value of 0.000 which delineates that the model is fit since the p-value is less than the p-value of 5% ($p < 0.05$). The findings from Table 5 revealed how the key variables affected firm value of the sampled firms. Accordingly, Liquidity (p -value = 0.692; $\beta = 0.006$); Leverage (with $\beta = 0.027$ p -value = 0.928); Bank size in terms of the assets (with p -value = 0.000; $\beta = -1.108$); Profitability in terms of the returns (with $\beta = 0.106$ and p -value = 0.075); Growth of the financial institution in regards to revenue (p -value = 0.000 and $\beta = 0.982$).

TABLE 5
REGRESSION OUTPUT

Variable	Coefficient	Prob.
PROF	0.105886	0.0755*
SIZE	-1.107518	0.0000***
LIQ	0.00624	0.6926
GROWTH	0.981520	0.0000***
LEV	0.027129	0.0280**
Cons	2.171165	0.0324**
R-squared	0.615579	
Adjusted R-squared	0.554634	
F-statistic	10.10059	
Prob(F-statistic)	0.00000	

Notes: FV= Firm value; LEV = Leverage; LIQ= liquidity; GROWTH= firm growth; SIZE= firm size; PROF=profitability. These (*), (**), and (***) depict significance levels at 10%, 5% and 1% respectively.

TABLE 6
GRANGER CAUSAULTY ANALYSIS

Null Hypothesis	F-Statistic	Prob.
LEV does not Granger Cause FV	3.45097	0.0368**
FV does not Granger Cause LEV	0.02491	0.9754
LIQ does not Granger Cause FV	4.62346	0.0127**
FV does not Granger Cause LIQ	6.64310	0.0022***
LEV does not Granger Cause LIQ	0.56881	0.4528
LIQ does not Granger Cause LEV	3.59855	0.0611*

Notes: FV= Firm value; LIQ= liquidity; LEV = Leverage; GROWTH= firm growth; SIZE= firm size; PROF=profitability. These (*), (**), and (***) depict significance levels at 10%, 5% and 1% respectively.

Results of Granger Causality Tests

Following the studies of Engle & Granger (1987) and Li et al. (2020), the current study assessed the causal associations between the variables of interest. From Table 6 the results showed that there is a bidirectional causal relationship between liquidity and firm value because the p-value of the null hypothesis was less than 5% ($p < 0.05$) hence we reject the null hypothesis and conclude the existence of causality. This suggests that an increase or decrease in liquidity resulted in a significant increase or decrease in firm value and vice versa. Relative to other firms, the survival of banks depends on the trust and confidence of their client. Therefore, higher liquidity levels demonstrate a bank's ability to meet withdrawal, regulatory requirements and transfer demands. This, in turn, enhances client trust and confidence in the bank, leading to increased customer loyalty, more deposits and further enhanced firm value. This finding is in line with Li et al. (2020), who documented that there is a bidirectional relationship between liquidity and firms' performance. Similarly, Swagatika and Ajaya (2018), showed that there is a significant linkage between liquidity and the profitability of firms in India.

Table 6 revealed that there is a unidirectional causal relationship between liquidity and leverage. The causal relationship was a one-way relationship implying that the financing decision of the studied banks to rely on leverage is associated with liquidity. This implies that firms with insufficient internal sources of funding rely on the prudent use of debt to finance their operations hence enhancing a firm's liquidity position to meet client demands which is in line with the pecking order theory. This finding is consistent with Batten and Vo (2019), whose study on liquidity in Vietnam found that leverage is positively associated with liquidity. Leverage provides access to alternative investment options that a firm would have otherwise gained access to with little amount of capital and available funds (Albuquerque, Song & Yao, 2020; Uzir et al., 2021).

In addition, the results highlighted a bidirectional causal relationship between leverage and firm value since the p-value of the null hypothesis is less than 5% ($p < 0.05$). This indicates that an increase or decrease in leverage resulted in a significant decrease or increase in firm value and vice versa. Moreover, this finding supports the Pecking Order theory of the view that after retained earnings the most appropriate source of financing decision to fall on is leverage which has a direct link with the firm's value and capital structure as well. Also, the significance level showed that firm value does not cause leverage and thus there is no causal relationship (see Table 6). The results conclude that there is a unidirectional causality that runs from leverage to firm value. This finding is consistent with the study by Ahmed and Bhuyan (2020), who found that a unidirectional causal relationship exists between leverage and firm performance among Australian firms.

CONCLUSION

This study examined the nexus between liquidity, leverage and firm value of banks in an emerging economy. The findings revealed that leverage has a significant positive effect on firm value, while liquidity showed a positive but insignificant effect on firm value. This study emphasised the relevance of capital structure theories; accordingly, the regression output showed that the combined effects of leverage, liquidity, and profitability enhance firm value. Moreover, the Granger causality analysis revealed a unidirectional association between leverage and firm value, as well as liquidity and leverage. Interestingly, liquidity and firm value reported a bidirectional causal relationship. The paper contributes to the literature on optimal financing decisions by highlighting the relevance of agency theory and pecking order theory in predicting managers' financing decisions. The findings suggest that firms with insufficient internal sources of financing can rely on leverage to support their operations to meet client demands and further enhance firm performance. Therefore, corporate managers in their decision-making processes should strategically take into account the level of liquidity and leverage since they do not only play a role in enhancing the value of a firm but the survival and growth of a firm as well. This study also contributes to knowledge by adding to the body of research on liquidity, leverage and the firm value nexus. In addition, the findings in this study would help policymakers and regulators understand the role of liquidity and leverage in enhancing firm value. Based on the findings, the study recommends that management should manage the level of debt sustainably. Although debts improve firm value, according to the findings of the study, too much debt can have an adverse effect on the success of the entity, which can be either short-term or long-term. Therefore, this study recommends managers adopt mechanisms to manage leverage sustainably to prevent negative consequences and rather improve firm value. Additionally, the researchers suggest that firms should adopt governance strategies and resilient practices, such as liquidity management mechanisms, that will aid in enhancing the value of the firm. More precisely, managers should continually encourage stakeholders to engage in activities that manage the firm's resources to improve the firm's value, especially the accounting and finance departments, considering the crucial role they play in the survival and success of the firm. Again, this study recommends managers continually train stakeholders to get them well-versed in contemporary methods and inventions that will help improve the firm's value. For instance, training will equip the accounting and finance departments to critically assess all financing decisions and make well-informed decisions on financing, optimal capital structure, and effective resource utilisation, among others, all of which contribute to ensuring success and further enhancing the firm's value. Despite the findings of this study, it was not exempt from limitations. The study focused solely on financial institutions, specifically banks listed on the Ghana Stock Exchange (GSE). Nevertheless, there exist other firms operating in other sectors that contribute significantly to economic growth, such as manufacturing, telecommunication, oil and gas industry, and mining industry among others, that further studies can consider.

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