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Stock Liquidity and Default Risk among Listed Firms in Kenya

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ABSTRACT

Default risk is costly for investors and firms, particularly in less developed financial markets such as Kenya. Default risk may even lead to the collapse of an entire financial system. Therefore, this study sought to examine the effect of stock liquidity on default risk among listed firms in the Kenya equity market. The study used a sample of 31 nonfinancial firms listed in the Nairobi Securities Exchange between 2011 and 2020. Data was analyzed using fixed and random effect panel data estimation techniques. The findings of this study demonstrate a significant negative relationship between the stock liquidity and default risk of listed firms in Kenya. Based on the results, this study recommends that stock market regulators and policymakers pay special attention to promoting/maintaining stock market liquidity as a way of cushioning listed firms from falling into default risk.

INTRODUCTION

The recent pandemic and related worldwide economic downturn have dramatically increased corporate defaults. For instance, in China, where the real estate tycoon Evergrande has a crippling debt of $300 billion, the amount of debt default reached US$ 29.9 billion in 2020 and US$ 25 billion in the first half of 2021 (Meng et al., 2023). Further evidence shows that firms continue to experience severe financial distress. For example, Kaur (2019) found that over 65% of the banks in India are in distress zones, representing a high probability of default. In the Zimbabwe Stock Exchange, a study by Ncube (2014) reported that 83.33% were experiencing a financial distress zone, whereas 16.67% were in the grey zone. A study by Baklouti, Gautier and Affes (2016)

that focused on the period 2005 to 2011 shows that financial distress among firms in Ireland, the United Kingdom, Belgium, Greece, France, Germany and Cyprus was 64.29%, 53, 97%, 50.00%, 40.00%, 28.57%, 27.38% and 20% respectively. Nandi, Sengupta and Dutta (2019) report that over 25 percent of the companies in the oil industry in India were financially distressed and on the verge of bankruptcy. Soni et al. (2021) show that 118 of 161 Indian textile companies are financially distressed. Sewpersadh (2020) demonstrates that over 34% of firms listed in the Johannesburg Stock Exchange (JSE), the telecommunications and healthcare sectors, were classified as "grey" zones. In contrast, Mujwahuzi and Mbogo (2020) found that 2 of the six manufacturing firms Listed in Tanzania were experiencing financing distress. Ninh, Do Thanh and Hong (2018) show that around 24% of Vietnamese listed firms were facing bankruptcy. Feng (2021) over 24% of Chinese firms face financial distress. In Egypt, Shahwan (2015) reports that over 52% of listed firms are financially distressed. Gichaiya, Muchina and Macharia (2019) show that the percentage of financially distressed listed firms in Kenya increased from 28.9% to 46.2% between 2012 and 2015. Similarly, the author noted that the percentage of safe firms dropped from 50% to 35.9%.

These corporate default occurrences harm investors' interests and potentially disseminate negative expectations in the global financial system. Default risk plays a vital role in signaling a firm's health (Foster et al., 1998; Rego et al., 2009; Ho et al., 2020). The performance of the stocks of distressed firms is a matter of concern for investors, incredibly close to the announcement of default or bankruptcy, which can cause extreme stock price reactions. If a company performs well and there is no risk of financial distress or bankruptcy, stock prices increase and vice versa (Effendi et al., 2016). The key source for information on the financial health of a firm is its financial statements. All interested parties can learn about the company's health by analyzing its financial accounts. The chance of bankruptcy or default risk is a crucial factor that investors should take into account when valuing a firm using the information presented. The failure of the Firm to make its financial obligations on time results in a financial crisis or default risk. Financial distress may lead to bankruptcy of the Firm, which can cause severe damage to investors, suppliers, creditors or the economy.

Default risk is associated with the probability that a leveraged firm cannot pay its financial obligation on time. Therefore, lenders demand a high rate over a risk-free rate of return from the borrowers, and the difference between the risk-free rate and the rate of return demanded by lenders is known as the spread, which is an increasing function of default risk. Further, a firm with a higher probability of failure or default risk is expected to provide higher stock returns, but this is not always true. The relationship between default risk and stock returns is significant from an investor's point of view because it has important implications for risk and returns tradeoff.

Since so many entities are interconnected in the global economy, a single broken link might harm every connected company's short- and long-term liquidity and solvency. Therefore, academics and practitioners should pay more attention to the mechanism of corporate default. As stated by Vassalou and Xing (2004) and Bakshi, Madan, and Zhang (2006), default risk is the risk a lender assumes should a company fail to fulfill the agreed-upon payments on its loan obligation. Default risk refers to the likelihood that a leveraged corporation would be unable to make timely payments on its financial obligations. As a result, lenders demand high rates over the risk-free rate of return from borrowers, and the variation between these two rates of return is known as the spread, which rises in proportion to the risk of default. The phrase "default risk" refers to using debt in a company's financial operations. The danger of default rises when debt is used excessively in a company's finances. According to asset pricing theory, default risk is considered systematic, as higher returns compensate for the higher risk. Investors demand high-risk premiums as compensation for holding the stock of distressed firms exposed to bankruptcy risk. In other words, investors may suffer huge losses by holding the stock of distressed firms, and hence, default risk is compensated in the stock returns (Rietz, 1988). Market liquidity is the simplicity with which a large-volume transaction can be completed briefly without influencing the price (Sarr & Lybek, 2015).

Market liquidity is currently receiving more attention due to its apparent deterioration in many markets, even in those that were initially the most liquid (IMF, 2015; OFR, 2015). The fragility of liquidity has grown because of recent decreases in market making and structural market shifts (IMF, 2015). According to the European Securities and Markets Authority (ESMA, 2016), sovereign bonds have consistent liquidity but diminishing liquidity for corporate bonds. A liquid market is generally referred to as a market in which a large quantity is traded without delay at lower transaction costs with minimum price impact. The previous literature proposes four main liquidity characteristics: trading quantity, execution time, transaction cost, and price impact.

The crucial significance of liquidity in capital structure decisions has attracted increasing attention in recent years. The ability of a company to raise additional funds from prospective investors is impacted by the liquidity of the securities issued by the company in the secondary market. It influences the cost of issuing new securities and how quickly a company can raise cash from outside sources (Butler et al., 2005). In its simplest form, the traditional tradeoff hypothesis contends that corporations strive to balance costs and advantages while taking out debt. It is logical to argue that, all things being equal, any factor that lowers the net cost of equity should result in favoring stock over debt. Brogaard et al. (2017) argue that improving stock price informational efficiency is a mechanism through which stock liquidity reduces firm default risk. Goldstein and Guembel (2008) argue that uninformed investors may drive down stock prices through sell orders due to stock liquidity. The static tradeoff model predicts that more liquid companies will have lower floatation costs for equity issues, making equity financing more appealing than debt financing. As a result, high-liquidity companies are less leveraged. The adverse effects of liquidity on capital structure are demonstrated in the US and Thai markets, respectively, by Lipson and Mortal (2009) and Udomsirikul, Jumreornvong and Jiraporn (2011). Consequently, firms that enjoy more liquid equity experience a lower cost of equity and may be more motivated to adopt more equity and less debt in their capital structure.

Institutional environments are frequently seen as external control mechanisms that lessen agency conflicts and provide macro-level investor protection at a "cheap" price. According to Öztekin and Flannery (2012), firms that operate in countries with better institutional settings have lower external financing costs and higher leverage, thus more likely to face default risk. In addition, the monitoring costs of large shareholders may be cheaper for companies operating in nations with robust legal and political systems than those operating in nations with weak institutional capabilities. Using a worldwide dataset, Gao and Zhu (2015) show that high-liquidity firms are predicted to have less debt financing in their capital structure. This link is more substantial in nations with weak institutional settings.

This study contributes to the empirical literature by examining the association between stock liquidity and default risks in a developing economy in Kenya, with weak institutional arrangement compared to earlier studies. Surprisingly and contrary to this notion, the empirical evidence demonstrates an inverse relation between stock liquidity and default risk. The rest of the article proceeds as follows. Section 2 reviews the related literature and develops the hypothesis. Section 3 presents the data and constructs the variables in our empirical study. Section 4 explains the empirical methods. Section 5 concludes the article.

REVIEW OF LITERATURE AND HYPOTHESIS DEVELOPMENT

The crucial role that liquidity plays in lowering transaction costs has been underlined in corporate finance theories (Amihud & Mendelson, 1986; Butler et al., 2005; Dang et al., 2015; Lipson & Mortal, 2009). When raising more money, an issuer of either debt or equity will have to pay extra fees to underwriters/intermediaries (such as investment banks and financial institutions). Following Butler et al. (2005), underwriters charge more outstanding fees while helping illiquid companies with the issuing process. Higher corporate governance of high-liquidity firms also results

in lower transaction costs (Edmans et al., 2013) because it enables significant shareholders to rectify managerial mistakes and offset oversight of the costs through informed trading; liquidity can assist the execution of governance functions.

Research on the interaction of corporate finance and stock market microstructure is still in its infancy. Diverse capital structure theories can be used to determine the implications of stock liquidity on debt-equity decision-making. First, according to the static tradeoff hypothesis, as liquidity impacts companies' cost of equity, it also influences their target leverage (Amihud & Mendelson, 2000). Second, according to the dynamic tradeoff theory, stock liquidity influences the price of issuing equity (Butler et al., 2005). As a result, it influences how quickly debt is adjusted. The pecking order theory can also be used to explain the impact of stock liquidity. Since high liquidity reduces the negative consequences of information asymmetry, it may also affect a firm's propensity for financing a deficit through the issuing of shares (Jiang et al., 2017).

Regarding the pecking order theory, firms should seek financing options that will lessen the negative consequences of information asymmetry instead of aiming to meet their target leverage while seeking capital. As debt financing has fewer negative impacts from knowledge asymmetry, firms should prefer it to other methods of financing deficits. When Shyam-Sunder and Myers (1999) examined how much debt American corporations use to pay their deficits, they found that the pecking order theory effectively explained those corporations' actions. Fama and French (2002) believed that the pecking order theory 'wins' over the tradeoff hypothesis, but only in explaining the scenario of low-leverage enterprises with substantially better profitability. Debt is the primary method of capital financing, according to Frank and Goyal (2003).

Recent studies on the impact of stock liquidity on the capital structures of organizations are based on tradeoff theories of capital structure. Concerning the static tradeoff theory of capital structure, a firm can operate at a target debt ratio that balances the advantages and disadvantages of debt financing and optimizes its value. According to the dynamic tradeoff theory, when companies stray from their goal ratios, they will modify to get back on track (Fischer et al., 1989); Goldstein et al., 2001; Leary & Roberts, 2005). The capital structure adjustment is dynamic, but the speed of adjustment (SOA) may be unexpectedly slow owing to financial obstacles. The crucial importance of liquidity in choosing a capital structure has drawn more attention in the past couple of years. Following the static tradeoff model, more liquid companies have lower floatation costs for equity issuance, rendering equity financing more appealing than debt financing. High-liquidity companies are, hence, inclined to have less debt. Empirical studies attest to the impact of stock liquidity on a company's decision between debt and equity. It has been demonstrated by Lipson and Mortal (2009) and Dang et al. (2019) that companies with more liquid shares are less leveraged since the cost of equity is lower. Exploring the Australian context, Nadarajah et al. (2018) suggest a significantly negative liquidity-leverage relationship and find that high-liquidity firms have significantly negative corporate governance-leverage relationships.

In contrast, low-liquidity firms do not have this association. These studies, however, focus on the static tradeoff view of capital structure. It is, therefore, interesting to know how liquidity affects the dynamic nature of capital structure, precisely the speed at which firms adjust their capital structure toward the target, given the increasingly important role of institutional environments in firms' financial policies.

Using a sample of 707 Thai firms that are listed on the Stock Exchange of Thailand (SET) for the period 2002–2008, Udomsirikul, Jumreornvong & Jiraporn (2011) show the negative impact of liquidity on capital structure in the US and Thailand markets, respectively.

Using a global dataset, the sample consists of 90,514 firm-year observations for 13,019 industrial firms from 39 developed and developing countries from 1997 to 2007. Gao and Zhu (2015) document that high-liquidity firms are expected to have lower debt financing in their capital structure. This relationship is more pronounced in countries with weak institutional environments. Lipson and Mortal (2009), using a sample of all firms with data available on both CRSP and

Compustat for any year between 1985 and 2006, found that firms with more liquid equity have lower leverage and prefer equity financing when raising capital. Chen et al. (2020) find similar results, although they attribute this association to information asymmetry and the threat of leave from block holders. According to Lipson and Mortal (2009), equity financing is preferred when a company has to raise capital. Rashid and Mehmood (2017) for the Pakistani market and Dutta, Sen and Mukherjee (2022) for the Indian market both noted a similar link. Ho, Lu and Bai (2021), using panel analysis of data from 35 countries between 1996 and 2016, studied the effect of liquidity on the speed of adjustment (SOA) of capital structure and found that firms with more liquid stocks have faster SOA. In addition, Nguyen et al. (2021) find that firms with relatively more liquid bonds than stocks have higher leverage. Shen's (2014) research indicates that companies replace equity with debt when information asymmetry increases. Qu et al. (2018) find that consistently with the predictions of the pecking order theory, companies whose shareholders face more severe informational disadvantages are associated with a higher degree of leverage.

Abdulla and Ebrahim (2020) examined the impact of stock liquidity on capital structure using a sample of 108 nonfinancial firms listed on the Tadawul stock exchange from 2007–2018. The findings indicate no significant relationship between stock liquidity and leverage. El Kalak et al. (2017) examined the relationship between stock liquidity and SMEs' likelihood of bankruptcy. The authors considered a data sample comprising information on 5,075 US SME firms between 1984 and 2013. The results of this study demonstrate that the liquidity of the stocks in the sample of bankruptcies is lower than that of the stocks in the sample of non-bankruptcies. Gniadkowska-Szymańska (2022) assessed the relationship between the shares' liquidity and the bankruptcy risk. The study analyses companies from the WIG, OMXBBGI, and DAX indexes between 31 March 2012 and 31 December 2017. The study found a positive association between the stock turnover rate (trading quantity) and the risk of bankruptcy, which means that the liquidity of the company's shares should increase the bankruptcy risk of the company. Using a sample of 108 nonfinancial firms listed on the Tadawul stock exchange between 2007 and 2018, Abdulla and Ebrahim (2020) assessed the effect of spread (trading cost) liquidity on firm leverage but found no significant relationship between spread and leverage. Alimoradia et al. (2020) assessed the association between stock liquidity (bid-ask quoted spreads) and the risk of default of petrochemical and petroleum products companies listed on the Tehran Stock Exchange (TSE). The study considered a sample of 44 companies from 2011 to 2017. The findings show a negative association between stock liquidity and default rate. Taking into account the existing empirical literature on stock liquidity and capital structures and based on theoretical arguments of the static tradeoff theory, we hypothesize as follows:

H1. Stock liquidity has a negative effect on default risk

RESEARCH METHOD

Data, sample

The study focused on listed nonfinancial firms in Kenya. As of 2022, Kenya had 65 listed firms, of which 40 were nonfinancial and 25 financials listed across 13 sectors. The study applied inclusion and exclusion criteria that the firms ought to have had their shares traded throughout the study period between 2011 and 2020, and its financial and stock information must be available for ten consecutive years—the final sample comprised 31 firms that yielded 310 firm-year observations. Stock market data is extracted from the Nairobi Securities Exchange reports, while the rest are hand-collected from the annual reports.

Measurement of variables

Dependent variable- Default risk

The study uses Merton's (1974) model to measure default risk. As the baseline measure of default risk, the distance to default (DD) has been widely used to estimate default risk among nonfinancial firms (Bharath & Shumway, 2008; Chava & Purnanandam, 2010; Hovakimian et al., 2012). Distance to default (DTD) is inversely associated with default risk, meaning that a higher value of distance to default indicates lower default risk. The study estimates the probability of default (Prob. Default) as the N (-DD). Where N (-DD) is the CDF of normal distribution

Independent variable- Stock market liquidity

A liquid market is generally referred to as a market in which a large quantity is traded without delay at lower transaction costs with minimum price impact. Thus, the reviewed studies have measured liquidity in the stock market by using a variety of liquidity measures that can fairly capture the key market liquidity characteristics, that is, depth (trading quantity), breadth (price impact), immediacy (trading speed), and transaction costs (relative spread). All four measures of stock liquidity were computed every year. Consequently, and based on the literature, this study employed the four leading indicators of stock liquidity comprising trading quantity, trading speed, transaction cost, and price impact (Le & Gregoriou, 2020; Tse & Zabotina, 2001; Boudt & Petitjean, 2014).

Control Variables

The study also controls for several relevant firm characteristics that could affect default risk in the regression model: (1) Profitability, the ratio of net income to total assets; (2) Tangibility, the ratio of property plant and equipment (3) Size, measured using the logarithm of total assets; (4) institutional ownership, the ratio of institutional ownership to total shareholding (5) Firm age; which is the natural logarithm of the number of years since incorporation (6) leverage; the ratio of total debt to total assets (Atif & Ali, 2021; Kabir et al., 2020; Nadarajah *et al.,* 2021; Nie et al., 2023; Yildirim, 2020). Table I provides detailed definitions, constructions, and economic rationales for these variables.

Table 1. Measurement of Variables

Variable	Definition	Notation
Default risk	The default risk is derived from Merton's (1974) Distance to Default. The probability of default is given as P D = N(−DD), where N is the standard normal distribution function, and DD is the default distance.	PD
Firm size	Nature logarithm of total assets denominated in Kenyan Shillings	FS
Firm Age	Natural logarithm of the number of years since incorporation	FA
Firm performance	Return on assets	ROA
Tangibility	The ratio of plant property and equipment to total assets	TAN
Leverage	The ratio of debt to assets	
Institutional ownership	Proportion of shares held by institutional investors	INOW
Price impact	Annual Amihud (2002) illiquidity- Annual average of the daily ratio of the absolute value of stock return divided by shilling trading volume.	
Trading quantity	Turnover ratio, which is the average of the daily number of shares traded scaled by the average number of shares outstanding over 12 months	TQ
Trading cost	Annual relative effective spread. The difference between the execution price and the midpoint of the prevailing best bid-ask quote divided by the midpoint of the prevailing best bid-ask quote, multiplied by one hundred, and measured over one year.	TC
Trading speed	Liu's (2006) liquidity measure (LM) represents the stocks' trading frequency. LM measures the number of zero daily trading volumes for stock. To annualize, the study uses the proportion of days with zero returns multiplied by one hundred and measured over one year. We flip LM to measure speed.	TS

Estimation model

We empirically investigate the effect of stock liquidity on default risk using the model given below:

$$PD_{it} = \beta_0 + \beta_1 FP_{it} + \beta_2 TAN_{it} + \beta_3 FS_{it} + \beta_4 INOW_{it} + \beta_5 PI_{it} + \beta_6 TQ_{it} + \beta_7 TC_{it} + \beta_8 TS_{it} + \varepsilon_{it}$$

Where PD = probability of default, FP = firm performance of Firm I at year t, TAN = Tangibility of Firm I at year t, FS = Firm size of Firm I at year t, INOW = Institutional Ownership of Firm I at year t, PI = Price impact of Firm I at year t, TQ= Transaction quantity of Firm I at year t, TC= Transaction cost of Firm I at year t, TS= Transaction speed of Firm I at year t and GO= Growth opportunities of Firm I at year t. β1 to β8 = coefficients of the equations, t = time, i = firm and ε_{it}= error term

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics for the research variable from 2011 to 2020 are presented in Table 2 below. The mean probability of default is 0.2787, suggesting a low likelihood of the selected firms falling into default. The standard deviation of 0.3009 indicates high default risk variability among Kenya-listed firms. The average tangibility, institutional ownership and leverage are 0.369, 0.7066 and 0.4444, respectively. The mean leverage reveals that the selected firms are moderately leveraged. The average firm performance (ROA), age and size are 0.064. 61.145 and 7.09598, respectively. Regarding the liquidity measures, the means of price impact, trading quantity (turnover ratio), transaction cost and trading speed are 0.003, 0.189, 0.0253 and 0.292, respectively.

Table 2. Summary Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
PD	310	.2787133	.3009113	0.000	1.000
TAN	310	.3691107	.2728815	0.001	.9415659
INST	310	.7066368	.1643937	0.000	0.970
LEV	310	.4440806	.1359944	.0260912	.9379133
FA	310	61.145	39.41155	0.000	152
ROA	310	.0642881	.1529423	-0.420	.5909452
FS	310	7.095973	.8466186	5.198698	9.405137
PI	310	.0029711	.0068866	0.001	.0765279
TQ	310	.18933	.1458865	0.06351	.75262
TC	310	.0253353	.0199728	0.000	.1818182
TS	310	.2922759	.6057812	.0005351	4.734821

PD, probability of default; TAN, tangibility; LEV, leverage; ROA, return on assets; FS, firm size; INOW, institutional ownership; PI, price impact; TQ, trading quantity; TC, transaction cost; TS, trading speed

Correlation analysis

Table 3 provides correlation coefficients between default risk (PD), stock liquidity dimensions and other control variables. The correlation coefficients for price impact and transaction cost show a positive relation with a measure of default risk since they measure stock illiquidity. However, trading quantity and trading speed show a negative and significant relationship with default risk variables because they are measures of stock liquidity. As for the control variables, Tangibility (TANG), leverage (LEV) and institutional ownership (INOW) show a positive significant correlation with default risk. Firm size (FS) and profitability (ROA) correlate negatively and significantly with the default risk variable.

Table 3. Pearson Pairwise Correlation

	PD	*TAN*	*LEV*	*ROA*	*FS*	*FA*	*INST*	*PI*	*TQ*	*TC*	*TS*
PD	*1.0000*										
TAN	*0.2097**	*1.0000*									
LEV	*0.3950**	*0.1274**	*1.0000*								
ROA	*-0.3452**	*-0.0875*	*-0.2273**	*1.0000*							
FS	*-0.5281**	*0.1170**	*-0.1090*	*0.3752**	*1.0000*						
FA	*-0.1615**	*-0.1384**	*-0.1223**	*0.0471*	*0.1105*	*1.0000*					
INOW	*0.3503**	*-0.0165*	*0.2659**	*-0.0868*	*-0.2232**	*-0.0182*	*1.0000*				
PI	*0.3503**	*0.0586*	*0.0514*	*-0.0130*	*-0.0599*	*-0.0685*	*0.0934*	*1.0000*			
TQ	*-0.4629**	*-0.1447**	*-0.2044**	*0.2223**	*0.3920**	*0.1952**	*-0.0396*	*0.0591*	*1.0000*		
TC	*0.6171**	*0.1330**	*0.2927**	*-0.2569**	*-0.2673**	*-0.2159**	*0.2622**	*-0.3383**	*-0.3028**	*1.0000*	
TS	*-0.6185**	*-0.1173**	*-0.3123**	*0.3632**	*0.3408**	*0.2670**	*-0.1253**	*0.2359**	*0.2111**	*-0.4971**	*1.0000*

PD, probability of default; TAN, tangibility; LEV, leverage; ROA, return on assets; FS, firm size; INOW, institutional ownership; PI, price impact; TQ, trading quantity; TC, transaction cost; TS, trading speed.

Note(s) * p<0.05

Regression results

Table 4 presents the results for the fixed effect and random effect regression. The findings suggest that all the dimensions of stock liquidity significantly affect default risk at 5% significance levels. These results suggest that higher price impact (illiquidity) leads to a higher likelihood of default risk. The coefficient of the change in the price efficiency measure is statistically significant and positive for each specification. Consequently, an improvement in price efficiency is associated with a decline in a firm's default risk. Khanna and Sonti (2004) show that liquidity can positively affect firm performance by stimulating the entry of informed investors who make prices more informative to stakeholders. As shown in Khanna and Sonti (2004), informed traders factor the effect of their trades on managerial behavior into their trading strategy, trading more aggressively and thus making prices more informative. This feedback effect improves operating performance and relaxes financial constraints. Stock liquidity allows informed investors to profit more from their private information, consequently encouraging investors to acquire more information and trade on it, therefore leading to more informed stock prices (Holden & Subrahmanyam, 1992; Holmstrom & Tirole, 1993; Subrahmanyam & Titman, 2001). Firms with relatively illiquid firms (i.e., high price impact) are less likely to issue shares and, thus, would use more debt, subjecting the Firm to default risk. The results further suggest that higher trading quantity lowers default risk, implying that trading quantity improves stock liquidity and preference for equity capital instead of debt capital. The findings further reveal that trading cost (bid-ask spread) positively and significantly affects default risk. And influences all the dimensions of liquidity (i.e., Bid-ask spread, price impact, and trading frequency). The results agree with those of Brogaard, Li and Xia (2017), who used a sample of 7,128 firms and US common stocks between 1993 and 2013, yielding 51,527 firm-year observations. Similar to the findings of Bharath and Shumway (2008) and Li and Xia (2015), the

results for the control variable (namely firm leverage and performance) suggest that firms are less likely to fail if they have lower levels of leverage and higher levels of default risk.

Table 4. Regression Results

	Fixed Effect	**Random Effect**	**SGMM**
PD	Coef.	Coef.	Coef.
CONSTANT	.771(0.178)**	.671(0.115)**	.778(0.197)**
Controls			
TAN	.116(0.030)**	.115(0.027)**	.097(0.034)**
LEV	.120(0.037)**	.113(0.036)**	.117(0.040)**
ROA	-.101(0.033)**	-.093(0.031)**	-.145(0.036)**
FS	-.027(0.008)**	-.022(0.005)**	-.029(0.008)**
FA	.031(0.021)**	.034(0.020)**	-.017(0.033)
INOW	.118(0.045)**	.106(0.042)**	.133(0.061)**
Stock liquidity			
PI	.154(0.024)**	.153(0.023)**	.153(0.024)**
TQ	-.115(0.032)**	-.118(0.031)**	-.130(0.033)**
TC	.829(0.138)**	.743(0.120)**	.754(0.159)**
TS	-.063(0.013)**	-.069(0.013)**	-.035(0.015)**
R-squared	0.6905	0.6948	-
Observations	310	310	248
Post estimation			
AR(1)	-	-	0.089
AR(2)	-	-	0.129
Hansen	-	-	0.320

PD, probability of default; TAN, tangibility; LEV, leverage; ROA, return on assets; FS, firm size; INOW, institutional ownership; PI, price impact; TQ, trading quantity; TC, transaction cost; TS, trading speed; AR, Arellano-Bond; ** significant at 5%; standard errors(Std. Err.) in parentheses.

Robustness test

The study further employed the system generalized method of moments (SGMM) to consider all endogeneity and serial correlation, which could be linked to stock liquidity dimensions and default risk. As reported in Table 4, the results remain consistent with prior findings. Third, we use a two-step GMM system to deal with endogeneity issues. The GMM estimation lessens

simultaneity, unobserved heterogeneity, and dynamic endogeneity concerns. Column four of Table 4 reports the results for GMM estimation. The models' diagnostics exhibit insignificant statistics for second-order autocorrelation (AR2). The statically insignificant Hansen J-statistics of over-identification suggest the validity of instruments in the two-step system GMM. Overall, the SGMM results concur with those reported for the fixed effect and random effect regression model that stock liquidity is negatively associated with default risk.

Similarly, our results for the control variables also remain consistent. Specifically, high tangibility, leverage, firm size and institutional ownership are positively related to default risk. However, profitability is inversely related to default risk.

CONCLUSION

We compiled a sample of 31 firms listed in Kenya from 2011 to 2020 to investigate the relationship between stock liquidity and corporate default risk. To assess default risk, we use Merton's (1974) distance to default (DTD) and four dimensions of stock liquidity (price impact, trading quantity, transaction cost and trading speed). Our findings indicate that firms with high stock liquidity are associated with lower default risk. The study's findings have practical implications for the different sections of society. The study findings will immensely benefit stock market analysts, equity researchers and investors. Stock liquidity can be necessary in explaining default risk, particularly in emerging markets like Kenya, where the information environment and opaque information are more significant challenges. Regulators should give stock liquidity importance since it can minimize information asymmetry, lower default risk and improve the development of the stock market, which in turn can increase the efficient allocation of scarce resources. The present research only considered default risk measured by Merton's distance to default. Further studies may use other measures of default risk, such as the Altman's. Additionally, further research can validate the results of this study in other regions.

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