Impact of Bank Size on Liquidity Creation in Sri Lankan Listed Banks

Jayalath, D.B.L.
University of Sri Jayewardenepura, Sri Lanka
dbinarilakshani@gmail.com

Neelangie Nanayakkara
Department of Finance, University of Sri Jayewardenepura, Sri Lanka
neelangie@sjp.ac.lk

ABSTRACT

This study examines the association between bank size and liquidity creation in Sri Lankan listed banks. It uses a balanced panel of 12 listed private banks over 2015–2024 (120 bank-year observations). Liquidity creation is measured with the maturity-based, non-fat measure of Berger and Bouwman (2009), adapted to the maturity disclosures in Sri Lankan annual reports, in absolute terms (Rs '000) and relative to total assets. Two bank fixed-effects panel regressions with cluster-robust standard errors are estimated, with the non-performing loan ratio and the Tier 1 capital adequacy ratio as controls. Bank size, measured as the natural logarithm of total assets, has a positive and significant association with absolute liquidity creation (β = 81,703,936; $p < 0.01$). A 1% increase in total assets is associated with about Rs 813 million more liquidity creation. In contrast, size has a negative and significant association with liquidity creation per unit of assets ($\beta = -0.0512$; $p < 0.05$). Larger banks therefore create more liquidity in total but less per rupee of assets. The size coefficient is larger in 2020–2024 than in 2015–2019, but a formal equality test shows that the difference is significant only at the 10% level ($z = 1.66$; $p = 0.096$). The non-performing loan ratio is positively associated with absolute liquidity creation, while capital adequacy is not significant at the 5% level. The results suggest scale effects in the volume of liquidity creation without proportional gains in intensity. These are associations rather than causal effects, and they offer evidence for bank managers and regulators in Sri Lanka's concentrated banking system.

Keywords: Bank size; Liquidity creation; Economies of scale; Fixed-effects panel regression; Sri Lankan listed banks

JEL Classification: G21; G28; C23

1. INTRODUCTION

Banks create liquidity when they finance illiquid assets, such as long-term loans, with liquid liabilities, such as demand and savings deposits. This lets depositors hold funds they can withdraw at short notice while borrowers receive long-term finance, and it is a main reason banks exist (Bryant, 1980; Diamond & Dybvig, 1983). Berger and Bouwman (2009) made the concept measurable by weighting each balance-sheet item by its liquidity. Liquidity creation has been linked to real economic output (Berger & Sedunov, 2014) and to monetary policy transmission and bank behaviour in crises (Berger & Bouwman, 2017).

The topic is especially relevant in Sri Lanka, where capital markets are shallow and banks are the main channel from savings to investment (Levine, 1997). The banking sector is concentrated in a few large domestic banks. Between 2015 and 2024, banks operated through relative stability, the COVID-19 pandemic, the 2022 sovereign debt crisis and the early recovery, which placed different pressures on banks of different sizes. How bank size relates to liquidity creation therefore matters for bank strategy and prudential supervision.

The research problem is that theory and evidence do not give a clear prediction of how bank size relates to liquidity creation, and the existing evidence comes mostly from other settings. The research gap can be stated in four parts.

Theoretical gap can be explained where economies of scale and the "too big to fail" argument predict that larger banks create more liquidity, while relationship-lending and fragility arguments suggest that smaller banks may create more liquidity relative to their size (Berger & Bouwman, 2009). These predictions differ between liquidity in total and per unit of assets, yet few studies examine both together.

Empirical gap is there as evidence is mixed and depends on time and context. For US banks, the size relationship changed sign after the 2007–2009 crisis (Niu, 2021), and macroeconomic conditions explain more variation in liquidity creation than bank-specific factors (Duan & Niu, 2023). Studies from India, Vietnam, Indonesia and the ASEAN-5 report different patterns (Gupta & Kashiramka, 2020; Pham et al., 2021; Tran & Tran, 2025; Viverita et al., 2022). Sri Lankan studies have examined statutory liquidity and asset–liability management (Madhushani & Perera, 2022; Manel Damayanthi & Gunawardhana, 2023), but not liquidity creation as defined by Berger and Bouwman (2009).

The category-based Berger and Bouwman (2009) measure needs a loan and deposit classification that Sri Lankan annual reports do not consistently disclose, so a transparent adaptation of the maturity-based measure is needed to answer for the methodological gap.

There is also a practical gap as The Central Bank of Sri Lanka (CBSL) supervises banks of very different sizes under common rules. Evidence on whether larger banks

create more liquidity in total and per unit of assets can inform supervision and bank strategy.

This study addresses these gaps with 12 listed private banks over 2015–2024. It contributes (i) a replicable adaptation of the maturity-based measure to Sri Lankan disclosures, (ii) joint estimates for absolute and relative liquidity creation, and (iii) a formal test of whether the size coefficient differs before and after 2020. To the authors' knowledge, this is among the first studies to apply the Berger and Bouwman framework to Sri Lankan listed banks.

2. AIMS/OBJECTIVES

The main objective is to examine and quantify the association between bank size and liquidity creation in Sri Lankan listed banks, in absolute and relative terms. The sub-objectives are (i) to assess whether the evidence is consistent with economies or diseconomies of scale, (ii) to compare the relationship between 2015–2019 and the crisis and recovery period 2020–2024, and (iii) to control for asset quality (non-performing loan ratio) and capital adequacy (Tier 1 ratio). Return on assets was planned as a control but excluded (see Methods). Two hypotheses are tested:

$H0_1$: Bank size has no significant impact on liquidity creation in Sri Lankan listed banks. $H1_1$: Bank size has a significant impact on liquidity creation in Sri Lankan listed banks. H1 is tested separately for absolute liquidity creation (Model 1, H1a) and relative liquidity creation (Model 2, H1b).

$H0_2$: There are no economies of scale in liquidity creation activities of Sri Lankan listed banks. $H1_2$: There are economies of scale in liquidity creation activities of Sri Lankan listed banks. Economies of scale in volume are inferred from a positive size coefficient in Model 1, while efficiency per unit of assets is assessed from the size coefficient in Model 2.

3. THEORY

Liquidity transformation theory holds that banks issue liquid claims, hold illiquid assets and bear the resulting maturity and liquidity risk (Bryant, 1980; Diamond & Dybvig, 1983). Banks also reduce information and transaction costs between savers and firms (Levine, 1997), and they can create liquidity off the balance sheet through loan commitments (Holmstrom & Tirole, 2000). Several mechanisms link bank size to liquidity creation, with different predictions for absolute and relative liquidity creation.

Larger banks spread the fixed costs of technology, risk management and funding-market access over more assets, which lowers the cost of supplying liquidity (Pham et al., 2021). This predicts a positive size effect on absolute liquidity creation. It predicts a positive effect on relative liquidity creation only if scale also shifts the balance sheet towards illiquid assets and liquid liabilities.

Systemically important banks may expect public support, which lowers funding costs, weakens market discipline and encourages illiquid asset holdings (Casu et al., 2019). This also predicts a positive size effect, particularly under stress.

Under risk absorption, capital lets banks bear the risk of illiquid assets, so better-capitalised banks create more liquidity. Under financial fragility–crowding out, capital weakens the discipline of fragile deposit funding and crowds out deposits, so it reduces liquidity creation. Berger and Bouwman (2009) find the first effect dominant for large US banks and the second for small banks, and other evidence shows the capital–liquidity link depends on bank type and context (Distinguin et al., 2013; Horváth et al., 2013).

Larger banks may face more organisational complexity and larger regulatory liquidity buffers, and in shallow capital markets they may hold more government securities. This raises assets without raising liquidity creation in proportion, predicting a negative size effect on relative liquidity creation, while smaller banks may focus on higher-intensity relationship and retail lending (Viverita et al., 2022).

Very high liquidity creation concentrates risk on both sides of the balance sheet and can raise failure risk (Fungacova et al., 2015), and its link with stability varies with bank size and economic development (Tran & Tran, 2025).

Empirically, large US banks created about 85% of industry liquidity while being a small share of banks (Berger & Bouwman, 2009), and the size relationship changed after the 2007–2009 crisis (Niu, 2021). In Vietnam, monetary tightening reduced liquidity creation more for small banks because large banks had wider funding access (Pham et al., 2021). In India, liquidity creation was linked to bank stability (Gupta & Kashiramka, 2020). This study therefore expects a positive association between size and absolute liquidity creation, while the sign for relative liquidity creation is an empirical question.

4. METHODS

The study uses a quantitative, explanatory design with secondary panel data. The population is the licensed banks in Sri Lanka. A bank was included if it (i) was listed on the Colombo Stock Exchange, (ii) was privately owned, and (iii) published annual reports with maturity analyses of assets and liabilities, Basel III capital disclosures and asset-quality data for every year from 2015 to 2024. The two state-owned banks, Bank of Ceylon and People's Bank, were excluded because their lending is partly directed by government policy and their deposit funding is supported by the state, which makes their liquidity creation not comparable with that of private banks (Madhushani & Perera, 2022). Because state banks hold a large share of system assets, the results apply to listed private banks and should not be generalised to the whole banking system. The final sample is a balanced panel of 12 banks and 120 bank-year observations (Table 1). Data were taken from the annual reports published

on the Colombo Stock Exchange website, compiled in Excel and analysed in EViews 12.

Table 1: Sample Banks (Listed Private Banks, 2015–2024)

No.	Bank	No.	Bank
1	Commercial Bank of Ceylon PLC	7	Nations Trust Bank PLC
2	Hatton National Bank PLC	8	Pan Asia Banking Corporation PLC
3	Sampath Bank PLC	9	Amana Bank PLC
4	Seylan Bank PLC	10	Union Bank of Colombo PLC
5	National Development Bank PLC	11	HDFC Bank of Sri Lanka
6	DFCC Bank PLC	12	Sanasa Development Bank PLC

Note. Banks with average 2015–2024 total assets of Rs 500 billion or more (the CBSL threshold for domestic systemically important banks, Banking Act Direction No. 01 of 2016) are classified as large (5 banks); the other 7 are small.

Liquidity creation is measured with the maturity-based, non-fat ("mat non-fat") measure of Berger and Bouwman (2009). The category-based measure could not be used because Sri Lankan annual reports do not consistently classify loans and deposits by category, while all sample banks disclose asset and liability maturities in a maturity-analysis note. Off-balance-sheet items are excluded because they are disclosed inconsistently and are relatively small in emerging-market banks (Horváth et al., 2013). In three steps, each item in the maturity note is classified as up to one year or more than one year, weighted as in Table 2, and summed to obtain absolute liquidity creation (LC) for each bank-year:

$$LC = 0.5 \times \text{Illiquid assets} + 0.5 \times \text{Liquid liabilities} - 0.5 \times \text{Liquid assets} - 0.5 \times \text{Illiquid liabilities} - 0.5 \times \text{Equity}$$

Absolute liquidity creation is in Rs '000. Relative liquidity creation is LC divided by total assets, expressed as a fraction (0.16 means Rs 0.16 of liquidity per rupee of assets). A negative value means that the bank destroys rather than creates liquidity in that year.

Bank size is the natural logarithm of total assets (LnTA), in Rs '000. Asset quality is the ratio of non-performing loans to total loans, and capital adequacy is the ratio of Tier 1 capital to risk-weighted assets (CBSL minimum 10%). Return on assets was also collected. Both ratios are expressed as fractions before transformation and enter the models in natural logarithms (LnNPL and LnCAR). The log transformation was used because the levels of both ratios failed the panel unit-root test, while their logarithms passed it (Table 4). The logs also reduce the right skew of both ratios.

Table 2: Liquidity Classification and Weights (Maturity-Based Measure)

Balance-sheet item	Classification	Weight
Assets with residual maturity above one year (e.g., long-term loans and investments)	Illiquid assets	+0.5
Liabilities with residual maturity up to one year (e.g., demand, savings and short-term deposits)	Liquid liabilities	+0.5
Assets with residual maturity up to one year (e.g., cash, short-term loans, short-term securities)	Liquid assets	−0.5
Liability with residual maturity above one year (e.g., long-term deposits, debentures, borrowings)	Illiquid liabilities	−0.5
Total equity	Equity	−0.5

Note. Adapted from Berger and Bouwman (2009). Maturity buckets are taken from the maturity-analysis note of each annual report. Off-balance-sheet items are not included.

Two bank fixed-effects models are estimated:

$$Model\ 1:\ LC_it = \beta 0 + \beta 1\ LnTA_it + \beta 2\ LnNPL_it + \beta 3\ LnCAR_it + \mu_i + \varepsilon_it$$

$$Model\ 2:\ LCR_it = \gamma 0 + \gamma 1\ LnTA_it + \gamma 2\ LnNPL_it + \gamma 3\ LnCAR_it + \mu_i + \varepsilon_it$$

Here LC_it is absolute liquidity creation (Rs '000) of bank i in year t, LCR_it is LC divided by total assets, LnTA_it, LnNPL_it and LnCAR_it are the natural logarithms of total assets, the NPL ratio and the Tier 1 capital ratio, μ_i is a bank fixed effect capturing time-invariant differences between banks, and ε_it is the error term. The models include bank (cross-section) fixed effects only; time fixed effects are not included, so common year-specific shocks are not absorbed by the models. Because both models are level–log specifications, β1/100 approximates the change in LC (Rs '000) for a 1% increase in total assets; the exact value is β1 × ln(1.01).

After descriptive statistics and Pearson correlations, the Levin, Lin and Chu (LLC) panel unit-root test, with individual effects and one lag, was applied to each variable. Return on assets, its logarithm and its first-differenced logarithm all failed the test (Table 4), so return on assets was excluded to avoid a spurious regression, and NPL and CAR entered in logarithms. Multicollinearity was checked with variance inflation factors (VIF), and the Hausman test compared fixed and random effects. The models were estimated by least squares with bank fixed effects and White cross-section (period-cluster) standard errors, which are robust to heteroskedasticity and within-period correlation. For robustness, Model 1 was re-estimated for 2015–2019 and 2020–2024, and the difference between the two size coefficients was tested with the z-test of Paternoster et al. (1998).

5. RESULTS

Table 3 summarizes the variables. Mean absolute liquidity creation is about Rs 114.1 billion per bank-year, but the median is only about Rs 41.2 billion, so a few large banks create most of the liquidity. Values range from −Rs 92.3 billion to Rs 719.7

billion. On average a bank creates Rs 0.16 of liquidity per rupee of assets. The five large banks create about 85% of the total absolute liquidity in the sample. Compared with small banks, large banks have higher mean LnTA (20.61 versus 18.82) and ROA (1.20% versus 0.97%), lower Tier 1 capital ratios (11.92% versus 15.02%) and lower NPL ratios (4.73% versus 6.23%).

Table 3: Descriptive Statistics (N = 120)

Variable	Unit	Mean	Median	Std. dev.	Min	Max
LC	Rs '000	114,109,212	41,224,587	168,471,115	−92,297,341	719,730,474
LnTA	ln (Rs '000)	19.563	19.626	1.114	17.551	21.749
NPL ratio	fraction	0.0561	0.0448	0.0451	0.0089	0.2450
Tier 1 CAR	fraction	0.1373	0.129	0.0443	0.0782	0.3541
ROA	fraction	0.0107	0.010	0.0052	–0.003	0.032

Note: Results processed using EViews 12 Student Version Lite

LnTA is strongly correlated with absolute liquidity creation (r = 0.765) and weakly with relative liquidity creation (r = 0.288). LC has small correlations with LnNPL (r = 0.009) and LnCAR (r = −0.071). The largest correlation between explanatory variables is −0.339 (LnTA and LnCAR).

Table 4: Diagnostic Test Results

Test	Variable or model	Statistic	p-value	Decision
LLC unit root	LC; LCR; LnTA		0.0006; 0.0093; 0.0054	Stationary
LLC unit root	LnNPL; LnCAR		0.0155; 0.0257	Stationary
LLC unit root	NPL; CAR (levels)		0.1545; 0.1589	Non-stationary
LLC unit root	ROA; LnROA; D(LnROA)		0.7643; 0.4598; 0.2441	Non-stationary; excluded
VIF (centred)	LnTA; LnNPL; LnCAR; LnROA	1.228; 1.132; 1.341; 1.125		No multicollinearity
Hausman	Fixed vs random effects	$\chi^2(3) = 8.718$	0.0333	Fixed effects
Jarque–Bera	Model 1 / Model 2 residuals	322.57 / 244.94	0.000 / 0.000	Non-normal

Note. LLC = Levin, Lin and Chu test with individual effects and one lag (96 balanced observations).

Table 4 reports the diagnostic tests. All model variables are stationary at the 5% level, while NPL and CAR in levels and all forms of ROA are not. All centred VIF values are below 1.4. The Hausman test rejects random effects ($\chi^2 = 8.72$; $p = 0.033$), supporting fixed effects. The Jarque–Bera test rejects residual normality in both models, so inference relies on cluster-robust standard errors. The Durbin–Watson statistic of Model 1 (1.02) suggests possible positive serial correlation, which the period-cluster standard errors only partly address.

5.1. Model 1: Bank size and absolute liquidity creation

Table 5 reports the fixed-effects estimates. In Model 1, LnTA has a positive and significant coefficient (β1 = 81,703,936; t = 4.820; p = 0.0009). Because LC is in Rs '000 and size is in logarithms, this is the change in LC for a one-unit change in LnTA (a 172% increase in assets), about Rs 81.7 billion. For a 1% increase in total assets, the associated increase is about Rs 813 million (81,703,936 × ln 1.01 ≈ Rs '000 812,981), holding the controls and bank fixed effect constant. $H0_1$ is rejected for absolute liquidity creation (H1a). LnNPL is also positive and significant (β2 = 30,021,025; p = 0.0023): a 1% higher NPL ratio is associated with about Rs 299 million more liquidity creation. LnCAR is significant only at the 10% level (p = 0.0807). The model explains 84.5% of the variation in LC (adjusted R^2 = 0.824).

Table 5: Fixed-Effects Estimates for Absolute and Relative Liquidity Creation (N = 120)

Variable	Model 1: LC (Rs '000) Coefficient	Model 1 t-stat	Model 2: LCR (fraction) Coefficient	Model 2 t-stat
LnTA	81,703,936***	4.820	−0.0512**	−3.094
LnNPL	30,021,025***	4.203	0.0060	0.330
LnCAR	43,675,915*	1.967	−0.0025	−0.052
Constant	−1,300,000,000***	−3.544	1.1761**	3.091
Bank fixed effects	Yes		Yes	
Time fixed effects	No		No	
R^2 / Adjusted R^2	0.845 / 0.824		0.568 / 0.511	
F-statistic	40.85***		9.88***	

*Note. White cross-section (period-cluster) robust standard errors. The p-values are 0.0009, 0.0023 and 0.0807 for Model 1 and 0.0129, 0.7491 and 0.9598 for Model 2 (LnTA, LnNPL and LnCAR respectively). The Model 1 constant is reported by EViews as −1.30E+09. * p < 0.10, ** p < 0.05, *** p < 0.01.*

5.2. Model 2: Bank size and relative liquidity creation

In Model 2, LnTA has a negative and significant coefficient (γ1 = −0.0512; t = −3.094; p = 0.0129). A 1% increase in total assets is associated with a fall of about 0.0005 in the liquidity creation ratio (about 0.05 percentage points), holding the controls constant. $H0_1$ is therefore also rejected for relative liquidity creation (H1b), with a negative sign. Neither LnNPL (p = 0.749) nor LnCAR (p = 0.960) is significant, and the lower adjusted R^2 (0.511) indicates that other factors also explain liquidity creation per unit of assets.

5.3. Sub-period analysis and equality test

Table 6 re-estimates Model 1 for 2015–2019 and 2020–2024. The size coefficient is positive and significant at the 5% level in both periods: 55,682,636 (p = 0.020) before 2020 and about 132,006,433 (p = 0.038) from 2020, or about Rs 554 million and Rs

1,314 million per 1% increase in assets. The equality test gives z = 1.66 (p = 0.096), so the difference is significant only at the 10% level and the evidence of a stronger size effect after 2020 is weak. The NPL coefficient (29,003,493 before 2020, p = 0.095; 14,737,087 after, p = 0.152) is not significant at the 5% level in either period. The pre-2020 NPL and CAR values were rechecked against the EViews output, correcting transcription errors in the earlier version. With 60 observations and 12 clusters per period, these estimates are less precise than the full-sample results.

Table 6: Sub-Period Estimates for Absolute Liquidity Creation (Model 1)

Variable	2015–2019 Coefficient	2015–2019 t-stat	2020–2024 Coefficient	2020–2024 t-stat
LnTA	55,682,636**	3.723	132,006,433**	3.045
LnNPL	29,003,493*	2.178	14,737,087	1.769
LnCAR	67,347,101*	2.166	−326,829	−0.007
Constant	−750,000,000*	−2.674	−2,430,000,000*	−2.652
R^2 / Adjusted R^2	0.798 / 0.736		0.965 / 0.954	
Observations	60		60	
Equality test, LnTA (2020–2024 vs 2015–2019)	z = 1.66; p = 0.096			

*Note. Bank fixed effects and White cross-section (period-cluster) standard errors in both periods. The p-values for LnTA are 0.0204 (2015–2019) and 0.0382 (2020–2024). EViews reports the 2020–2024 LnTA coefficient as 1.32E+08; the value shown is the standard error (43,356,451) multiplied by the t-statistic. The equality test is $z = (b_2 - b_1)/\sqrt{(SE_1^2 + SE_2^2)}$ (Paternoster et al., 1998). $p < 0.10$, $p < 0.05$, ** $p < 0.01$.*

Hypothesis testing

Table 7 summarises the hypothesis decisions.

Table 7: Summary of Hypothesis Tests

Hypothesis	Evidence	Decision
H1a: Size and absolute LC	β1 = 81,703,936; p = 0.0009	$H0_1$ rejected; positive association
H1b: Size and relative LC	γ1 = −0.0512; p = 0.0129	$H0_1$ rejected; negative association
H2: Economies of scale	Positive β1 in the full sample and both sub-periods; negative γ1	$H0_2$ rejected for liquidity volume; no evidence of scale gains per unit of assets

Note. Decisions at the 5% significance level.

6. DISCUSSION

Overall, larger Sri Lankan listed banks create more liquidity in total, but less liquidity per rupee of assets.

The positive association between size and absolute liquidity creation agrees with Berger and Bouwman (2009) and with evidence that large banks keep creating

liquidity when funding tightens (Pham et al., 2021). The five large banks create about 85% of total liquidity, matching the US share reported by Berger and Bouwman (2009). Economies of scale in funding and risk management are consistent with this result, but the models do not test these channels, so they are possible explanations rather than findings. Part of the association is also mechanical, because absolute liquidity creation rises with balance-sheet size.

The negative association between size and relative liquidity creation differs from the scale advantages per unit of capital reported for large US banks (Berger & Bouwman, 2009). It is closer to evidence that smaller banks create more liquidity per unit of assets through relationship and retail lending (Viverita et al., 2022). One possible explanation is that large Sri Lankan banks hold more government securities and short-term liquid assets, partly because of regulatory liquidity requirements and the shallow capital market, which raises assets without raising liquidity creation in proportion. Asset composition was not modelled, so this remains to be tested. Together, Models 1 and 2 suggest scale effects in the volume of liquidity creation but diseconomies in its intensity.

The sub-period results extend the time-varying view of Niu (2021). In the US, the size effect changed sign after the 2007–2009 crisis, whereas in Sri Lanka it is positive both before and after 2020. The point estimate is larger in 2020–2024, but the difference is not significant at the 5% level, so the data are consistent with a stable positive size effect with weak evidence of a stronger effect during the crisis and recovery. This fits the view that macroeconomic conditions shape liquidity creation (Duan & Niu, 2023; Berger & Bouwman, 2017), but it does not show that larger banks were more resilient, because resilience was not measured.

The positive NPL coefficient is not what the credit-risk view predicts. It is significant in the full sample but not at the 5% level in either sub-period, so it should be read with caution. Possible but untested explanations are that banks with weaker loan books lend more to maintain income, that loan-classification relief during the COVID-19 and crisis period weakened the link between reported NPLs and lending, and that the log transformation hides a non-linear relationship. The weak capital effect is consistent with mixed evidence on the capital–liquidity link (Distinguin et al., 2013; Horváth et al., 2013) and may reflect limited variation in Tier 1 ratios under common Basel III minimums. In Sri Lanka, Manel Damayanthi and Gunawardhana (2023) also report an insignificant capital effect on bank liquidity, although they use a different liquidity measure.

7. IMPLICATIONS AND LIMITATIONS

Theoretically, the study shows that the maturity-based Berger and Bouwman (2009) measure can be applied to Sri Lankan disclosures, and that the size–liquidity relationship can differ in sign between total and relative liquidity creation. Theories of scale in banking should therefore distinguish the volume of liquidity creation from

its intensity. The sub-period results add Sri Lankan evidence on whether the size effect varies with economic conditions (Niu, 2021).

The practical implications are considerations rather than prescriptions, because the estimates are associations. For bank managers, asset growth is associated with more total liquidity creation, but larger banks may review whether their asset mix limits liquidity creation per rupee of assets, while smaller banks may keep a high transformation intensity through retail and relationship lending. For the CBSL, the concentration of liquidity creation in five large banks means their behaviour matters for credit supply, which supports monitoring both their total and relative liquidity creation. The positive NPL association suggests examining how asset-quality pressure and loan-classification relief interact with lending. The study does not identify an optimal bank size or test consolidation or forbearance policies.

The study has limitations. The sample of 12 listed private banks excludes state-owned and non-listed banks. The models omit time fixed effects, so common macroeconomic shocks may affect the estimates, and reverse causality between size and liquidity creation is not addressed. The measure excludes off-balance-sheet liquidity creation, and annual data limit observations, especially in the sub-periods. Residuals are non-normal and Model 1 may have serial correlation, although cluster-robust standard errors are used. Profitability is not controlled for because ROA was non-stationary.

Future research could add time fixed effects and macroeconomic controls, use instrumental-variable or dynamic panel methods, apply the category-based measure with off-balance-sheet items, use quarterly data, include state-owned and non-listed banks, and directly test channels such as asset composition, funding access and loan-classification relief.

AI DISCLOSURE

The authors used Claude (Anthropic) to assist with restructuring the manuscript, language editing, and drafting responses to reviewer comments. The authors reviewed and revised the output and take responsibility for the accuracy, originality, and final content of this manuscript.

REFERENCES

Berger, A.N. and Bouwman, C.H.S. (2009) ‘Bank liquidity creation’, *The Review of Financial Studies*, 22(9), pp. 3779–3837.

Berger, A.N. and Bouwman, C.H.S. (2017) ‘Bank liquidity creation, monetary policy, and financial crises’, *Journal of Financial Stability*, 30, pp. 139–155.

Berger, A.N. and Sedunov, J. (2014) *Bank liquidity creation and real economic output*. SSRN. Available at: https://doi.org/10.2139/ssrn.2515361.

Bryant, J. (1980) 'A model of reserves, bank runs, and deposit insurance', *Journal of Banking & Finance*, 4(4), pp. 335–344.

Casu, B., di Pietro, F. and Trujillo-Ponce, A. (2019) 'Liquidity creation and bank capital', *Journal of Financial Services Research*, 56(3), pp. 307–340.

Diamond, D.W. and Dybvig, P.H. (1983) 'Bank runs, deposit insurance, and liquidity', *Journal of Political Economy*, 91(3), pp. 401–419.

Distinguin, I., Roulet, C. and Tarazi, A. (2013) 'Bank regulatory capital and liquidity: Evidence from US and European publicly traded banks', *Journal of Banking & Finance*, 37(9), pp. 3295–3317.

Duan, Y. and Niu, J. (2023) 'What drives bank liquidity creation?', *Applied Economics Letters*, 31(20), pp. 2138–2143.

Fungacova, Z., Turk, R. and Weill, L. (2015) *High liquidity creation and bank failures*. IMF Working Paper No. 15/103. International Monetary Fund. Available at: https://doi.org/10.5089/9781475581805.001.

Gupta, J. and Kashiramka, S. (2020) 'Financial stability of banks in India: Does liquidity creation matter?', *Pacific-Basin Finance Journal*, 64, Article 101439.

Holmstrom, B. and Tirole, J. (2000) 'Liquidity and risk management', *Journal of Money, Credit and Banking*, 32(3), pp. 295–319.

Horváth, R., Seidler, J. and Weill, L. (2013) 'Bank capital and liquidity creation: Granger-causality evidence', *Journal of Financial Services Research*, 45(3), pp. 341–361.

Levin, A., Lin, C.-F. and Chu, C.-S.J. (2002) 'Unit root tests in panel data: Asymptotic and finite-sample properties', *Journal of Econometrics*, 108(1), pp. 1–24.

Madhushani, W.I. and Perera, K.H. (2022) 'The impact of assets liability management on the financial performance: Evidence from licensed commercial banks in Sri Lanka', *International Journal of Accountancy*, 2(1), p. 43.

Manel Damayanthi and Gunawardhana, C.S. (2023) *Determinants of liquidity of licensed commercial banks in Sri Lanka*. SSRN. Available at: https://doi.org/10.2139/ssrn.4449793.

Niu, J. (2021) 'Bank size and liquidity creation', *Applied Economics Letters*, 30(2), pp. 1–5.

Paternoster, R., Brame, R., Mazerolle, P. and Piquero, A. (1998) 'Using the correct statistical test for the equality of regression coefficients', *Criminology*, 36(4), pp. 859–866.

Pham, H.S.T., Le, T. and Nguyen, L.Q.T. (2021) 'Monetary policy and bank liquidity creation: Does bank size matter?', *International Economic Journal*, 35(2), pp. 1–18.

Tran, T.N.T. and Tran, X.L.N. (2025) 'The impacts of liquidity creation on banking stability: An empirical research in ASEAN-5', *Journal of Central Banking Theory and Practice*, 14(3), pp. 243–267.

Viverita, Bustaman, Y. and Danarsari, D.N. (2022) 'Liquidity creation by Islamic and conventional banks during COVID-19 pandemic', *Global Conference on Business and Social Sciences Proceeding*, 13(1).