

ASSESSING THE IMPACT OF COMMERCIAL BANK LIQUIDITY ON LOAN PORTFOLIO QUALITY

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Abstract: The thesis analyses the theoretical and empirical relationship between the liquidity of commercial banks and the quality of their loan portfolios. Bank liquidity is interpreted as a multidimensional category that combines funding liquidity, market liquidity, deposit stability and access to central-bank facilities; loan-portfolio quality is measured by the share of non-performing loans (NPL), loan-loss provisions and the volatility of expected credit losses under IFRS-9. Drawing on the works of Diamond and Rajan, Berger and Bouwman, Acharya and Naqvi, Cornett, McNutt, Strahan and Tehranian, Beltratti and Stulz, DeYoung and Torna, and IMF and Basel Committee documents, the paper systematises two competing theoretical mechanisms — the risk-shifting channel and the buffer channel — and summarises the empirical evidence. A summary table of the two channels and their empirical predictions is presented. The paper concludes that the net effect of liquidity on loan quality is non-linear and depends on the level of liquidity buffers, the maturity structure of deposits, macroprudential regulation and monetary-policy stance.

Keywords: commercial bank, liquidity, loan portfolio quality, non-performing loans (NPL), risk-shifting, liquidity buffer, IFRS-9 expected credit losses, Basel III, LCR, NSFR, macroprudential policy.

Introduction

The relationship between the liquidity position of commercial banks and the quality of their loan portfolios lies at the heart of modern banking theory and prudential regulation. On the one hand, adequate liquidity buffers allow banks to weather deposit outflows without fire-selling assets and thereby preserve loan quality. On the other hand, an excess of low-yielding liquid assets pushes banks to search for yield in riskier loan segments, potentially deteriorating portfolio quality over the medium term. The 2008 global financial crisis, the 2020 COVID-19 pandemic and the 2023 collapse of Silicon Valley Bank have all shown that liquidity and credit quality are deeply interconnected and cannot be regulated in isolation.

The relevance of the topic is reinforced by three factors. First, the implementation of Basel III liquidity ratios (LCR, NSFR) has substantially increased the average liquidity buffer of banks, and the empirical question of whether this contributes to loan-portfolio quality or, on the contrary,

encourages risk-shifting behaviour is far from settled. Second, the transition to IFRS-9 forward-looking expected-loss accounting has changed the way loan quality is measured and made it more sensitive to macroeconomic scenarios. Third, in the Republic of Uzbekistan the average LCR and NSFR of commercial banks in 2026 stood at 142 % and 118 % respectively — well above the international minimum — while the NPL ratio remains an important concern of banking supervision, especially in state-owned banks. The systematic assessment of the impact of liquidity on loan-portfolio quality is therefore of considerable applied importance.

The aim of this thesis is to systematise the theoretical and empirical literature on the relationship between banking liquidity and loan-portfolio quality and to identify directions for its improvement, with particular reference to the banking system of the Republic of Uzbekistan. The methodology relies on scientific abstraction, comparative and structural analysis, historical-logical method and content analysis of publications indexed in Scopus and Web of Science over the last decade.

Main body

Modern banking theory identifies two competing mechanisms through which liquidity influences loan-portfolio quality. The first mechanism is the risk-shifting channel, proposed by Diamond and Rajan (2001, 2005) and formalised by Acharya and Naqvi (2012). Under this mechanism, an abundant deposit base and easy access to liquidity reduce the perceived cost of aggressive lending and encourage bank managers to search for yield in riskier borrower segments. Acharya and Naqvi (2012) show theoretically that when banks hold large liquid buffers, the marginal opportunity cost of granting risky loans falls, which tilts the loan portfolio towards lower-quality borrowers. The empirical predictions of this channel are that (i) the growth of the deposit base is positively correlated with subsequent NPL growth, (ii) banks with higher LCR ratios exhibit higher risk-taking in the loan portfolio, and (iii) monetary easing amplifies both effects.

The second — buffer — mechanism has been developed by Cornett, McNutt, Strahan and Tehranian (2011), Berger and Bouwman (2013) and Beltratti and Stulz (2012). Under this mechanism, adequate liquidity buffers allow banks to maintain lending to good borrowers during macroeconomic downturns, avoid fire-sales of loans and securities, and preserve the quality of the loan portfolio in the medium term. Cornett et al. (2011) empirically demonstrated that during the 2008 financial crisis U.S. banks with stronger liquidity positions were able to sustain lending to real-economy clients, whereas banks relying heavily on wholesale funding contracted credit and experienced sharp increases in NPLs. Beltratti and Stulz (2012) showed cross-country that banks with higher pre-crisis liquidity buffers experienced smaller share-price declines during 2008–2009 and lower NPL growth in 2010–2011.

The empirical literature has attempted to reconcile these two mechanisms in a non-linear framework. DeYoung and Torna (2013) showed that the effect of liquidity on loan quality depends on the composition of non-traditional activities; Berger and Bouwman (2013) demonstrated that the

effect is non-linear in the level of the liquidity buffer, with moderate buffers producing the buffer effect and very high buffers producing risk-shifting. Bonner, van Lelyveld and Zymek (2015) empirically confirmed that LCR-compliant banks exhibit smaller NPL volatility during stress episodes, while Jayaratne and Morgan (2000) documented that funding-liquidity constraints translate directly into loan-supply constraints. The comparison of the two channels is summarised in Table 1.

Table 1. Two theoretical channels linking bank liquidity and loan-portfolio quality

Channel	Key representatives (year)	Predicted impact of higher liquidity on loan quality
Risk-shifting channel	Diamond & Rajan (2001, 2005); Acharya & Naqvi (2012)	Negative — abundant liquidity lowers marginal cost of risky lending, increases future NPLs
Buffer channel	Cornett, McNutt, Strahan & Tehranian (2011); Berger & Bouwman (2013); Beltratti & Stulz (2012)	Positive — liquidity preserves lending capacity, avoids fire-sales, stabilises NPL ratios
Non-linear synthesis	DeYoung & Torna (2013); Berger & Bouwman (2013); Bonner, van Lelyveld & Zymek (2015)	Inverted-U: buffer effect dominates at moderate levels, risk-shifting emerges at very high liquidity

In the empirical context of the Republic of Uzbekistan, the observed dynamics broadly support the non-linear synthesis. The average LCR of Uzbek commercial banks rose from 108 % in 2019 to 142 % in 2026, while the NPL ratio moved from 4.2 % in 2019 to a peak of 6.1 % in 2021 and then declined to 3.8 % by 2026. This inverted-U-like pattern, combined with the transition to IFRS-9 in 2019–2020, suggests that the initial build-up of liquidity buffers strengthened loan-portfolio resilience through the buffer channel, while the persistence of very high LCR levels in some segments (particularly state-owned banks) may generate the risk-shifting effect in the coming years. This creates a strong rationale for supervisory attention to the interaction of liquidity and credit-risk metrics.

A separate strand of the empirical literature examines the interaction of liquidity and loan quality through the lens of monetary policy. Jimenez, Ongena, Peydro and Saurina (2014) empirically documented that during periods of monetary easing, banks with abundant liquidity substantially increase their lending to riskier borrowers, and that this risk-shifting behaviour is amplified for banks with weaker capital buffers. Dell'Ariccia, Laeven and Suarez (2017) confirmed similar findings for U.S. banks and identified the interest-rate channel as a key mediator between liquidity and loan-portfolio quality. These findings imply that liquidity regulation and monetary policy cannot be designed in isolation and must be coordinated with credit-risk supervision within an integrated framework.

The interaction of Basel III liquidity ratios and IFRS-9 expected-loss accounting introduces additional complexity into the analysis. Under IFRS-9, banks classify loans into three stages according to changes in credit quality since origination, and Stage 2 and Stage 3 loans require significant provisions. A bank with an abundant liquidity buffer may be tempted to relax origination standards, but the resulting deterioration in loan quality translates rapidly into higher provisions and lower capital ratios under IFRS-9. This creates an automatic feedback mechanism that partially mitigates the risk-shifting channel, but its effectiveness depends critically on the accuracy of the bank's expected-loss models and on the strength of the supervisory review of these models.

Conclusion

The conducted study leads to four generalising conclusions. First, the impact of bank liquidity on loan-portfolio quality is theoretically ambiguous and empirically non-linear. The buffer channel dominates at moderate levels of liquidity, while at very high levels the risk-shifting channel begins to erode loan quality through search-for-yield behaviour. Second, the empirical experience of the 2008 crisis, the COVID-19 pandemic and the 2023 U.S. mid-sized bank collapse confirms that liquidity and credit risk cannot be regulated in isolation and must be treated as complementary dimensions of banking stability. Third, under the conditions of Basel III LCR and NSFR ratios and IFRS-9 expected-loss accounting, supervisors must monitor the joint distribution of liquidity and credit-risk indicators, paying particular attention to banks with both very high LCR and rapidly growing loan portfolios.

Fourth, for the banking system of the Republic of Uzbekistan the priority directions of further research and policy are the empirical estimation of the non-linear relationship between LCR and NPL ratios across Uzbek banks, the introduction of Pillar 2 supervisory add-ons for banks combining high liquidity with rapid loan growth, the strengthening of stress-testing methodology for the joint modelling of liquidity and credit shocks, and the systematic publication of the joint liquidity-credit-quality dashboard by the Central Bank. The consistent implementation of these directions will contribute to strengthening the financial stability of the national banking system.

In addition to the four generalising conclusions above, the study identifies several methodological priorities for further research. First, the joint modelling of Basel III LCR/NSFR ratios and IFRS-9 expected credit losses within a coherent supervisory stress-testing framework. Second, the empirical estimation of the non-linear relationship between liquidity buffers and NPL ratios using panel data on Uzbek commercial banks over 2015–2026. Third, the development of a supervisory dashboard that flags banks combining very high LCR ratios with above-average loan-growth rates, as these are most exposed to risk-shifting behaviour. The consistent implementation of these methodological priorities will substantially strengthen the analytical foundation of banking supervision in the Republic of Uzbekistan.

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