

Estimating the Liquidity- Profitability Frontier: The Credit Union Perspective

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Purpose of our research

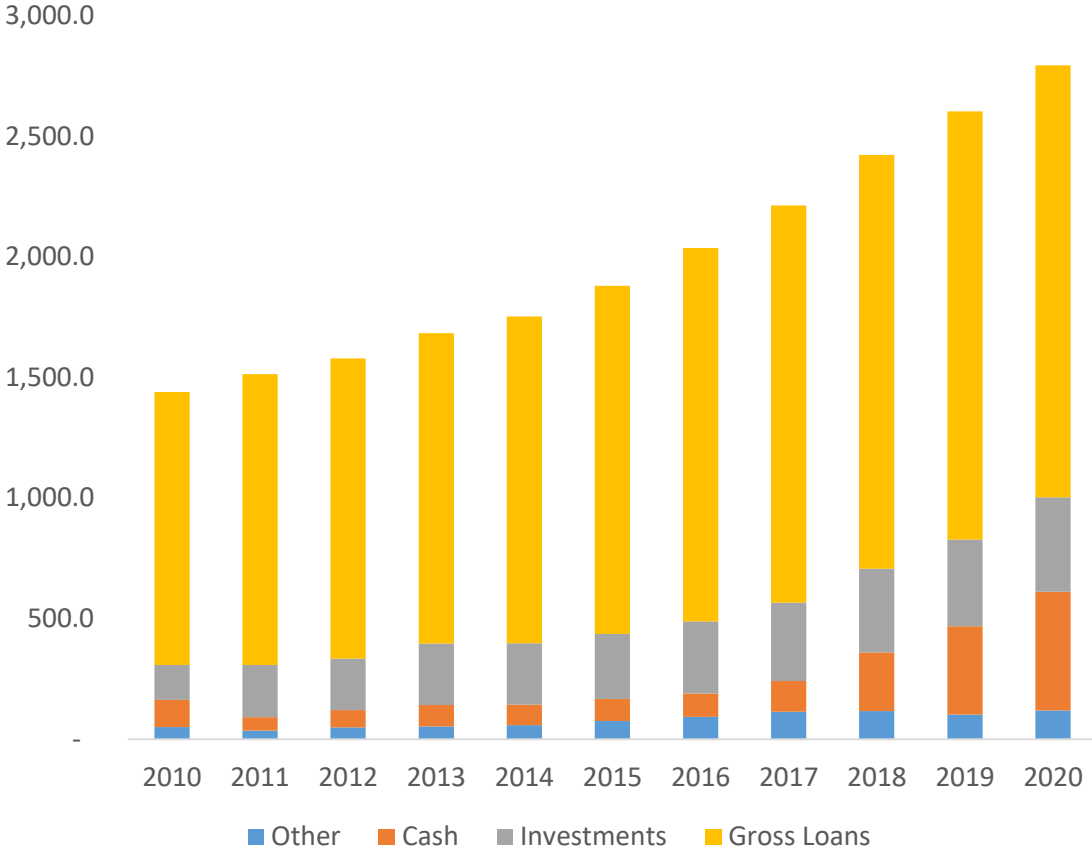
- This study seeks to:
 1. establish the nexus between the loan to deposit ratio and profitability within the credit union movement and,
 2. to ascertain whether there is an optimal range for the loan-to-deposit ratio.

Contribution to existing literature

- With the onset of the Covid-19 pandemic, the question of credit union liquidity became more pertinent as there was much discussions on various types of forbearance for institutions and customers alike.
- This reality triggered a closer look from the regulators in simulating the potential impact of the increased liquidity demands on the credit union sector.
- The existing framework target commercial banks
- It would therefore be prudent to determine optimal levels for the LTD in Credit Unions

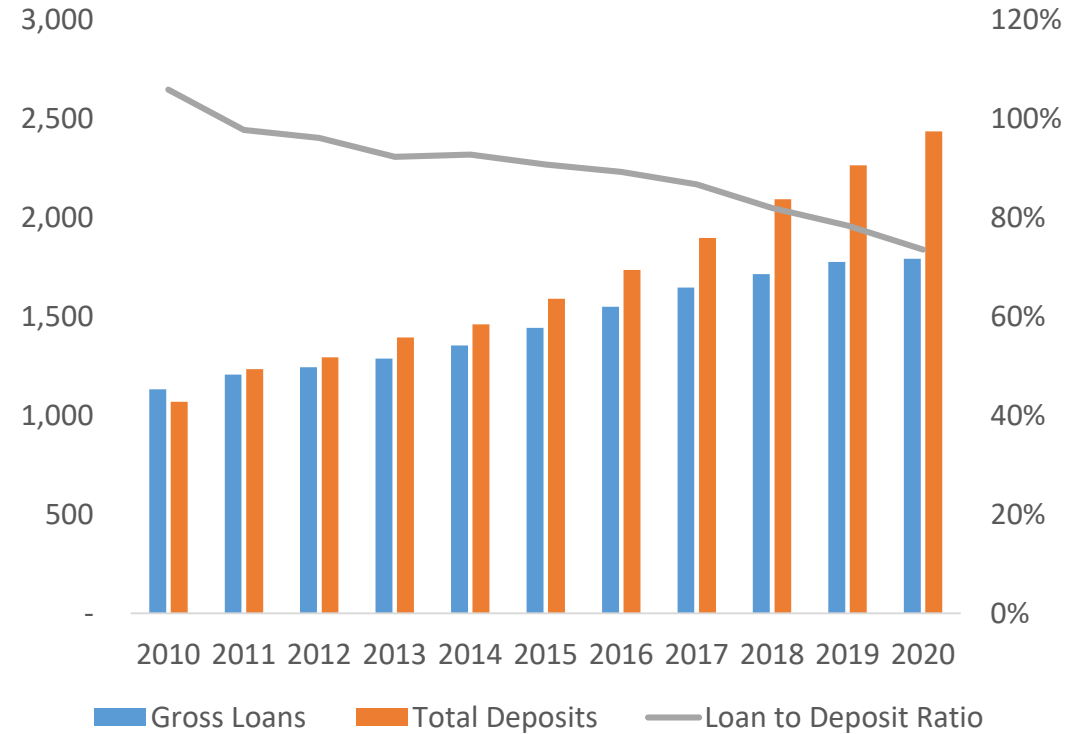
Structure of Credit Union Sector

YEAR	No. of Credit Unions	Members ('000)
2016	34	179
2017	33	188
2018	33	207
2019	33	208
2020	33	218

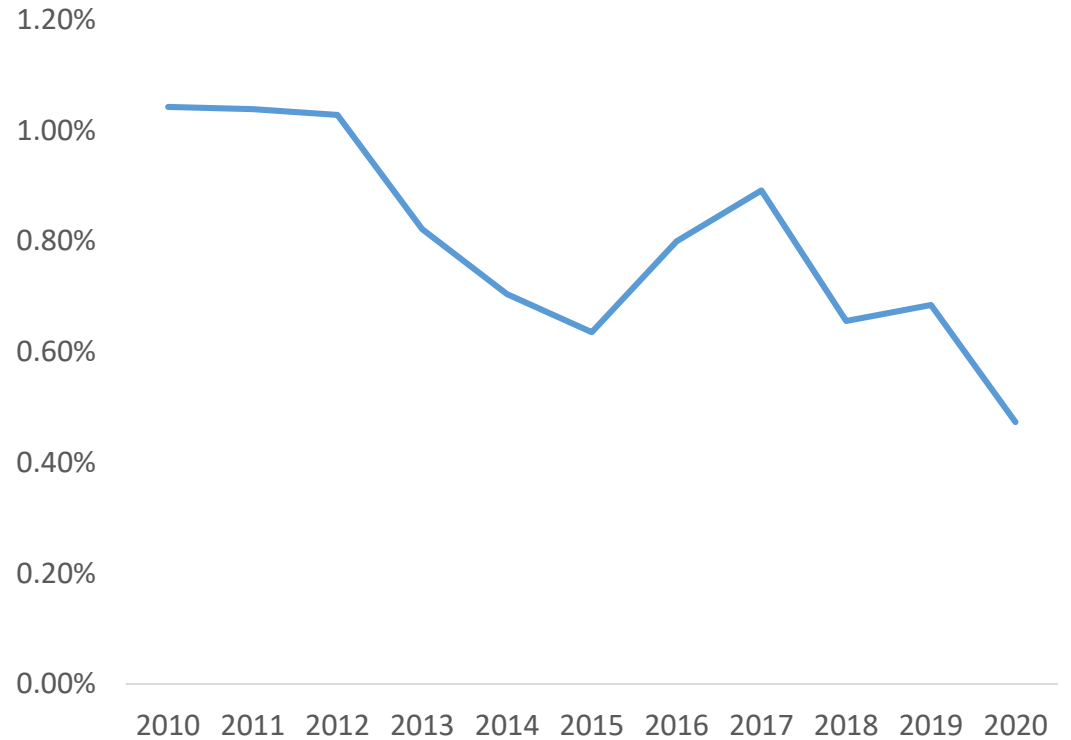


Credit Union Performance

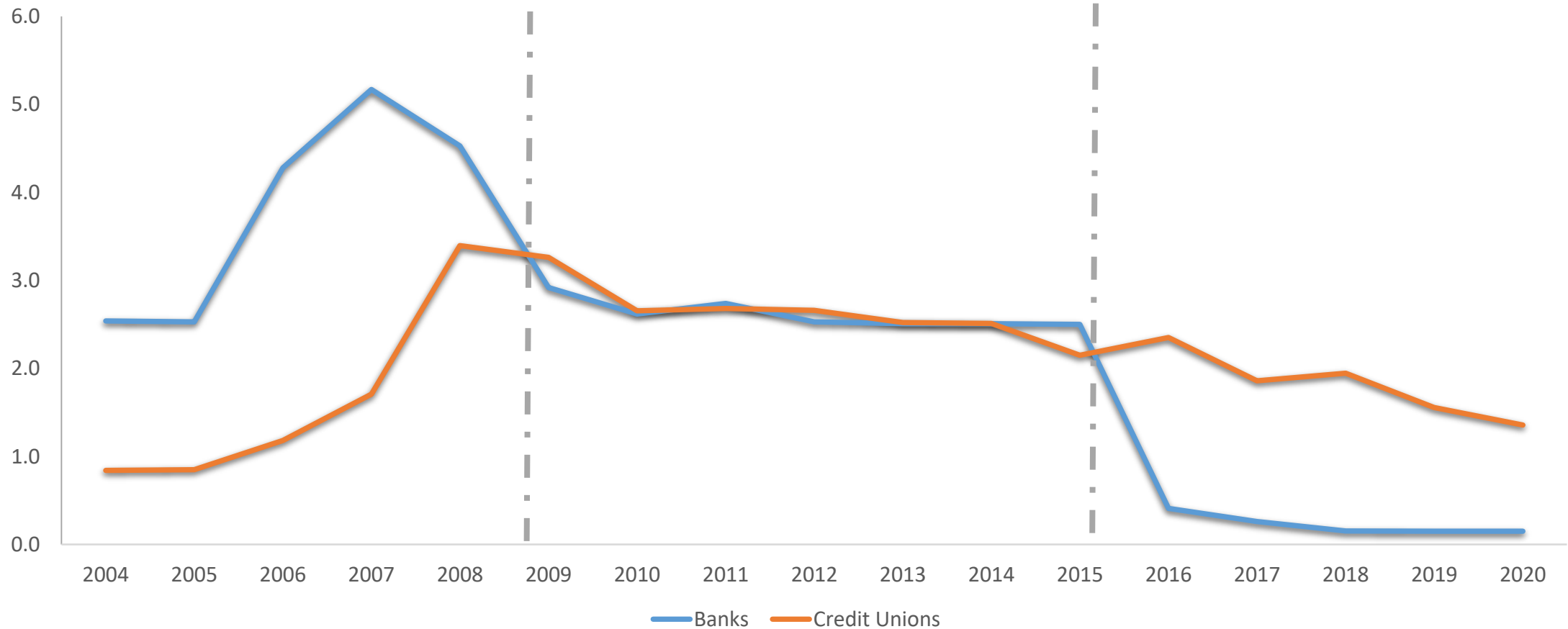
Liquidity



Profitability



Commercial Bank Minimum Interest Rates vs Credit Union Rates



Observations During Covid-19

Initial concerns:

- Significant layoffs
 - ⇒ Decline in liquidity
 - ⇒ Decline in deposits
 - ⇒ Increases in NPLs
 - ⇒ Decline in profitability

Response:

- Loan Moratorium (by entities)
- Regulatory Forbearance
- Ongoing dialogue on stability

Key Stats		
	Mar 2020	Mar 2021
Total Assets	2,654.3	2,836.4
Total Loans	1,774.5	1,786.7
Total Deposits	2,314.4	2,472.0
LTD	76.7%	72.3%
NPLs	9.6%	13.8%
ROA	0.9%	0.6%
Liq Assets% of Deposits	23%	28%

Existing Literature

Paper	Author	Findings
The Impact of Risk Factors on the Financial Performance of the Commercial Banking Sector in Barbados	Wood & McConney (2018)	Negative relationship between liquidity and financial performance.
Impact of Loan Deposit Ratio on Profitability: Panel Evidence from Commercial Banks in Malaysia	Rengasamy (2014)	High LTD: Exposure to liquidity challenges Low LTD: Low Liquidity Risk, Constrained Revenue
The Impact of Liquidity Asset on Iranian Bank Profitability	Shahchera (2012)	A non-linear relationship between liquidity and profitability
A Macro-prudential Approach to Address Liquidity Risk with the Loan-to-deposit Ratio	Van den End (2016)	Established an upper limit and lower limit as boundaries in which liquidity ratios should be managed

Methodology

$$ROA_{it} = \alpha + \sum_{j=0}^n \beta_j L_{it-j} + \sum_{j=0}^n \gamma_j M_{t-j} + \sum_{k=1}^n ROA_{it-k} + \mu_{it}$$

L is a Vector of idiosyncratic variables including:

- Loan to deposit ratio (ltd)
- Size (z)
- Non Performing Loans (npl)

M is a Vector of macro variables including:

- GDP Growth (y)
- Interest rate differential (ir)

- Dependent variable – Return on Assets (roa)
- i-cross section
- t-time
- N=4

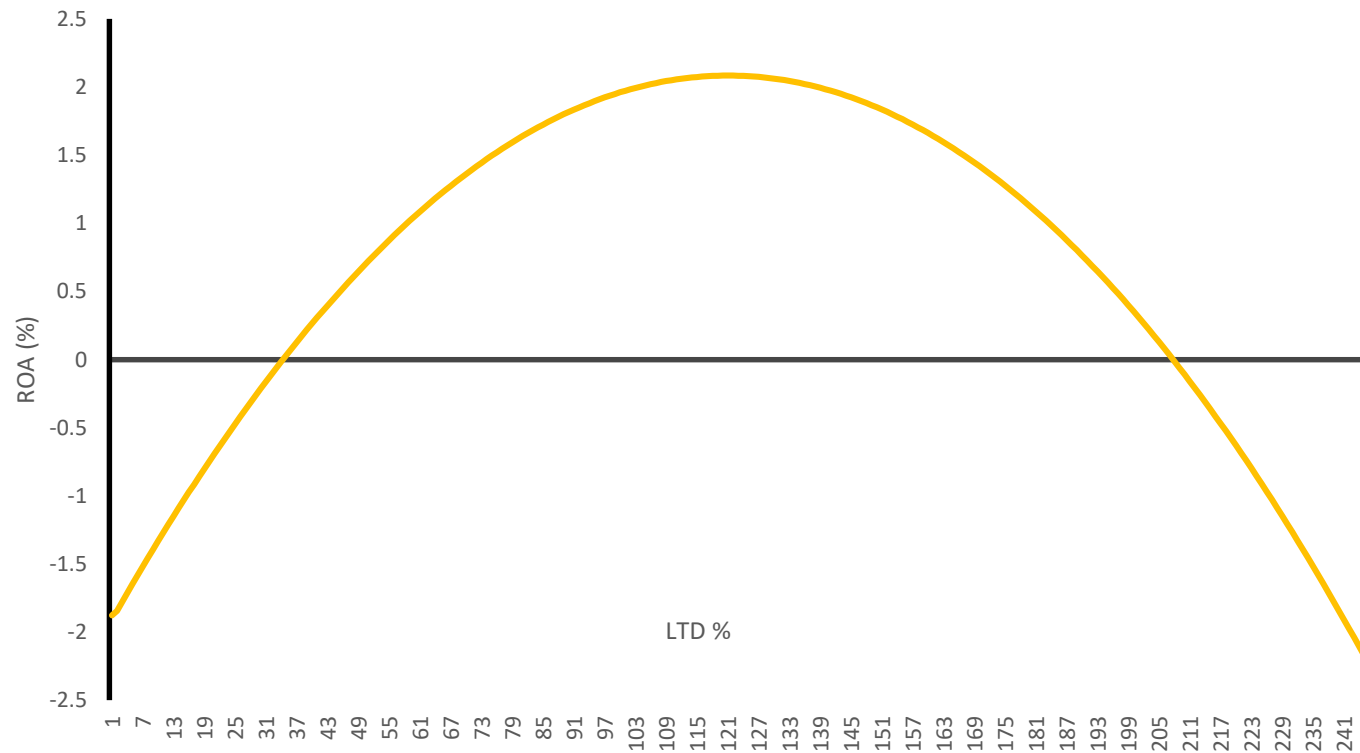
Variable	Apriori
LTD	+
LTD ²	-
z	+
NPL	-
y	+
ir	+
roa(-1)	+

Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-2.4522	0.8044	-3.0483	0.0024
LTD	0.0663	0.0210	3.1546	0.0017
LTD ²	-0.0003	0.0001	-2.0661	0.0391
ROA ₍₋₁₎	0.1667	0.0339	4.9140	0.0000
Y ₍₋₁₎	0.0370	0.0124	2.9893	0.0029
IRD	0.1907	0.0263	7.2380	0.0000

Estimating the Frontier

$$ROA_{it} = -2.452 + 0.066LTD_{it} - 0.0003LTD_{it}^2 + 0.167ROA_{it-1} + 0.191iIRD_t + 0.037Y_{t-1}$$



Conclusion