DETERMINANTS OF NON-PERFORMING LOANS IN TRINIDAD AND TOBAGO: A GENERALIZED METHOD OF MOMENTS (GMM) APPROACH USING MICRO LEVEL DATA

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OUTLINE

- Introduction
- Literature review
- Stylized facts
- Methodology and estimation
- Recommendations and limitations
- Summary and conclusion

INTRODUCTION

- According to Beck et al. (2013), non-performing loans (NPL) have been identified as one of the major factors contributing to credit risk for commercial banks.

- In the 1980's where, over the period 1986 to 1989, the ratio of non-performing loans to total loans for the entire commercial banking industry rose from 11.7% to 24.6% respectively.

- This reflected the existence of weak credit controls and the provision of loans to highly risky individuals. This resulted in the failure of several entities with affected their NPL's and profitability.

INTRODUCTION

- High NPL's were also intensified due to deteriorating economic conditions.

- As such, the rationale for this paper is to go behind the overall NPL and identify the bank or institutional level factors that can influence NPL given the importance of each individual institution to the overall health of the financial system.

- In mid-2011, NPL for the commercial banking sector stood at 7.5 per cent of total loans. Although it has gradually declined and currently stands at approximately 4.2 per cent in June 2014, a lower level would be beneficial to both the commercial banks and financial stability.

LITERATURE REVIEW

- Berger and DeYoung (1997)

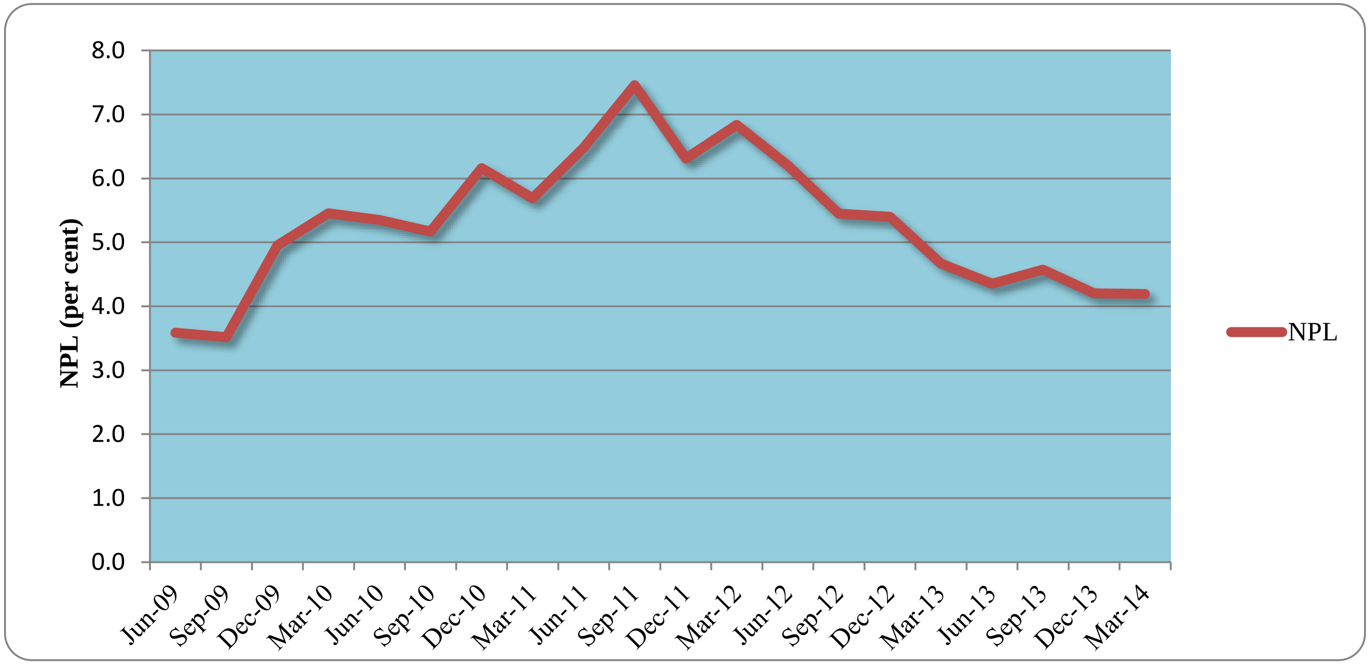
Variable	Hypothesis Tested	Impact on Efficiency/Risks
Non-Performing Loans (NPL)	Dependent Variable	
Return on Equity (ROE)	Bad Management	Lower returns may signal higher cost due to poor management practices
	Skimping	Lower cost since limited resources are allocated to monitoring loans thus leading to loan problems
Equity to Assets (EQTA)	Moral Hazard	Low capital may increase the desire to take on a riskier portfolio
Loans to Assets (LTOA)	Moral Hazard	Increasing risk through a greater amount of loans
Loans Growth (DLOANS)	Pro-cyclical Credit Policy	Increasing risk through a greater amount of loans

LITERATURE REVIEW

- Fofack (2005)

- Klein (2013)

STYLIZED FACTS



Source: Central Bank of Trinidad and Tobago

METHODOLOGY AND ESTIMATION

This paper uses ***unpublished*** quarterly data to estimate a GMM/Dynamic Panel model from March 2009 to June 2014 for eight (8) commercial banks in Trinidad and Tobago giving a total of one hundred and seventy-six (176) observations.

The model:

$$\Delta y_{i,t} = \gamma \Delta y_{i,t-1} + \beta \Delta x_{i,t} + \Delta \varepsilon_{i,t}$$

$where\ y_{i,t} = (NPL), x_{i,t} = (ROE, EQTA, LTOA, DLOANS)$

ROBUSTNESS

Test	Statistic	Inference
Sargan Test (J-Statistic)	$\chi^2_{3.8352,8-5}$**	Over-identifying restrictions are valid
Arellano-Bond Test:		
AR(1)	-4.0389***	Serial correlation of type AR(1)
AR(2)	-2.4069*	No serial correlation of type AR(2)

* and ** denotes the non-significance at 1% and 10% respectively and *** denotes the significance at 1%.

RESULTS

Variable	GMM		Pooled	
	Coefficient	T-statistic	Coefficient	T-Statistic
NPL(-1)	0.566	3.57*	0.903	13.10*
ROE	-0.005	-1.23	-0.016	-1.68***
LTOA	0.166	4.26*	0.023	1.60
DLOANS	-0.042	-9.36*	-0.045	-1.69***
EQTA	0.169	4.12*	0.013	0.44

* and *** denotes the significance at 1% and 10% respectively

RECOMMENDATIONS

- Provide higher provisioning for weaker credits .

- Examining the lending policies to counteract weak underwriting standards.

- Re-examine rehabilitation units for marginal accounts and proposing well defined corrective strategies. Perhaps not waiting the full 90 days but as soon as 30 days.

LIMITATIONS

- While it is recognised that NPL are influenced by macroeconomic factors such as GDP and unemployment, the paper examines *only the microeconomic determinants*.

- It does not disaggregate NPL by purpose (residential, commercial and real estate mortgage).

CONCLUSION

Estimation using a two-step GMM proposed by Arellano-Bond (1991) led to the rejection of the 'skimping' and 'bad management' hypotheses. However, support was found for the 'moral hazard' hypothesis through excessive lending as a key determinant of NPL at the micro level.

Research can also be extended to analysis of the macroeconomic factors that contribute to NPL in an effort to compare the extent to which micro and macro factors affect NPL.

Questions?