Determinants of Commercial Bank Liquidity in the ECCU

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Objective

- The aim of this paper was an investigation into the determinants of liquidity holdings within the Eastern Caribbean Currency Union (ECCU).

- Why study liquidity?
  - Liquidity forms a vital role in the stability of a bank and banking system and by extension the financial sector as whole.

Introduction

- In fact the entire banking system is particularly reliant on a satisfactory degree of liquidity because if a single bank registers a liquidity shortage it will affect the whole banking sector and even the rest of the financial sector through the contagion effect (mainly because of interbank dependencies) and may ultimately raise the level of systemic risk.

Introduction

- As Diamond and Dybvig, 1983, Diamong and Rajan, 2001 have shown it is important that banks hold sufficient levels of liquidity to insure them against unanticipated liquidity shocks.
- As loans are relatively illiquid, large and unexpected deposit withdrawals can lead to insolvency as it may be too costly or not possible to raise liquidity on short notice, due to capital market imperfections.
- Instead of self-insuring, banks could resort to other forms of financing, such as accessing interbank markets, central bank liquidity windows, or external credit lines.

Introduction

- However, asymmetric information may lead to coordination failures on the interbank market, and external credit lines may freeze (as seen during the recent financial crisis), so that solvent but illiquid banks would still fail, absent a Lender of Last Resort (LOLR) (Rochet and Vives, 2004).

- Thus banks hold a buffer of liquid assets as self-insurance, equating the marginal benefit of holding liquid assets to the marginal cost of alternative investments.

- Nonetheless sustaining the optimal level of liquidity is a real art of bank's management.

Introduction

- Achieving the optimum level of liquidity is extremely dependent on various properties such as: size, characteristics, nature and level of complexity of activities of a bank.

- Greuning and Bratonovic, (2004) explains the management of liquidity as the bank has to follow a decisional structure for managing liquidity risk; an appropriate strategy of funding, the exposure limits and a set of rules for arranging liquidities in case of need.

Introduction

- **The three main sources of liquidity risk are:**
  - on the liability side, there is a large uncertainty on the volume of withdrawals of deposits or the renewal of rolled-over inter-bank loans.
  - On the asset side, there is an uncertainty on the volume of new requests for loans that a bank will receive in the future
  - off-balance sheet operations, like credit lines and other commitments, positions taken by banks on derivative markets.

Literature Review

- Studies which focus on the estimation of the estimation of the demand function of banks for excess reserves using the model of Agénor, Aizeman,.Hoffmaister (2000).

- This model specifies the demand for liquidity as a function of the ratio of excess liquid assets over total bank deposits, the ratio of required liquid assets to total bank deposits, current and lagged values of the coefficient of variation of the cash-to-deposit ratio, the deviation of output from trend, and the discount rate.

- Aspachs, O., Nier, E., Tiesset, M (2005) analysed the determinants of liquidity of UK banks.

Literature Review

- The effects of the financial crisis on the liquidity of commercial banks in Latin America and Caribbean countries investigated Moore,W. (2010).

- Liquidity created by Germany's state-owned savings banks and its determinants has been analysed by Rauch, C., Steffen, S., Hackethal, A., Tyrell, M. (2009).

- Fielding, D., A (2005) who inserted political stability into the study of liquidity determinants.

Literature Review

- Studies cited above suggest that commercial banks' liquidity is determined both:
  - bank specific factors (such as size of the bank, profitability, capital adequacy and factors describing risk position of the bank)
  - as well as macroeconomic factors (such as different types of interest rates, interest margin or indicators of economic environment).
- It can be useful to take into account some other influences, such as the realization of financial crisis, changes in regulation or political incidents.

Methodology

- In panels where N is small (less than 10) and T is relatively large as in this case, the standard approach is to treat the equations from the different cross-section units as a system of seemingly unrelated regression equations and then estimate the system by generalized least squares techniques.

- In this specification the correlation across units becomes a natural part of the specification.

Methodology

- However this estimation performs best in large sample.
- Beck and Katz (1995) found that FGLS tends to underestimate the true variability of the estimator when the time points (T) are not substantially larger than the cross-sectional units (N).
- In this context, they suggest using Panel Corrected Standard Errors (PCSE) in the case of non-spherical disturbances.

Data

- Liquidity measures are:
  - L1=(liquid assets)/(total assets)
  - L2=(liquid assets)/(deposits + short term borrowing)
  - L3= (loans)/ (total assets)
  - L4=loans/ (deposits+short term financing)

Explanatory variables

- Lagged liquidity ratio (+)
- Capitalization (–)
- Net Interest Income to Average Earning Assets (–)
- Loan-loss reserves ratio (+)
- Size (–)
- Real GDP growth (–)
- Deposit volatility (+)
- Interest Rate Spread (–)
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Results

- Overall results from the baseline model shows the measures of liquidy are persistent (ie the follow an autoregressive process).
- This result is indicative of the fact that banks target an optimum level of liquidity which is consistent with their operations and regulatory requirements.
- The loan loss provision (LLP) is significant and positive but only in the PCSE model this indicates that as the perception of a riskier or anticipation of losses banks hold more liquidity.

Results

- Profitability as measured by NIM was found not be a significant source of liquidity decisions for banks in Antigua and Dominica.
- However in Grenada, St Kitts and Nevis and Saint Lucia profitability was found to be factor in determining liquidity.
- As predicted by theory that as profits rise banks reduce their level of liquidity

Results

- Liquidity ratios are related to bank size, with non-linearities as in the case of Grenada, St Kitts and Nevis and Saint Lucia:

- liquidity holdings increase with bank size, but there is a point at which bank size begins exhibiting a marginal decreasing effect on liquidity.

Results

- In the second stage estimation a probit model used to answer the question what is the probability that a bank will hold liquidity in excess of regulatory stipulations. In this model excess liquidity for a bank is defined as anything above the average holdings of liquidity for a bank.
- Overall the results suggest that there is an increased probability of excess liquidity by banks when loan loss provisioning which is a proxy for risk increases.

Results

- Likewise there is consistent prediction of reduced excess liquidity when profits by banks are on the increase.
- Additionally there appears to be evidence an increasing probability of excess liquidity when bank size as measured by total assets increases.
- Real GDP growth also tends to increase the probability that banks will hold excess liquidity.

Conclusion

- In concluding it appears that Commercial Banks decision to hold excess liquidity is driven by risk aversion, buffer stock motivation.

- However when profitability is on the rise banks reduce their liquidity.

Conclusion

- The current analysis of liquidity buffers in the ECCU finds that they are comfortably above legal and prudential requirements.
- Therefore banks should be able to withstand turbulent financial times.
- However recent episodes of bank intervention due to acute liquidity shortages highlight that worsening loan portfolios can lead to liquidity crisis and eventual solvency issues.

Conclusion

- A closer look at the reasons for which banks would want to hold liquidity buffers above legal or prudential on persistent basis.
- This would seem to imply that there is limited lending opportunities and some inefficiency in financial intermediation.
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Conclusion

- A first policy lesson stemming from these results would be to continue with on-going efforts to strengthen financial sector supervision, enhance financial safety nets and develop financial markets. Greater confidence in the system and more opportunities for investment and liquidity buffers without compromising financial stability.