

Performance Analysis of Liquidity Indicators as Early Warning Signals

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Summary

Liquidity is one of the crucial elements of bank safety and soundness. Thus, various definitions of liquidity indicators are proposed to monitor the liquidity condition of banks. Though there are many indicators of banks' liquidity conditions, the liquidity ratio (LiqR), which is usually defined as liquid assets divided by liabilities, is one of the most common used by banks and regulatory authorities.

Although LiqR is widely employed, its usefulness as an early warning indicator for liquidity risk is highly questionable. A good example is the case of the US-based Southeast Bank, which used over 30 liquidity indicators to manage its liquidity. When the bank failed in 1991, the reason cited for this second largest bank failure in two decades was "liquidity risk." One plausible reason for the failure of LiqR to detect deteriorating liquidity conditions is the poor quality of the liquid assets used in the measure, which may not be difficult to sell during a crisis. Consequently, a bank with a high LiqR may fail because of liquidity risk during a crisis, suggesting that LiqR does not provide a useful early warning signal of a bank's distress.

This study examines whether two newly developed liquidity indicators, namely, liquidity creation (LiqC) and net stable fund ratio (NSFR), have better liquidity forecasting ability. LiqC has been proposed by academics, whereas NSFR has been proposed by Basel III; both indicators weights to take account of the quality of different liquid assets and liabilities.

We compare the forecasting ability of the three above liquidity indicators using data from a sample of 855 European and 359 US banks between 2005 to 2009. We classify the observations into two periods, a 'normal' period (2005–2007) and a crisis period (2008–2009). The bank data are classified into normal and distressed banks, with the latter defined as a bank that experienced a bank run, bailout, or failure.

Our results show that LiqC and NSFR outperform LiqR as an early warning signal. In particular, a one unit increase of LiqC indicates a 0.14% probability that a particular bank will experience a bank run. Furthermore, LiqC is superior among the three indicators when banks actively engage in income diversification but not when banks engage in fund diversification. Therefore, a well income-diversified bank with a high LiqC tends to have higher probability of experiencing distress in the subsequent period.