

Full length article

An empirical analysis of macroeconomic and bank-specific factors affecting liquidity of Indian banks

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Abstract

This paper investigates bank-specific and macroeconomic factors that determine the liquidity of Indian banks. To explore the association, we perform OLS, fixed effect and random effect estimates on a data set of 59 banks from 2000 to 2013. Studied bank-specific factors include bank size, profitability, cost of funding, capital adequacy and deposits. GDP, inflation and unemployment are the macroeconomic factors considered. We also perform liquidity trend analysis of Indian banks based on ownership. Findings reveal that bank ownership affects liquidity of banks. Based on panel data analysis, we suggest that bank-specific (except cost of funding) and macroeconomic (except unemployment) factors significantly affect bank liquidity. These include bank size, deposits, profitability, capital adequacy, GDP and inflation. Further, bank size and GDP were found to have a negative effect on bank liquidity. On the other hand, deposits, profitability, capital adequacy and inflation showed a positive effect on bank liquidity. Cost of funding and unemployment showed an insignificant effect on bank liquidity. Our paper highlights new facts for enhanced understanding of liquidity in emerging economies like India.

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Keywords: Banks liquidity; Bank specific; Macroeconomic; Fixed and random effect

1. Introduction

A balance sheet provides vital information regarding a bank's financial position at any given point of time. The asset side includes loans forwarded to borrowers while the liabilities side, among other things, shows deposits made by customers (Diamond & Rajan, 1999). Banks not only support the economy by providing finance, but also assist in transactions carried out by an economic agent (Horváth, Seidler, & Weill, 2014). Further, banks play a crucial role of transforming illiquid assets into liquid assets through demand deposits (Diamond & Dybvig, 1983). However, an unexpected increase in liquidity demand forces banks to sell their illiquid assets at lower prices resulting in losses and increased risk (Allen & Gale, 2004; Allen & Santomero, 2001). A study on the association between capital level and risk explains that bank capital behaves as a

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buffer against the risk faced by banks (Bhattacharya & Thakor, 1993). On the other hand, Diamond and Rajan (2001) argued that greater capital buffer in banks led to less liquidity. Horváth et al. (2014) studied the relationship between capital and liquidity creation by banks and found that small banks with high level of capital created less liquidity whereas large banks having excessive capital consistently created more liquidity.

According to the guidelines of the Reserve Bank of India (2012), “liquidity is a bank’s capacity to fund increase in assets and meet both expected an unexpected cash and collateral obligations as they become due”.

Many researchers have emphasized that the fundamental role of banks as creators of liquidity makes them susceptible to liquidity risk (Ratnovski, 2013). Liquidity risk is the incapability of a bank to fulfill its financial commitments without losing assets or incurring undesirable expenditure. To avoid such a situation and maintain financial stability, it is preferable for banks to maintain a sufficient liquid buffer (Arif & Nauman Anees, 2012). After the global financial turmoil, low solvency of banks was assumed to be its root cause. The Basel Committee on Banking Supervision (2010) emphasized solvency of, and liquidity creation by banks, and proposed new capital rules to avoid such a situation in future. These rules included maintaining higher capital reserves by banks.

Liquidity risk had mostly been considered secondary risk in banking literature before the global financial crisis (Matz & Neu, 2007). However, after the crisis, attention of policy makers and researchers was drawn towards the grave effects of liquidity risk. It is noteworthy however, that extant literature does focus on banks’ insufficient risk management practices (Crowe, 2009). Consequently, inadequate liquidity gained significant attention, and became a solemn concern for banks (Jenkinson, 2008).

Literature immediately after the global financial crisis suggested that the crisis mainly affected developed economies, but when the Indian banking sector observed transfer of deposits from private sector banks to the public sector banks, it drew the attention of practitioners and researchers alike. Eichengreen and Gupta (2013), and Acharya and Kulkarni (2012) also asserted that post-crisis liquidity risk affected the Indian banking system. Similarly, studies on liquidity of Indian banks by Shukla (2014) highlighted that liquidity pressure affected Indian economy because of the extraction of investments made in the financial system of India. While it is generally believed that the Indian banking system has stringent rules and regulations and its policies would act as an insulator and protect Indian banking system from such a crisis, it is noteworthy that the liquidity problems faced by the Indian banking sector was not due to the inefficiency of the banking system or laxity in regulations, but because of the insecurity of the customers. Thus, it was customer sentiment that affected liquidity in Indian banks, especially in the private banking sector (Eichengreen & Gupta, 2013). Bhati and De Zoysa (2012) mentioned mismanagement of liquidity as one of the major reasons behind liquidity problems.

Although Indian banks have largely been able to adhere to guidelines of Reserve Bank of India for managing liquidity, factors affecting liquidity in Indian banks remain relatively unidentified owing to a scarcity of studies on management of liquidity in Indian banks (Bhati & De Zoysa, 2012).

The present study seeks to fill this gap by empirically analyzing macroeconomic [gross domestic product (GDP), inflation (INFLA) and unemployment (UNEM)] and bank-specific [return on assets (ROA), bank size (SIZE), deposits (DEP), cost of funding (COF), capital adequacy ratio (CAR)] factors affecting liquidity of Indian banks, thus making a significant contribution to existing body of literature, and bringing high originality value. Also, because we have considered both macro and bank specific factors to observe their effect on liquidity, we get a holistic view of the set of factors that influence liquidity, and the relationship that each factor shares with liquidity. This study provides deep insights into the relationships that liquidity shares with various macroeconomic and bank specific factors. Findings will enable bank managers to formulate appropriate strategies to maintain adequate liquidity while incurring minimum losses.

In this direction, the objective of this study is to identify macroeconomic and microeconomic (bank-specific) factors, which affect the bank liquidity.

The rest of the paper is structured as follows: Section 2 gives an overview of the Indian banking system and shows liquidity trends in the Indian banking system from 2000 to 2013. Section 3 presents literature review on determinants of liquidity. Section 4 describes data collection and research methodology. Section 5 shows results of analysis. Section 6 comprises discussion of the results. Section 7 includes conclusions and managerial implications.

2. Overview of Indian banking

In 1921, the banking system of India originated with the establishment of the Presidency Bank which led to the formation of the Imperial Bank of India for carrying out central banking functions. Later in 1934, Reserve Bank of India

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