Liquidity requirement and banks' lending

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This study proposes a model that describes banks' decisions about how much liquidity they hold and analyzes how regulations of the banks' liquidity affect the amount of their lending.

After the financial crisis of 2007 - 2008, the danger of negative externalities that highly indebted financial institutions have is given attention and the Basel Committee developed a new regulatory framework on banks, Basel Ⅲ , to make the financial system stable. The framework introduces new rules governing banks' debt structures and requirements to hold certain types of liquid assets. There is, however, a remarkable asymmetry in the economic analysis of the capital and liquidity regulations.

Most researchers admit that liquidity regulation contribute to the stable financial system. In literature, however, it is argued that liquidity regulation have some negative results such as decrease of banks' profits and their lending. In addition these effects, Diamond and Kashyap (2016) point out that banks are likely to hold ex-post excess liquidity under liquidity regulation when depositors make decisions based on banks' soundnesses. This result implies that the regulation forces banks to suffer an unnecessary decrease of their lending, and thus, banks would try to mitigate the loss by adjusting their portfolio. Thus, how liquidity regulation affects banks' lending depends on their response to the regulation.

In other to address these issues in more depth, we consider two types of safe assets; "safe asset" (reserve) and "liquid asset" that is more profitable but less reliable as liquidity than reserve. Then, we investigate the amount of banks' liquidity and lending in the economy where there exist multiple sets of safe assets that satisfy liquidity regulation. In addition, we analyze two types of liquidity regulations; one focuses on banks' survivability, and the other focuses on continuity of their liquidity holding.

The model shows that, whether or not banks hold the "liquid assets" depends on its relative effectiveness as liquidity and that banks can hold just enough reserves to repay depositors when the liquid assets are sufficiently effective source of liquidity. However, this result does not mean there exists no excess liquidity, and in fact, banks still hold ex-post excess amount of liquidity under liquidity regulation regardless what is their portfolio and which type the regulation is.

With respect the amount of banks' lending, the model shows that the amount varies according to how banks satisfy liquidity regulation and the probability that severe reduction of lending happens partly depends on the type of liquidity regulation. These results implies that banks' decisions for mitigating losses caused by a liquidity regulation lead an undesired outcome, and thus, we consider more carefully banks' decisions under a liquidity regulation.

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