11 March 2020

Minimum reserve requirements: their role and changes made to them

Minimum reserve requirements — i.e., the requirement that banks hold liquid assets amounting to a given proportion of their liabilities — have long been among central banks' policy instruments. Their role has changed as circumstances have changed (for instance, in the wake of the financial crisis), as new policy instruments have been introduced (including macroprudential tools), and as general understanding of the efficacy of monetary policy has grown. In most economies, reserve requirements now serve primarily to support monetary policy. This memorandum discusses the role of reserve requirements, their function at the Central Bank of Iceland, and the ways in which they serve that function today. This is followed by a discussion of the changes that have now been made to reserve requirements.

I The overall role of reserve requirements

Although reserve requirements play a multi-faceted role, their main function falls into three categories.[1] First, reserve requirements can play a role in liquidity management and can facilitate more effective monetary policy transmission; second, they can serve as a prudential tool in guaranteeing that banks hold a specified proportion of safe liquid assets; and third, they can be applied in support of monetary policy.

Prudential role

Liquidity can dry up when there are runs on banks and when capital flows out of the country — two occurrences that often coincide in small open economies. Reserve requirements play a role in ensuring that banks hold a certain amount of liquid assets in accounts with the central bank — assets that they can tap under such circumstances. It is likely that the less flexibility commercial banks have in satisfying their reserve requirements, the more effective this prudential role will be. For instance, if it is possible to satisfy reserve requirements on an

[1]For further information, see IMF *Working Paper* 11/36, "Central Bank Balances and Reserve Requirements", by Simon Gray.

average basis over a given reserve maintenance period, a commercial bank or savings bank could conceivably meet their requirements early in the period, only to have no funds left in their central bank account when this prudential role is put to the test. If required reserves are held in a locked account with the central bank, however, the funds will be available when needed and when the central bank deems it appropriate to grant exemptions from the requirements.

Active monetary policy role

Minimum reserve requirements can perform the same type of monetary policy function as central bank interest rates do. Increasing reserve requirements would mop up liquidity, for instance, and increase the marginal cost of capital, thereby pushing market interest rates upwards. Applying the central bank's key interest rate is a more transparent and efficient way to affect market rates in modern financial markets, however. For example, it is unclear how much reserve requirements must be increased in order to bring about a specified change in market interest rates. Furthermore, if reserve requirements are interest-free or bear interest rates considerably below market rates, they can have an unforeseeable and undesirable impact on banks' interest rate spreads. As a result, the use of reserve requirements as a primary monetary policy instrument has widely been discontinued, and the tendency now is to use them instead as a support tool.

Liquidity management and more efficient monetary policy transmission

Reserve requirements can be useful in managing liquidity on central banks' balance sheets and can contribute to more effective transmission of monetary policy. Allowing financial institutions to satisfy liquidity requirements on an average basis within the reserve maintenance period gives them greater flexibility in liquidity management and enables them to respond to unexpected fluctuations in market liquidity. In this case, reserve requirements function as a sort of buffer that banks can either tap or loan to other banks in the interbank market if forecasts of liquidity flows do not materialise. By smoothing out interbank market flows, average reserve requirements can mitigate volatility in short-term interest rates, thereby contributing to more effective monetary policy formulation by better ensuring the achievement of the monetary stance intended by central banks and monetary policy committees at any given time. This is particularly true under conditions when it is difficult for central banks and commercial banks to forecast flows in their balance sheets. In the absence of reserve requirements, central banks could therefore need to intervene more often in the money market in order to keep interest rates at the desired level. Average reserve requirements can also enhance interbank market efficacy in view of increased flexibility in commercial banks' liquidity management.

Moreover, they create constant demand for central bank money and can make demand more predictable; for instance, if banks are required to hold larger reserves than they would otherwise choose. In addition, reserve requirements can be applied so as to boost demand for central bank money when the central bank is a net lender vis-à-vis commercial banks. It can be important, particularly in a system that is on the cusp of a glut or shortage of liquidity, to mitigate fluctuations in interbank rates.

Other functions of reserve requirements

If there is a glut of liquidity, reserve requirements can be used to reduce central banks' interest expense; for instance, by lowering interest rates on reserve balances or having them bear no interest at all. With interest-free reserve requirements, central banks can reduce the amount of liquidity in circulation at little expense. Interest-free reserve requirements affect banks' competitive position vis-à-vis other financial institutions, however, and give them an incentive to change the composition of their balance sheet in order to circumvent the requirements.

II Central Bank of Iceland minimum reserve requirements

The Central Bank of Iceland currently imposes minimum reserve requirements on commercial banks and savings banks.[2] The requirements are calculated as a proportion of the reserve base, which is defined in Central Bank Rules no. 585/2018, and they apply to funding for maturities of two years or less, with a few exceptions. Before the changes that have now been introduced, minimum reserve requirements fell into two categories: a fixed reserve requirement (1%) and an average maintenance requirement (1%). The average requirement has been held in the financial institution's general reserve account (its current account with the Central Bank), whose average balance over each reserve maintenance period must equal or exceed the specified reserve amount. The fixed reserve requirement is fulfilled by deposit of the reserve amount to a separate fixed reserve account with the Central Bank, which is locked during each reserve maintenance period. The Central Bank Monetary Policy Committee (MPC) determines the reserve ratio and its composition. The MPC also sets the interest rate on the reserve amount for both average maintenance (before this change it was 2.5%, or 0.25 percentage points below the Bank's key rate) and the fixed reserve requirement (now 0% and continues to be). Before the change, the combined reserve requirements of institutions subject to such requirements equalled about 40 b.kr., including a fixed requirement of 20 b.kr. and an average maintenance amount of 20 b.kr. per day in each maintenance period.

The role of the average reserve maintenance requirement imposed by the Central Bank

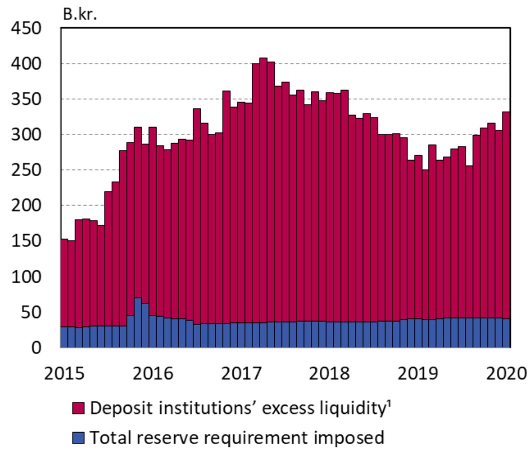
The average reserve requirement, imposed by the Central Bank more than two decades ago, is based on a model from the European Central Bank (ECB). As is the case for the ECB, the role of the reserve requirement in Iceland has been primarily to support monetary policy as regards liquidity management and to promote more effective monetary policy transmission. The objective in applying reserve requirements has been mainly to mitigate short-term volatility in the interbank market and to better ensure the achievement of the monetary stance intended by the Bank and the MPC at any given time. By creating constant demand for central bank money while giving financial institutions the opportunity to satisfy their reserve requirements on an average basis, the requirements function as a buffer, allowing commercial banks to respond to fluctuations in their liquidity. The average reserve requirement was also applied temporarily as a precautionary measure in connection with the settlement of the failed banks' estates.

[2] Institutions subject to minimum reserve requirements are Central Bank counterparties. From 20 March 2020 onwards, these are defined as commercial banks and savings banks, whereas before that date, credit institutions (and investment banks) were included as well.

The role of the average reserve requirement has diminished markedly as circumstances have changed. Commercial banks have had abundant excess liquidity in their Central Bank accounts or in term deposit accounts in recent years, and this has enabled them to respond to unexpected fluctuations in liquidity (Chart 1). Furthermore, it appears to be easier to forecast flows on the Central Bank balance sheet now than it was previously. This has greatly reduced interest rate volatility in the interbank market (Chart 2).

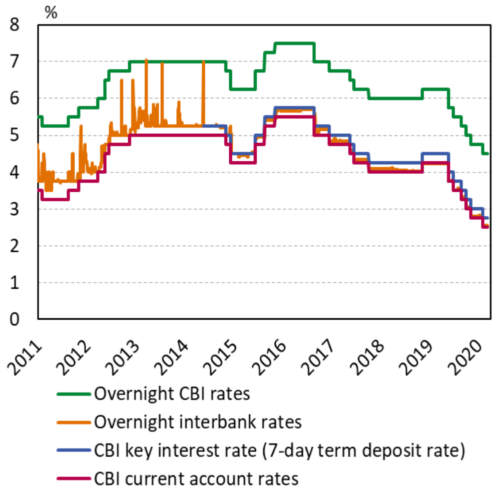
Liquidity management in the financial system has in recent years been shaped by the Central Bank's rules on liquidity coverage ratio (LCR) rather than by minimum reserve requirements. The rules have had a major impact on deposit balances with the Central Bank and have supported much stronger demand for central bank money than the minimum reserve requirements did, particularly because króna-denominated high-quality liquid assets as defined in the LCR rules are in short supply.[3] Minimum reserve requirements affect liquidity ratios, however (see below).

Chart 1
Reserve requirement and deposit institutions' excess liquidity[1]
January 2015 - January 2020



1. Deposit institutions' deposit balances in excess of imposed reserve requirements. Seven-day and one-month term deposits are included.
Sources: Central Bank of Iceland.

Chart 2
Central Bank key interest rate and money market interest rate
1 January 2011 - 6 March 2020



Source: Central Bank of Iceland.

The role of fixed reserve requirements

The fixed non-interest-bearing reserve requirement was imposed in June 2018. The main objective of this was to reduce the cost borne by the Central Bank of implementing monetary policy while the international reserves were large and the exchange rate differential with abroad was wide. The change was not intended to affect the monetary stance. The Central Bank's international reserves confer significant macroeconomic benefits that are enjoyed widely, particularly by the commercial banks, whereas the cost of the reserves was borne

[3] In order to satisfy their average reserve requirements, institutions subject to such requirements must hold an average daily balance of 20 b.kr. in their current accounts with the Bank, but liquid assets in payment systems and in term deposits with the Central Bank amount to 300 b.kr. According to the LCR rules, the commercial banks' combined liquidity requirements in Icelandic krónur amount to nearly 300 b.kr. The banks are permitted to satisfy a portion of this requirement with foreign assets, but they must hold króna-denominated liquid assets amounting to at least half of that amount, owing to the requirement that they satisfy at least a 50% liquidity ratio in Icelandic krónur.

largely by the Central Bank, owing to the wide interest rate differential. Non-interest-bearing fixed reserve requirements shift a portion of the cost of the safety net subsidised by the Central Bank (with its international reserves, for instance) to the entities that operate in the shelter of that safety net; i.e., Central Bank customers. The overall impact of reserve requirements on the banks' income was also relatively limited.

Supervision and rules on capital ratios and liquidity requirements, deposit guarantees, access to Central Bank facilities, and large international reserves have weakened the prudential role of reserve requirements in the event of a potential bank run or large-scale capital outflows from Iceland. However, fixed reserve requirements can also function as a reserve fund in order to support the payment system if access to collateral should be blocked for some reason.

III Interactions between reserve requirements and Central Bank liquidity rules

The Central Bank's LCR rules were first adopted in November 2013 but were amended in 2017 and again at the end of 2019. The aim of the rules is to mitigate credit institutions' liquidity risk by ensuring that they have enough liquid assets to fulfil their obligations under stressed conditions. The rules are part of the joint regulatory framework of the European Union, and the Central Bank has limited latitude to amend them in Iceland. With the advent of the LCR, the prudential role of minimum reserve requirements has diminished markedly. On the other hand, the reserve requirements affect banks' liquidity ratio (LCR), as the reserve amount is excluded from the calculation of the LCR. Changes in minimum reserve requirements therefore affect the ratio; i.e., all else being equal, a decrease in reserve requirements leads to a rise in the LCR, thereby increasing banks' scope to grant new loans.

IV The impact of the changes in reserve requirements

Both the prudential role and the liquidity management role of reserve requirements have weakened in importance in recent years, in light of changed conditions and the introduction of new macroprudential tools. Conditions have developed that allow for a reduction in reserve requirements without significant sacrifice cost. The MPC has decided to lower deposit institutions' average reserve requirement from 1% to 0%. The changes will take effect on 21 March 2020, the beginning of the next reserve maintenance period.

The fixed reserve requirement will remain unchanged at 1%. The Central Bank has decided that reserves held in fixed reserve accounts could be used in stress periods in the case that the Bank deems liquidity support necessary. Fixed reserve requirements will therefore be included as liquidity buffer according to liquidity rules. The reduction in the average reserve requirement and changes in the treatment of the fixed reserve requirement in liquidity rules will ease the banks' liquidity position and give them greater scope to respond to changed conditions in the domestic economy.

The reduction in average reserve requirements will increase LCRs and, other things being equal, will give the banks scope to increase the weight of other assets in their asset portfolios or to pay out liquid assets. Prior to this change, the combined reserve requirement totalled 40 b.kr. With the reduction of the average reserve maintenance requirement from 1% to 0%, deposit institutions' liquidity in excess of liquidity requirements will increase by approximately

20 b.kr., and their LCR will rise by as much as 8 percentage points. The Central Bank's decision on the treatment of the fixed reserve requirement under stressed conditions increases the banks' LCR by a similar amount. As a result, the combined rise in the LCR amounts to 10-15 percentage points, and the banks' liquidity will improve by a total of 40 b.kr.

It is not considered appropriate to revoke the Bank's authorisation to impose average reserve maintenance requirements, as circumstances could change and the role of the average requirement could become more important once again, including its role in supporting monetary policy conduct.

As before, reserve amounts due to fixed reserve requirements will be held in separate reserve accounts with the Central Bank. The only difference is that these balances will now be considered part of credit institutions' liquidity buffers according to liquidity rules, and will therefore continue to play a role in reducing the cost borne by the Central Bank of conducting monetary policy, in addition to playing a prudential role in the event of threats to payment system functioning.