Box 1

Special reserve requirement on capital inflows and private sector financing conditions

In June 2016, the Central Bank of Iceland introduced a capital flow management measure (CFM) entailing a special reserve requirement (SRR) on a portion of new inflows of foreign currency to Iceland. The SRR serves as a macroprudential tool that can reduce the build-up of systemic risks stemming from excessive capital inflows.[1] At the time, however, a key objective of the SRR was to strengthen the transmission of Central Bank interest rate changes to other interest rates, as this transmission mechanism began to break down in the wake of increased foreign capital inflows into non-indexed Treasury bonds in H2/2015. A sign of the breakdown was that Treasury bond yields fell steeply even though the Central Bank's interest rates had been raised and the Bank's Monetary Policy Committee (MPC) had signalled that further rate hikes could be expected. Due to these inflows, the monetary stance was increasingly reflected in the appreciation of the króna, as was the case during the prelude to the financial crisis in 2008. This can cause problems, as monetary policy transmission is generally less predictable when it takes place through the exchange rate channel than through the interest rate channel. The introduction of the SRR delivered the intended results, and changes in Central Bank interest rates were reflected again in Treasury bond rates, unlike the situation in 2015 (Chart 1).

It has been asserted that this objective of the SRR has not been achieved except partially and that the adoption of the requirement itself has impeded monetary policy transmission and prevented the Central Bank's rate cuts since August 2016 from being transmitted to rates offered to households and businesses, unlike what has happened with Treasury bond rates. The argument is therefore that the SRR has caused too much monetary tightening and restricted resident borrowers' access to credit to an excessive degree. This Box examines these factors.

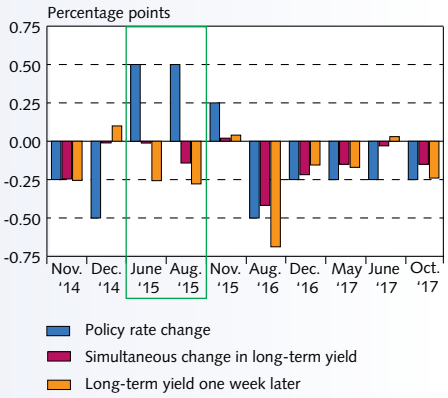
Interest rates on the commercial banks' covered bonds have developed broadly in line with Treasury bond rates

The secondary market for the commercial banks' covered bonds is considerably thinner than the domestic Treasury bond market, and the bonds themselves are much less liquid. Outstanding covered bonds have amounted to about 30% of the value of Treasury and Housing Financing Fund (HFF) bonds in the recent past, and turnover has been about 18% of Treasury and HFF bond turnover. On the whole, yields on covered bonds have developed in line with Government-guaranteed bond yields in recent years, as the Treasury bond market creates the basis for bond market pricing. Increased capital inflows in 2015 also led to a breakdown in the transmission of monetary policy to covered bond interest rates, even though the inflows had been invested only in Treasury bonds. As with Treasury bonds, it appears that monetary policy transmission to covered bond rates normalised again after the SRR was adopted. In general, yields on both short- and long-term nominal and indexed bonds have fallen in line with reductions in Central Bank rates in the recent past, which did not happen in 2015 (Charts 2 and 3). Since mid-2017, however, yields on indexed covered bonds have not fallen to the same degree as yields on comparable Treasury and HFF bonds. To some extent, this can probably be attributed to limited trading with covered bonds and a more homogeneous group of owners, both of which make prices

1. The rules on the SRR specify that 40% of new inflows of foreign currency for investment in high-yielding deposits and listed bonds and bills issued in krónur must be held in a non-interest-bearing account with the Central Bank for one year. Further discussion of the SRR can be found in Box 1 in *Monetary Bulletin* 2016/4 and Box 2 in *Monetary Bulletin* 2017/4.

Chart 1

Impact of changes in Central Bank interest rates on Treasury bond yields

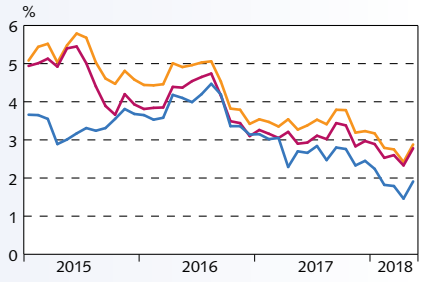


Source: Central Bank of Iceland.

Chart 2

Real Central Bank rate and real yields on non-indexed marketable bonds

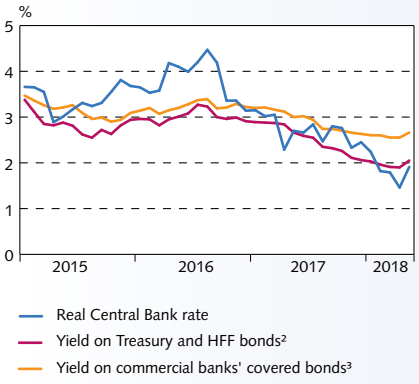
January 2015 - May 2018[1]



1. Based on data until 11 May 2018. 2. Five-year rate based on the estimated nominal yield curve. 3. Average yield on bonds maturing in 2019-2023.

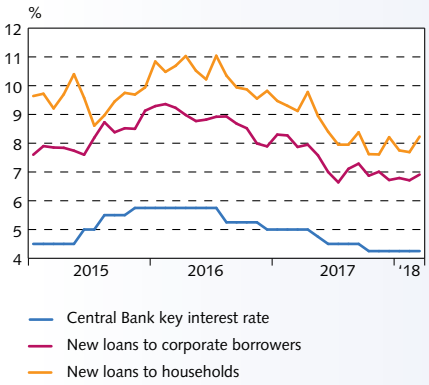
Sources: Kodiak Pro, Central Bank of Iceland.

Chart 3
Real Central Bank rate and yields on indexed marketable bonds
January 2015 - May 2018[1]



1. Based on data until 11 May 2018. 2. Five-year rate based on the estimated real yield curve. 3. Average yield on bonds maturing in 2021-2034.
Sources: Kodiak Pro, Central Bank of Iceland.

Chart 4
Central Bank key rate and commercial banks' nominal lending rates[1]
January 2015 - March 2018



1. The three large commercial banks' nominal lending rates, weighted average, by loan amount.
Source: Central Bank of Iceland.

stickier than Treasury and HFF bond prices. Furthermore, given that the pension funds hold the majority of covered bonds, less demand from them, concurrent with their increased foreign investment and emphasis on lending to fund members, could have had some impact and pushed yields higher than they would be otherwise. This is in line with the results of the Bank's recent survey of market agents, which indicate that respondents are of the opinion that indexed covered bond yields have not fallen as much as comparable Treasury and HFF bonds because of a relatively greater supply of covered bonds, a homogeneous group of investors, and decreased demand from pension funds.

Non-indexed lending rates to households have fallen in line with Central Bank rates ...

In the main, changes in Central Bank interest rates have been transmitted to rates offered to households in recent years, and this did not change after the SRR was activated (Charts 4 and 5). Credit institutions' non-indexed deposit and lending rates have fallen in line with Central Bank rates, as have variable rates on pension funds' indexed loans, which move broadly in line with indexed Treasury and HFF bond yields. On the other hand, changes in Central Bank rates have not been transmitted as effectively to other indexed rates, as the transmission mechanism is usually weaker in the case of longer-term indexed mortgage rates, and this did not change after the introduction of the SRR. Nevertheless, rates on the commercial banks' indexed loans to households have fallen in recent years and are close to an all-time low. Households' increased use of non-indexed loans and the pension funds' rising share in the mortgage lending market have strengthened the transmission of Central Bank rates to interest rates offered to households, and the SRR has not affected this in any way.

... and the SRR has not affected households' access to credit

There are no signs that the SRR has affected households' access to credit, either. As is discussed in Chapter III, credit system lending to households has grown by 5½% year-on-year in nominal terms in the recent past, as compared with annual growth of 1-2% for most of 2016 and virtually no growth at all in 2015, after adjusting for the effects of the Government's debt relief measures.

Rates on new loans to non-financial companies have moved broadly in line with Central Bank rates ...

The majority of new króna-denominated loans to non-financial companies are non-indexed variable-rate loans. Since the beginning of 2015, for instance, these have accounted for some 85% of the three large commercial banks' total lending to such companies (Table 1). As Charts 4 and 6 show, interest rates on these loans have fallen in line with the Bank's key rate. A further breakdown by maturity and loan amount shows that the average interest rate on all categories

Table 1 New króna-denominated loans from the three large commercial banks to non-financial companies (b.kr.)

Year	*Non-indexed*	*Indexed*	*Total*	*Variable-rate*	*Fixed-rate*	*Total*
2015	460.2	86.8	547.0	495.8	51.2	547.0
2016	461.0	76.4	537.4	515.7	21.7	537.4
2017	590.2	93.3	683.6	657.8	25.7	683.6
Total	1,511.4	256.5	1,768.0	1,669.4	98.6	1,768.0

Source: Central Bank of Iceland.

of non-indexed corporate loans has fallen in line with Central Bank rates, from one-year loans of less than 40 m.kr. to ten-year loans of more than 160 m.kr. On the other hand, there has been little change in rates on indexed corporate loans, but these loans are rare: since the beginning of 2015, for instance, indexed loans have accounted for only 15% of total corporate lending by the three large banks, and only 38% of those loans bear fixed interest. The share of other types of króna-denominated loans has also been negligible.

... and firms' access to credit appears normal

As is discussed in Chapter III, credit system lending to businesses has increased markedly in the recent term. In nominal terms, loans grew by 3.9% year-on-year in 2016 and 6.1% in 2017, after a continuous contraction between 2010 and 2015. In Q1/2018, nominal year-on-year growth measured 9.7%, the strongest in roughly a decade. In the recent past, credit growth has been concentrated in loans to companies in the services sector, particularly real estate firms, construction firms, and tourism-related companies, reflecting the strong investment activity in those sectors. Corporate investment has also been growing rapidly in the past few years (see Chapter IV). Based on these developments and given the overall demand pressures in the economy, it is difficult to argue that the adoption of the SRR has led to overly tight monetary policy or hindered domestic firms' access to credit.

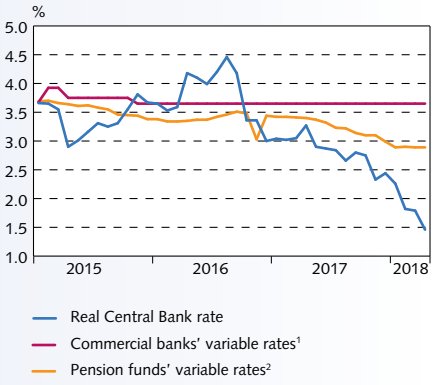
Corporate bond yields are broadly unchanged, however

The corporate bond market is very thin compared with the markets for Treasury bonds and the commercial banks' covered bonds, and most of the bonds are indexed to inflation. Corporate bond turnover has amounted to just about 1% of Treasury and HFF bond turnover in the recent term. Domestic firms' marketable bonds accounted for about 15% of total corporate debt at the end of 2017, and a large proportion of them were issued by Government-owned companies (Chart 7). Furthermore, there are few bonds with market making, which tends to hinder price formation in the market.

Among corporate bonds, turnover is greatest with real estate company bonds, whereas trading of other bonds is extremely sparse, and yields have been broadly unchanged. Real estate company bond yields have not moved in line with Central Bank rate cuts as comparable indexed Treasury and HFF bonds or commercial banks' covered bonds have. However, yields on real estate company bonds fell starting in H2/2017, albeit not as much as yields on other bonds (Chart 8). In addition to the inactivity in the market, there are other factors that complicate comparison. Unlike Treasury and HFF bonds, most real estate company bonds are redeemable, and multiple issuance of the same bonds when the length of time until they can be settled at par varies makes it difficult to compare them. In addition, market agents could consider counterparty risk elevated because house price inflation has slowed down, causing the companies' share prices to fall.

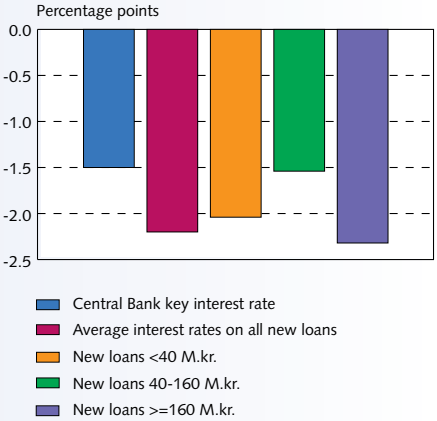
The characteristics of the corporate bond market, its limited size, and the homogeneity of the companies concerned make it difficult to assess the effectiveness of monetary policy transmission to corporate bond rates; however, it is clear that the transmission mechanism is less effective than for other bonds. Even so, this situation has changed little since the SRR was introduced, and the market has been relatively inactive for a long time, as a large proportion of domestic firms seek external financing through direct borrowing rather than through issuing bonds in the market.

Chart 5
Real Central Bank interest rate and indexed mortgage rates
January 2015 - April 2018



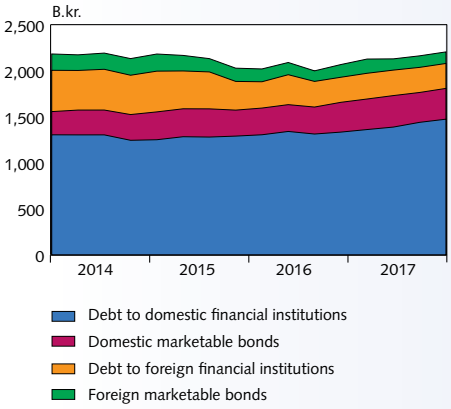
1. Simple average of the three large commercial banks' mortgage rates.
2. Simple average of the mortgage rates of Almenni Pension Fund, Frjálsi Pension Fund, Gildi Pension Fund, Lífeyrissjóður verslunarmanna, Lífsverk, The Pension Fund (Söfnunarsjóður lífeyrisréttinda).
Source: Central Bank of Iceland.

Chart 6
Impact of changes in Central Bank interest rates on corporate lending rates[1]
July 2016 - December 2017



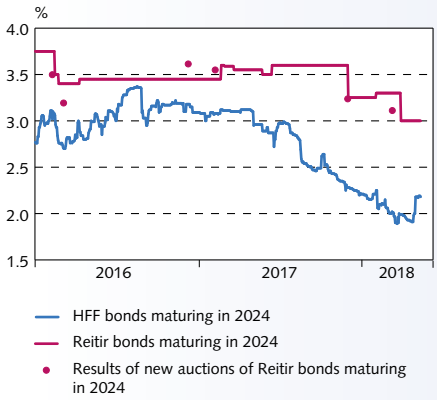
1. Weighted average interest rate on the three large commercial banks' non-indexed variable-rate loans to non-financial companies. The interest rates are weighted to reflect the principal amount of the loans.
Source: Central Bank of Iceland.

Chart 7
Non-financial corporate debt
Q1/2014 - Q4/2017



Source: Central Bank of Iceland.

Chart 8
Yields on indexed bonds issued by the Housing Financing Fund and Reitir Real Estate
1 January 2015 - 11 May 2018



Sources: Kodiak Pro, Reitir fasteignafélag hf., Central Bank of Iceland.

Summary

The introduction of the SRR in summer 2016 appears to have delivered the intended results and strengthened the transmission of changes in Central Bank rates to rates on Treasury bonds and the commercial banks' covered bonds, unlike the situation in 2015. Furthermore, the Bank's interest rate changes have been transmitted normally to most of the loan forms available to households and businesses since the SRR was activated. The effectiveness of the transmission mechanism varies by loan form, however, as before. As can be expected, transmission is strongest to non-indexed variable-rate loans to households and businesses, which is the most common type of corporate loan and is growing in popularity among households as well. Transmission to the commercial banks' indexed lending rates has been weaker.

It is difficult to find tenable grounds for the argument that the SRR has in some way affected these developments, as the effectiveness of monetary policy transmission to these loan forms has remained broadly unchanged since the SRR was activated. Changes in the Central Bank's interest rates have generally had less impact on indexed rates than on non-indexed rates, irrespective of the SRR. Furthermore, it is difficult to link developments in interest rate spreads on corporate bonds — i.e., interest rates on corporate bonds relative to Treasury bond rates — to the introduction of the SRR, as the SRR should not change the relative rates on the bonds falling within its scope, particularly if there was no history of inflows into these bonds beforehand. In fact, one of the main reasons the SRR applies to inflows into all electronically registered bonds is to minimise possible distortion in pricing of different types of bonds. There are probably other, more convincing explanations for developments in interest rate spreads on corporate bonds, as is discussed above. Finally, it is difficult to find data to support the assertion that the SRR adversely affects residents' access to credit financing, as growth in lending to households and business has been gaining momentum in the recent term and is at its strongest in a decade. By the same token, consumption growth has been strong, and business investment has grown rapidly in the recent past and appears likely to continue growing this year.