

ARTICLE – The effects of monetary policy on financial variables

Since February 2015, the Riksbank has gradually cut the repo rate from zero down to –0.50 per cent, carried out extensive purchases of government bonds and furthermore had special contingency plans to intervene on the foreign exchange market. In an historical perspective, this represents unusual monetary policy. The monetary policy has affected the overall financial conditions in an expansionary direction, with a significant impact on short- and long-term interest rates as well as on the krona exchange rate.

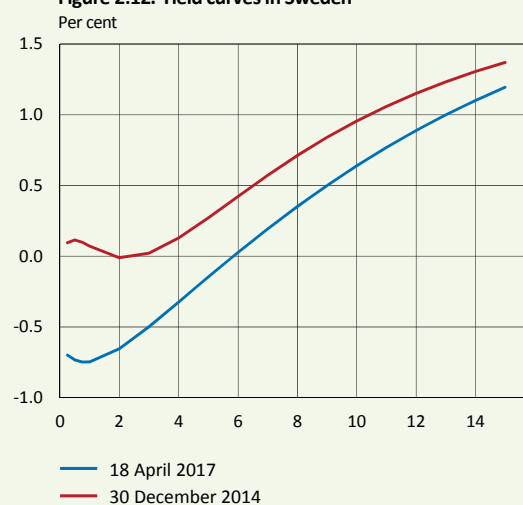
Since the beginning of 2015, the Riksbank has gradually cut its repo rate from zero to –0.5 per cent and announced purchases of increasingly large volumes of government bonds, amounting to a total of SEK 290 billion at the end of 2017. An overall analysis shows that the monetary policy conducted over the last two years has had a clear impact on many financial variables. Furthermore, the monetary policy has also had a positive effect on economic development and inflation. So far there do not appear to have been any clearly negative side-effects, see Chapter 1.¹⁶

Market rates have fallen

The cuts in the repo rate to below zero since the beginning of 2015 have had a clear impact on short-term market rates, roughly in the same way as when the repo rate is positive.¹⁷ Short-term market rates have in total fallen by 70–80 basis points (hundredths of percentage points) compared with the repo rate, which has been cut by 50 basis points (see Figure 2:7). Interbank rates and government bond yields for maturities up to five years are now negative.¹⁸

Longer-term government bond yields have also fallen somewhat since the beginning of 2015 when the Riksbank started buying government bonds. For example, the yield on a 10-year nominal government bond was 30–40 basis points lower at the end of 2016/beginning of 2017 than two years earlier. So far in 2017, however, they have risen marginally, which is in line with international developments. All in all, both short-term and long-term government securities yields have fallen significantly since the repo rate was cut below zero and the Riksbank began buying government bonds (see Figure 2:12).

Figure 2:12. Yield curves in Sweden



Note. Horizontal axis shows maturities in years. Zero coupon yields interpolated from treasury bills and government bonds using the Nelson-Siegel method.

Source: The Riksbank

The yield on real government bonds, which the Riksbank has been buying since April 2016, has fallen by one percentage point since the Riksbank began its purchases.

A common method of measuring the effects on financial variables is to look at what happens when monetary policy decisions are announced.¹⁹ A decision that is more expansionary than expected should lead to short-term and long-term interest rates falling and to the krona exchange rate weakening. The total effects are probably greater than the measured announcement effects as financial variables can have been affected both prior to and some time after the decisions.²⁰ If market participants have fully or partially

¹⁶ A longer article on the effects of the Riksbank's monetary policy including a discussion on the side effects can also be found in the Account of Monetary Policy, 2016.

¹⁷ There are occasions when the market effects have been the reverse, for instance, in April 2015 when rates rose and the krona strengthened after the Riksbank announced it would extend the government bond purchases. This was probably due to market participants having expected an even more expansionary policy than the one announced.

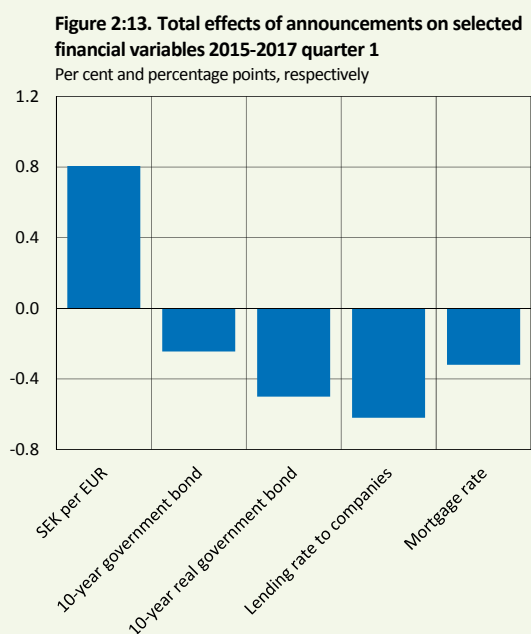
¹⁸ The Riksbank's purchase of government bonds has also contributed to a fall in short-term government bond rates, see also "Government bond purchases push down long and short-term rates" in Monetary Policy Report October 2016.

¹⁹ Here, the effects of the change are measured during the day on which the decisions have been announced. Measuring announcement effects is a common method of measuring how central banks' asset purchases have affected financial prices, see for instance Gagnon J., Raskin M., Remache J. and Sack B. (2011), "The Financial markets Effects of the Federal reserve's Large Scale Asset Purchases", *International Journal of Central Banking* Vol. 7 No. 1. The method is used as there is only limited experience of the effects of these asset purchases.

²⁰ To discuss the effectiveness of bond purchases, it may also be important to calculate measures of how great the effect on interest rates is for a certain volume of unexpected purchases. See De Rezende, R. B., Kjellberg, D. and Tysklind, O., "Effects of the Riksbank's government bond purchases on financial prices", *Economic Commentary* no. 13, 2015.

predicted the measures, for example, then this is reflected in the prices even before the announcement. However, as this can occur gradually over a longer period, it is considered much more difficult to identify the effects and link them to the Riksbank's purchases.²¹

The total effect of the announcements has been that the yield on 10-year nominal bonds has fallen by 25 basis points (see Figure 2:13). For inflation-indexed government bonds, the fall has been roughly twice as large, around 50 basis points. However, this measures the effects to the extent that the announcements have been unexpected.



Note. The bars show the total effect of the announcements, measured as the sum of the changes in the respective variables on the date of the announcement. For lending rates to households and companies the effect is calculated as a change between January 2015 and December 2016.

Source: The Riksbank

Lower interest rates for households and companies

Interest rates charged to households and companies have been affected in a somewhat different way than before during the period with a negative repo rate. Deposit rates normally fall when the repo rate is cut. However, the banks have chosen not to introduce negative deposit rates for most of their customers, which means that they have remained on average close to zero. (see Figure 2:14).²² The fact that deposit rates, at the current repo-rate level, did not in general become negative was also expected.

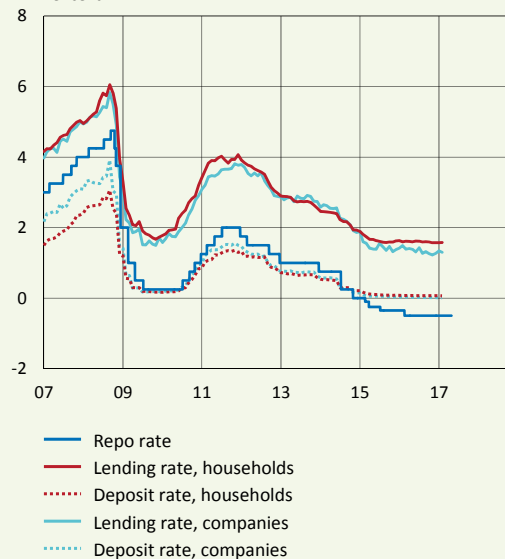
Lending rates to companies have fallen more than the repo rate since the beginning of 2015, while lending rates to

households fell primarily at the beginning of 2015 and have since then remained more or less unchanged. The fact that the downturn has slowed down is partly due to the banks' funding costs not falling as much as the repo rate, which in turn is partly due to them not applying negative deposit rates for households and most companies.

The krona has weakened

The monetary policy has also affected the krona exchange rate. The effect of the announcements has been different with regard to the exchange rate against the euro and against the US dollar. At the time of the announcements, the krona weakened in total by almost 1 per cent against the euro.²³ For the krona, too, however the total effect of the monetary policy is greater than that which is captured by the changes in connection with the announcements. The krona would probably have been considerably stronger today if the Riksbank had not conducted such an expansionary monetary policy. At the end of 2016, the krona was significantly weaker against the US dollar and slightly weaker against the euro, than two years earlier. In 2017, the krona has basically remained unchanged against the euro, while it has strengthened slightly against the dollar.

Figure 2:14. Repo rate together with the deposit and lending rate to households and companies, new contracts
Per cent



Note. MFIs' average deposit and lending rates for households and companies.

Sources: Statistics Sweden and the Riksbank

²¹ The fact that liquidity in the economy increases when the Riksbank buys government bonds may also have an expansionary monetary policy effect. See Alsterlind J., Erikson, H., Sandström, M. and Vestin, D. (2015), "How can government bond purchases make monetary policy more expansionary?", Economic Commentary, No.12, 2015.

²² Most financial undertaking corporations and some non-financial corporations and municipalities are facing negative deposit rates. For technical reasons, however, the negative deposit rate is usually reported as a charge and is therefore not always visible in the figures from Statistics Sweden.

²³ That the effects differ between the currencies is due to other factors than monetary policy affecting exchange rate fluctuations.