



Economic Commentary

Pass-through of negative policy rates

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Summary

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We examine data on the Swedish policy rate and a wide range of interest rates paid in a period spanning policy rate cuts into negative territory and hikes from negative territory. The data shows that the pass-through from the policy rate has been close to one-to-one.

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How strong is the pass-through from the policy rate?

During the last couple of years, several central banks have lowered their policy rates below zero. Overall, the measures seem to have been effective in reducing broader measures of interest rates in the economy.² In the specific case of Sweden, however, the extent to which the negative interest rate that the Riksbank's counterparties meet on central bank reserves has been passed through to other rates has been debated. Eggertsson et al (2019) claimed that, when the policy rate turned sufficiently negative, pass-through to lending rates collapsed. Indeed, based on data on listed mortgage rates, Eggertsson et al. (2019) even found that there was an episode in Sweden with a negative pass-through, i.e. lending rates *increased* when the policy rate was *cut*. In Erikson and Vestin (2019), we argued that, when examining actual lending rates from monetary financial institutions (MFIs), the pass-through had been rather good although individual lending categories exhibited some variation and the exact timing of changes of such rates may occur with a short lead or lag with respect to the change in the policy rate.

The data in Eggertsson et al. (2019) and Erikson and Vestin (2019) consisted of lending rates before and during the period that the policy rate was cut into negative territory down to -0.50 percent. However, between 2019 and 2020, the Riksbank raised the policy rate back to zero and has kept it at zero throughout the Covid crisis.³ Hence, we not only have more observations at hand now but also observations where the central bank increased the policy rate from negative levels. This allows us to, more accurately, assess whether there was a collapse in the pass-through to lending rates and whether or not the pass-through, as suggested in Eggertsson et al. (2019) even was negative at some point. If there was an episode where lending rates increased in response to policy rate cuts, we should expect lower lending rates in the wake of reversing policy rate hikes. Thus, the motive for this article is to provide an updated assessment of the pass-through during a period with negative policy rates, in the light of these new observations.

In Erikson and Vestin (2019), we examined disaggregated data from monetary financial institutions, e.g. lending rates to households for housing purposes or for consumption and lending rates to non-financial companies.

In this commentary, we illustrate lending rates with an aggregate volume-weighted interest rate paid by firms and households, regardless of the purpose of the loan. This aggregated series is published by Statistics Sweden and based on the same data as the disaggregated series. Thus, for the purpose of this brief update, we concluded that this aggregated interest rate will suffice. Since the underlying data is the same, we should reach the same conclusion when we look at this aggregated series as if we look

² For a recent summary, see Tenreyro (2021).

³ The Riksbank hiked the policy rate from -0.50 to -0.25 percent in January 2019 and from -0.25 to 0.00 percent in January 2020. The two hikes were announced in December 2018 and December 2019 respectively.

at disaggregated data, although we will now not be able to observe the idiosyncratic variation between the policy rate and the individual series.

Agents can borrow by issuing a financial market security or by borrowing from a monetary financial institution. We will offer evidence on the pass-through from the policy rate to interest rates from each of these two funding sources. We will show that interest rates facing a wide set of agents seeking to borrow money seem to track the policy rate well, even at negative levels of the policy rate. Consequently, we do not find any evidence of an episode with a negative pass-through.

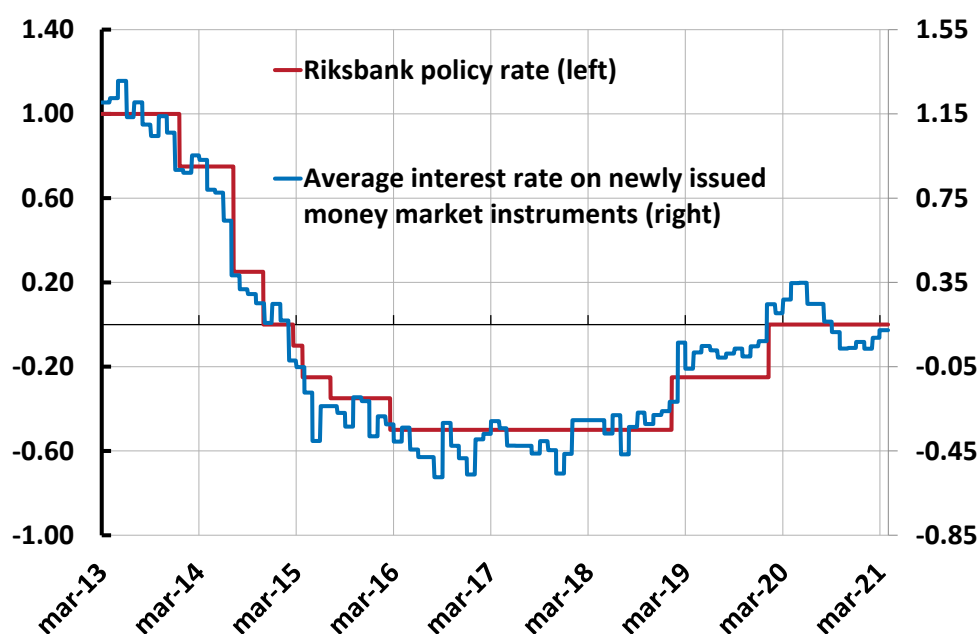
Pass-through to money-market rates

Since 2013, Statistics Sweden has published data on actual interest rates that institutions pay when borrowing money by issuing securities directly in financial markets.⁴ Figure 1 below plots the average interest rate on newly issued money market instruments, denominated in Swedish currency, for an array of non-financial issuing institutions.⁵ Although the data sample is short, it clearly indicates that interest rates have followed the policy rate well, even at negative policy rates.

⁴ This provides a more accurate measure of interest rate expenses compared to the listed indicative prices, provided by financial intermediaries, that were used in Erikson and Vestin (2019).

⁵ Money-market instruments here refer to instruments with a remaining maturity of less than 12 months. In general, these are zero-coupon securities. To be precise, Figure 1 plots the average, in market terminology, ‘yield to maturity’ of money market instruments issued in a specific month. In this section, we use ‘interest rate’ as a synonym for ‘yield to maturity’.

Figure 1. Money-market rates co-move closely with the policy rate⁶



Source: Statistics Sweden, Macrobond.

Note. The scale steps on the left and right hand axis are the same.

The issued securities in Figure 1 refer to a volume-weighted average of securities, denominated in Swedish currency, with an original time to maturity less than one year, issued by non-financial companies, municipalities and the government.

The simple correlation between market rates and the policy rate is striking with market rates tracking movements in the policy rate very closely, both on the journey down to negative rates and on the way back up to zero percent. However, for Swedish non-financial companies, total market-based funding constitutes less than 25 percent of the total funding denominated in the Swedish currency. The corresponding share for households is close to zero. Instead, the lion's share of the funding in local currency for non-financial companies and households comes from monetary financial institutions. Thus, how lending rates from these institutions move with the policy rate is decisive for the overall pass-through and we now proceed to examine this evidence.

Pass-through to MFI lending rates

Statistics Sweden collects data on actual lending rates for new agreements from monetary financial institutions, MFI, a set of financial institutions including banks and

⁶ The figures in this Economic Commentary plot the data at its published frequency, i.e. the policy rate at a daily frequency and money market rates and lending rates at a monthly frequency.

other credit-giving institutions. The data can be partitioned into the three groups described in Table 1.

Table 1. New agreements partitioned into sub groups

Klicka här för att ange enhet/underrubrik.

Group	Fixation period	Description	Average volume weight
A	>3 months	This group consists of e.g. household mortgages with fixed interest rates	15%
B	≤3 months	This group consists of e.g. household mortgages, car loans and other private loans with a repayment schedule and with a variable interest linked to a reference rate	32%
C	Not specified	This group consists of a wide set of loans, e.g. credit card debt and other revolving loans, and for households, consumption loans with a short repayment/maturity period. The fixation period of these loans is, in general, very short, normally shorter than 3 months. ⁷	53%

Note. Volume weights are the arithmetic average weight between June 2010 and March 2021.

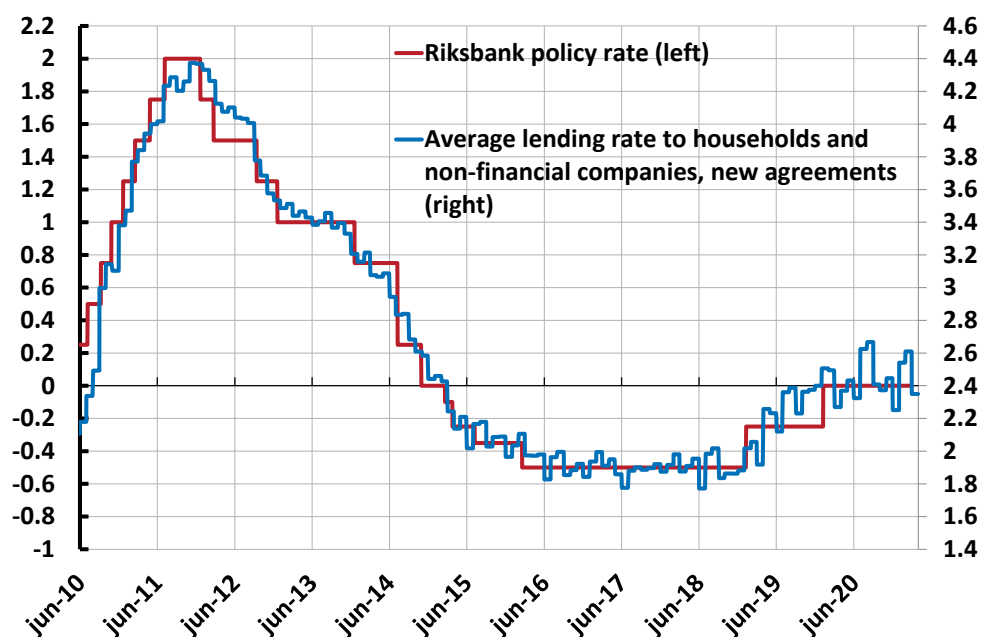
Source: Statistics Sweden, the Riksbank.

On a monthly basis, Statistics Sweden publishes actual volume-weighted lending rates for new agreements aggregated over all households as well as non-financial companies.⁸ Since the fixation period is short in both group B and group C, these lending rates should be comparable to the policy rate. Statistics Sweden provides a lending rate series for group B. However, group B is a relatively narrow subset of new agreements and excludes important loans, e.g. the consumption loans included in group C. Statistics Sweden does not publish lending rates for group C loans but for a grand total group called “all accounts”, i.e. an aggregate of all three groups A, B and C. Since the share of new agreements with a fixation period over 3 months is limited, the average fixation period for the “all account” group is also relatively short and thus, we believe, comparable to the policy rate. Since we do not want to exclude large group of loans, we will use the grand total “all accounts” group. This series is plotted in Figure 2 below. In the appendix, we will show how the more narrow category, up to 3 months, has developed over time.

⁷ For these, in general, short loans, the total outstanding amount is considered as a new agreement.

⁸ The lending rate data can be found in table 8.3.1 in the Financial Market Statistics from Statistics Sweden.

Figure 2. Average lending rates track the policy rate, more or less, one-to-one



Source: Statistics Sweden, Macrobond.

Note. The scale steps on the left and right hand axis are the same.

A visual inspection of the data reveals a close link between the policy rate and the average lending rate facing households and non-financial companies. This link is also evident in periods of policy rate cuts and policy rate hikes in negative territory. If we scrutinize the data in Figure 2, we find that average lending rates to households and non-financial companies were slightly more than 50 basis points lower during the period when the policy rate was -0.50 percent compared to the short period from October 2014 to February 2015, when the policy rate was zero. After the policy rate was raised to zero, lending rates followed suit and have, on average, been approximately 50 basis points higher compared to the period when the policy rate was -0.50 percent. Thus, during the period with a negative policy rate, pass-through to lending rates was, more or less, one-to-one.

This result is somewhat surprising, since several events took place during the examined period that has the potential to influence interest rate levels. New regulatory measures have been added that could affect the cost financial institutions face when granting loans.⁹ Furthermore, the Riksbank has made adjustments to the monetary policy steering-system that could affect short-term money market rates.¹⁰ Finally,

⁹ For example, new liquidity regulations have been introduced and a floor for risk-weights applied to mortgages.

¹⁰ Swedish banks can choose to hold central bank reserves in the form of Riksbank certificates at an interest rate corresponding to the policy rate or in the form of a deposit at an account at the Riksbank at an interest rate corresponding to the policy rate minus 10 bp. In 2020, the Riksbank restricted the volume Riksbank

new players have entered the lending market which have affected the degree of competition and have also lead Statistics Sweden to expand the number of reporting financial institutions.¹¹ In light of these structural changes, we should take care not to over-interpret the pass-through of individual policy rate changes. It is hard to establish exactly how strong the pass-through has been, in particular during the period with negative interest rates, but our interpretation of Figure 2 is that it is reasonable to assume that the policy rate continues to be an effective monetary policy tool also when the policy rate is slightly negative.

Conclusions

In this commentary, we have examined data on the Swedish policy rate and a wide range of interest rates paid, in a period spanning both policy rate cuts into negative territory and hikes from negative territory. The data shows a close correspondence between the policy rate and these interest rates, e.g. between the policy rate and lending rates to households and non-financial companies, even at negative levels of the policy rate. Also, regardless of the level of the policy rate, policy rate cuts seem to be associated with lower lending rates and policy rate hikes with higher lending rates. Hence, from the perspective of monetary policy transmission, we find that the policy rate has been effective in steering lending rates, even at mildly negative levels.

certificates offered and thus, the average interest rate offered on central bank reserves are now a few basis points below the policy rate.

¹¹ During the last few years, new financial institutions have entered the market, not least in the segment that provides consumption loans, decreasing the market shares of traditional banks. To reflect this development, Statistics Sweden expanded the number of reporting institutions in April 2019. This may have caused a break in the series.

References

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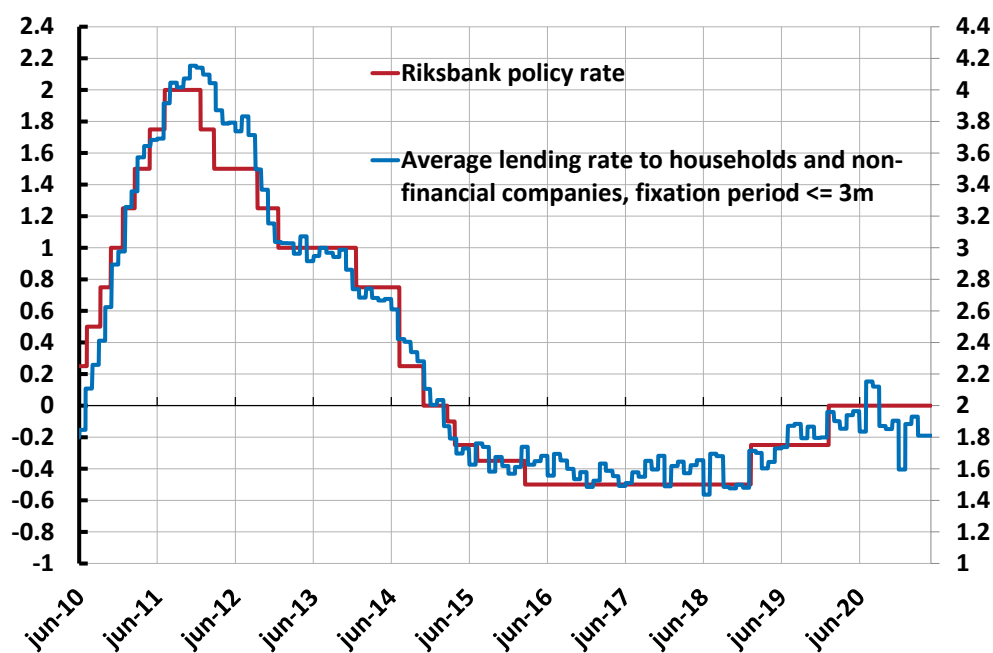
APPENDIX – An alternative lending rate series

In this appendix, we will illustrate the pass-through from the policy rate to an alternative MFI lending rate series.

Lending rates with a fixation period up to 3 months

In this Economic Commentary, we have illustrated the pass-through from the policy rate to MFI lending rates to households and companies. We chose the widest possible measure to include all sorts of loans, i.e. the “all accounts” lending rate series. Below is a graph plotting an alternative, narrower, measure consisting of new agreements with a fixation period up to 3 months, i.e. group B in Table 1.

Figure A. Policy rate versus the lending rate with a fixation up to 3 months



Source: Statistics Sweden, Macrobond.

Note. The scale steps on the left and right hand axis are the same.



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