

ARTICLE - Effects of the asset purchases on the Riksbank's financial result

The Riksbank has purchased large amounts of assets since 2015, for partly different purposes. These purchases were discontinued in 2022. As inflation rose sharply in 2022, the Riksbank and other central banks had to raise the policy rate substantially and quickly. The rising interest rates caused the value of the assets to fall. The Riksbank reported a large financial loss for 2022, and equity will be negative after the profit appropriation in spring 2023. This article highlights the expected impact of the asset purchases on the result and how that impact is distributed over different time periods and asset classes.

The socio-economic benefits of the purchases, in terms of improved target attainment, are estimated to be considerable. At the same time, it is important to be aware of the negative consequences for the Riksbank's financial result. Even if the ability to conduct monetary policy in the short term is not affected by large losses and negative equity, problems may arise in the longer term. If the Riksbank's financial position becomes too weak, financial independence may be threatened, which in turn may weaken confidence in the inflation target and monetary policy.

The Riksbank's asset purchases 2015-2022 – safeguarding the inflation target and managing the effects of the pandemic

The purpose of this article is to explain how the Riksbank's asset purchases have resulted in financial losses. The reasons for the purchases are therefore only briefly described.⁵⁴

In the spring of 2015, inflation fell clearly below the Riksbank's target, at the same time as inflation expectations also fell. The Riksbank's policy rate was already at zero per cent, which was deemed to be close to the lower bound. At the same time, monetary policy needed to be made more expansionary to ensure that inflation rose towards 2 per cent and that the credibility of the inflation target was maintained. The Riksbank implemented a combination of measures. First, the policy rate was cut to negative levels, at the lowest to -0.5 per cent, and second, purchases of government bonds were initiated. The purchases were gradually increased until 2017, and the total holdings amounted to just under SEK 300 billion (see Figure 12 in Chapter 2).

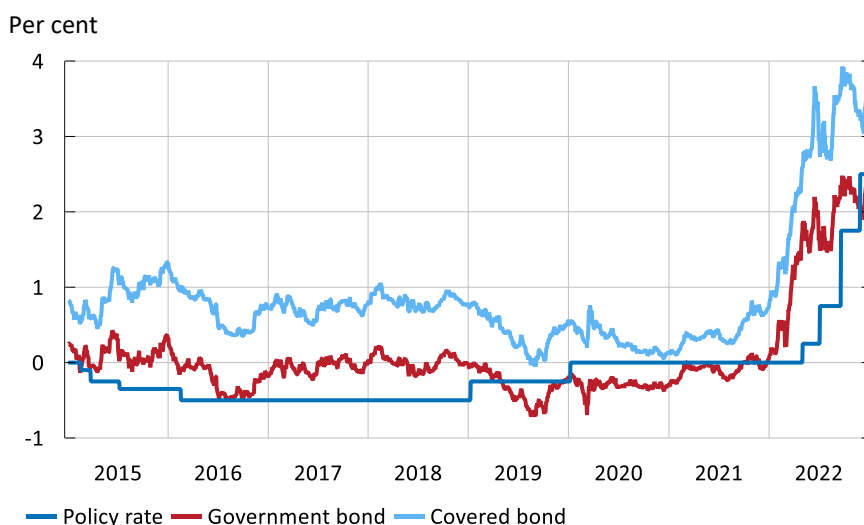
⁵⁴ See B. Andersson, M. Beechey Österholm and P. Gustafsson (2022), "The Riksbank's asset purchases 2015-2022", *Riksbank Study* no. 2, Sveriges Riksbank, for a detailed account.

After 2017, the level of holdings was maintained through purchases that compensated for bond maturities, while the policy rate was raised in two steps to zero per cent in December 2018 and 2019, respectively.

The coronavirus pandemic in spring 2020, in addition to causing widespread human suffering, had a major negative impact on economies around the world. Initially, uncertainty increased dramatically in the financial markets. Interest rate markets were significantly affected. The higher the risk the assets had, the more yields rose. The Riksbank did not lower the policy rate, which was instead kept at zero per cent, as it was not considered worthwhile to stimulate demand in an economy that was largely closed. However, one of the problems that arose was that interest rates charged to households and businesses risked rising, with a further tightening effect on an economy that was already in free fall. Among the measures taken by the Riksbank were significant asset purchases. Unlike in the past, the purchases covered a broader range of interest-bearing securities, with an emphasis on covered bonds. However, corporate bonds, municipal bonds and additional purchases of government bonds were also included (see Figure 12 in Chapter 2). The purchases were expanded and extended in a number of stages. Overall, the Riksbank's purchases to manage the effects of the pandemic were considerably more extensive than the purchases in 2015-2017 and resulted in a total increase in holdings of around SEK 700 billion over the period 2020-2021.

Rapid rise in inflation and large policy rate hikes in 2022

Inflation rose rapidly in 2022, to the highest levels in over 30 years. The Riksbank, like most other central banks, has therefore raised the policy rate fairly substantially and rapidly, and general interest rates have followed suit. This means that both the Riksbank's policy rate and the yields on the bonds it has bought have risen sharply (see Figure 32).

Figure 32. Interest rate developments in Sweden

Note. Bond rates refer to estimated zero-coupon rates with a maturity of 5 years.

Sources: Macrobond and the Riksbank.

Why does the Riksbank's financial result deteriorate when interest rates rise?

As early as at the time of the first phase of asset purchases in 2015, the Riksbank recognised that the risks to earnings were increasing and that losses could occur in the future.⁵⁵ But that interest rates would rise as much as they did in 2022 came as a total surprise. This is illustrated not least by the fact that the Riksbank's forecast as late as February 2022 indicated that the policy rate would not start to rise from zero until the second half of 2024.⁵⁶ The fact that interest rates rose so much also means that the Riksbank is making large losses on its asset purchases.⁵⁷ Why is this?

The bond purchases were financed with newly created money in the form of deposits in the Riksbank, at the policy rate. If the Riksbank holds the bonds until they mature, the return on the investment is the difference between the bond rate at the time of purchase and the average policy rate over the life of the bonds. The Riksbank has thus "borrowed short and invested long". This means that the Riksbank has taken an

⁵⁵ See speech by M. Flodén (2016), "The Riksbank's bond purchases affect the state's finances", 9 November 2016, Sveriges Riksbank. Even before the asset purchases were launched, attention was also drawn to the risks to the Riksbank's result due to a larger balance sheet, mainly linked to the expansion of the foreign exchange reserve following the financial crisis; see speech by K. af Jochnick (2015), "Does the Riksbank have to make a profit?", 23 January 2015, Sveriges Riksbank.

⁵⁶ See *Monetary Policy Report*, February 2022, Sveriges Riksbank. The report also states that the upper limit of the 90 per cent uncertainty interval for the policy rate in the fourth quarter of 2022 was 1.25 per cent. The outcome was 2 per cent.

⁵⁷ In previous publications, the Riksbank has also described and commented on how rising interest rates negatively affect the result. See, for example, Sveriges Riksbank Annual Report 2022 and D. Kjellberg and M. Åhl (2022), "The Riksbank's financial result and capital are affected by higher interest rates", *Economic Commentary* No 8, Sveriges Riksbank.

interest rate risk: while the long-term interest rate was 'locked in' at the level at the time of purchase, the future policy rate during the life of the bond was unknown.

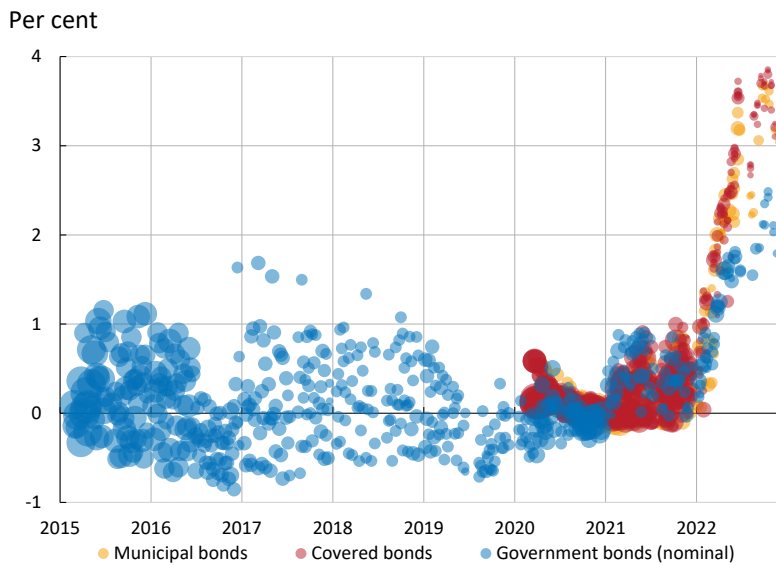
A simple example shows how losses can occur:

- The Riksbank borrows 1,000 billion at a variable interest rate (the policy rate) and invests the money in bonds at zero interest rate with a 5-year maturity.
- The policy rate is zero percent at the time of purchase.
- Thereafter, the policy rate rises over the life of the bond.
- If the policy rate averages 1 per cent, the total interest income will be SEK zero, while the total interest cost will be SEK 50 billion.
- In this way, the Riksbank loses an average of SEK 10 billion per year and a total of SEK 50 billion over a five-year period.

So how has this worked in practice? One way to understand how the Riksbank's performance has been affected is to translate the simple example into the concrete purchases that the Riksbank has made.

The Riksbank has built up a portfolio of Swedish securities that initially consisted exclusively of government bonds, but which was later expanded to include mainly covered bonds, but also municipal bonds and, to a small extent, corporate bonds. Figure 33 shows the purchases in three dimensions: the size of the purchases, illustrated by the size of the balls, the interest rate at which the purchases were made, illustrated by the position of the balls on the y-axis, and finally the timing of the purchases, illustrated by the position of the balls on the x-axis.⁵⁸ It can be seen that most of the purchases of government bonds took place in 2015–2016 at a rate close to zero per cent on average. It also shows that most purchases of covered bonds and municipal bonds took place in 2020 and 2021 at an interest rate around 0.5 per cent on average.

⁵⁸ However, the figure does not show the maturity of the bonds.

Figure 33. Yield on the Riksbank's bond purchases

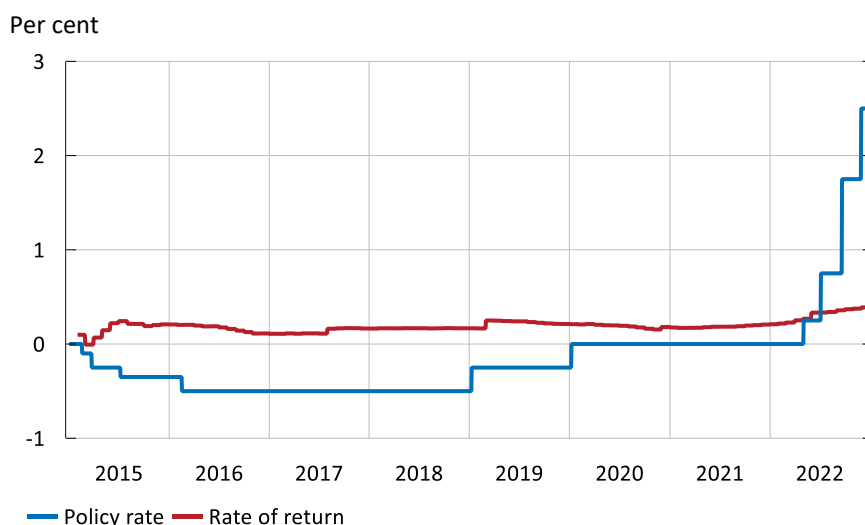
Note. The ball size is proportional to the face value of the purchase. The figure shows the fixed rate given if the bond is held to maturity.

Source: The Riksbank.

Figure 34 shows the aggregate rate of return on the Riksbank's holdings of Swedish securities, together with the policy rate at which the purchases were financed.⁵⁹ It shows that from the beginning of 2015 until the beginning of 2022, the rate of return slightly exceeded the policy rate and was between 0 and 0.5 per cent. During the course of 2022, the policy rate was raised sharply from 0 to 2.5 per cent.

The Riksbank's net interest income, i.e. the difference between the rate of return and the financing rate, was thus slightly above zero until the middle of 2022, but quickly turned very negative during the remainder of the year. Other central banks, such as the Federal Reserve, report the effect on earnings in precisely this way, i.e. as a net interest income year on year. If the Riksbank were to do the same, it would mean small gains on asset purchases in 2015-2021 and a fairly large loss in 2022. It would thus work much like the simple example described earlier. The final impact on the result will depend on how the difference between the rate of return and the policy rate develops in the future.

⁵⁹ The rate of return is the rate that the holding will yield if the bonds are held to maturity.

Figure 34. Average annual return on bond holdings if held to maturity and current financing rate (Riksbank's policy rate)

Note. The Riksbank's policy rate (blue line) can be seen as the current percentage financing rate for the bond holding (the Riksbank's interest expenditure for deposits of the reserves created at the time of the bond purchases). The rate of return (red line) refers to the holding of bonds in kronor (fixed coupons only) and shows how the average annual return on the holding would be from the current date until all bonds have expired. The changes in this average were due to purchases and maturities. If the blue line is above the red line at a point in time, the current financing rate exceeds the return we can expect from the bond holding if the Riksbank holds it to maturity.

Source: The Riksbank.

Depreciation in value affects the Riksbank's profit

The Riksbank uses accounting principles that follow the guidelines of the European System of Central Banks (ESCB). These guidelines provide different ways of reporting the results, but the method chosen by the Riksbank is described here.⁶⁰ This method means that the current market value of the bond holdings can have a significant impact on the Riksbank's results. And the market value of a bond falls when interest rates rise. This is how it works: the Riksbank's profit and loss account does not include unrealised gains but does include unrealised losses. When determining the result, assets are marked to market at the end of an accounting year. If the market value of a bond purchased by the Riksbank exceeds the purchase price and has therefore increased in value, this is not included in the profit for the year but is added to a so-called value adjustment account on the liabilities side of the balance sheet. However, if the market value is instead lower than the purchase price, a write-down is made to the acquisition cost. The write-down is charged to the result for the year, even though the Riksbank still owns the bond and no cash flow has been generated nor any loss

⁶⁰ See the Guideline of the ECB on the Legal Framework for Accounting and Financial Reporting in the ESCB, (EU) 2016/2249 (ECB/2016/34) amended according to (EU) 2019/2217 (ECB/2019/34) and (EU) 2021/2041 (ECB/2021/51).

realised. This asymmetric treatment of the impact of changes in market value on the reported result follows a kind of precautionary principle.⁶¹

It is important to emphasise that the overall effect on the result using the Riksbank's method is the same as with the second method above, where net interest income is recorded year by year. A write-down in the value of the bonds can be likened to the Riksbank first selling the bonds and then buying them back at the new lower market value. This entails two things. First, there is a loss on the sale, which is charged to the profit and loss account. Secondly, the "repurchases" are made at a higher rate. The future interest income recognised will therefore be higher and will improve the results in the following years, just enough to compensate for the loss in value associated with the sale. But in the case of the Riksbank, the losses are concentrated in the period when interest rates are rising and the value of the bonds is falling.

Since interest rates have risen so much in 2022, the value of the bonds in the Riksbank's asset portfolio has fallen sharply. Table 3 shows that the value has fallen by SEK 70 billion. Broken down by asset class, government bonds and covered bonds have contributed most to the decline in value, as they make up the majority of the portfolio.

Table 3. Changes in the Riksbank's monetary policy assets 2022

SEK billion

Asset type	Change in value
Government bonds	-41
Municipal bonds	-7
Covered bonds	-23
Corporate bonds	0
Total	-70

Note. Refers to changes in value during 2022. The calculations refer to fixed-coupon bonds. Rounding off means that the amounts do not sum up.

Source: The Riksbank.

During much of the period when the Riksbank was buying bonds, interest rates were low, while bond yields fell. The acquired assets then increased slightly in value, which resulted in gains on previous bond purchases.⁶² When interest rates began to rise in 2022, large parts of the first phase purchases from 2015 had either already matured or had a short remaining maturity. As mentioned earlier, the scope of the asset purchase programme was also smaller in the first phase from 2015 than in the second phase from 2020. The cumulative financial result over time is therefore not nearly as negative for the purchases in the first phase, which is shown clearly in Table 4.⁶³

⁶¹ See the Riksbank's Annual Report for 2022, section on asset management, for a more precise description.

⁶² However, as mentioned earlier, unrealised gains are not recorded on the Riksbank's profit and loss account.

⁶³ These calculations are based on the cash flows that have so far been generated for each bond purchased, combined with a market valuation at current prices of the bonds that have not yet matured. The calculation can therefore be seen as the final result of the purchases, assuming that the remaining holding is sold today.

Table 4. Financial result of the Riksbank's purchases in the various phases

SEK billion

Phase	Financial result
Phase 1 (decisions 2015–2019)	-9
Phase 2 (decisions March 2020–June 2022)	-51
Total	-59

Note: Refers to total results since the start of the purchases and is based on market valuation on 31 December 2022. The calculations refer to fixed-coupon bonds. Rounding off means that the amounts do not sum up.

Source: The Riksbank.

Since the Riksbank has mostly bought government bonds and covered bonds, it is hardly surprising that it is these purchases that have produced the largest losses (see Table 5). Although the Riksbank has mostly bought covered bonds in recent years, government bond purchases have generated roughly the same amount of losses. This is partly because government bonds have a longer maturity and thus depreciate more when interest rates rise, and partly because the interest rates at which they were purchased were lower (see Figure 33).

Table 5. Financial results of the Riksbank's purchases of different asset types

SEK billion

Asset type	Financial result
Government bonds	-29
Municipal bonds	-7
Covered bonds	-24
Corporate bonds	0
Total	-59

Note. Refers to total results since the start of the purchases and is based on market valuation on 31 December 2022. The calculations refer to fixed-coupon bonds. Rounding off means that the amounts do not sum up.

Source: The Riksbank.

Large financial loss and negative equity in 2022

The total financial result of the Riksbank's asset purchases will not be known until all bonds have matured or been sold. But we do know that rising interest rates in 2022 significantly reduced the value of the Riksbank's bond holdings. Although these are not realised losses, the decrease in value must therefore be recorded as a loss for the Riksbank. Overall, the Riksbank's result for 2022 was SEK -81 billion, which also includes depreciation in value from higher interest rates on the Riksbank's foreign securities in the foreign exchange reserve.⁶⁴ This implicates a negative equity position in 2022 when the profit appropriation is completed.

⁶⁴ This includes a reversal of risk provisions of SEK 5 billion, which improves the result. See "SEK 5 billion reversed from previous risk provisions to profit for 2022", news item on www.riksbank.se on 11 January 2023.

The new Sveriges Riksbank Act that came into force in January 2023 contains rules on the amount of equity capital required. According to the Act, the Riksbank must submit a petition to Parliament if its capital falls below SEK 20 billion. However, unrealised gains booked to revaluation accounts must be taken into account in the amount described in the petition. In this case, any petition will only be made on the basis of the financial statements for the financial year 2023. The fact box below shows the formal procedure in more detail.

The Riksbank's equity capital and possible need for a capital injection

The new Sveriges Riksbank Act, which entered into force on 1 January 2023, sets a target level for the Riksbank's equity of SEK 60 billion. The target level is to be adjusted annually by the CPI. If the Riksbank's equity falls below one-third of the target level, the Riksbank must submit a petition to the Riksdag to restore its equity.

This provision shall apply for the first time for the financial year 2023. A mandatory petition can only become possible in spring 2024 when the annual accounts for 2023 have been adopted. The Executive Board will decide on the petition. The table below gives an overview.

Table 6. Sveriges Riksbank Act and equity (from financial year 2023)

When	What	Who
January (2024–)	Risk provision decision (Chapter 8, Section 11 of the Sveriges Riksbank Act)	The Executive Board
February (2024–)	Annual Report (Chapter 8, Section 4 of the Sveriges Riksbank Act)	The Executive Board
February (2024–)	Decision on appropriation of profit (including profit distribution) (Chapter 8, Section 4 and Sections 12–14 of the Sveriges Riksbank Act)	General Council
February (2024–)	Petition to the Riksdag for the restoration of equity, if equity falls below one third of the target level (Chapter 8, Section 15 of the Sveriges Riksbank Act)	The Executive Board
April/May (2024–)	Adopt the balance sheet and profit and loss account Approve the appropriation of profit (including dividend) (Chapter 8, Section 6 of the Sveriges Riksbank Act)	Sveriges Riksdag

Large socio-economic gains from the asset purchases

The Riksbank's task is not to generate profits. The overriding objective is to maintain permanently low and stable inflation and, without prejudice to this objective, to contribute to a balanced development of output and employment.

The Riksbank's asset purchases from 2015, together with a negative policy rate, are assessed to have contributed to improving the attainment of the target. Inflation rose towards the target and remained very close to 2 percent in 2017 and 2018, while

inflation expectations stabilised around the target (see Figure 1 and Figure 7 in Chapter 1).⁶⁵

The Riksbank's assessment is that the measures taken during the pandemic, of which asset purchases were an essential element, also worked largely as intended.⁶⁶ Interest rates charged to households and businesses were kept low through the acute phase of the pandemic. This, together with the extensive measures taken by the government and Finansinspektionen, kept the credit supply and activity in the economy going, even though the fall in GDP was extremely dramatic. The overall economic policy response helped to avert a financial crisis and the economy recovered strongly from the initial downturn.

The monetary policy toolbox needs to be reviewed continuously

In the short term, central banks generally have no problem conducting monetary policy even if the level of their own capital is low, since they have, at least in theory, unlimited possibilities to create a means of payment in their own currency. But the ability of the central bank to cover its costs in the longer term is important for maintaining financial independence and the credibility of monetary policy.⁶⁷ The Riksbank's ability to generate long-term profits has been weakened by the decline in the use of cash.⁶⁸ The Riksbank therefore has less scope to rebuild its own capital after large losses than many other central banks.

The monetary policy toolbox needs constant review, as evidenced not least by developments since the global financial crisis. One question that is important for the Riksbank to analyse in the future is how different monetary policy tools relate to one another in terms of, on the one hand, the possibilities of achieving the monetary policy objectives and, on the other hand, the risks of the Riksbank's results deteriorating.⁶⁹

⁶⁵ See Account of Monetary Policy for 2017 and 2018, Sveriges Riksbank.

⁶⁶ See, for example, the in-depth article "The coronavirus crisis and the Riksbank's asset purchases" in the *Account of Monetary Policy Report 2021*, Sveriges Riksbank.

⁶⁷ See A. Nordström and A. Vredin (2022), "Does central bank equity matter for monetary policy?", *Staff memo*, December, Sveriges Riksbank.

⁶⁸ See D. Kjellberg and D. Vestin (2019), "The Riksbank's balance sheet and financial independence", *Economic Review*, No. 2, Sveriges Riksbank.

⁶⁹ For a comprehensive review of new monetary policy tools that have figured in the international debate, see, for example, speech by A. Breman (2021), "Monetary policy after corona – we need to think along new lines", 23 February 2021, Sveriges Riksbank.