



Economic Commentary

# The Riksbank's financial result and capital are affected by higher interest rates

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## **Economic Commentaries**

Economic Commentaries are brief analyses of issues that are relevant to the Riksbank. They may be written by individual members of the Executive Board or by staff members at the Riksbank. Employees' Commentaries are approved by their head of department, while Executive Board members are themselves responsible for the content of the Commentaries they write.

# Summary

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The coronavirus pandemic led to the closure of large sections of society, thereby creating a very uncertain future for both households and businesses. In such a situation, central banks and other authorities may have to take over some of the financial risks that the private sector does not wish to, cannot or dares not take, to contribute to the smooth functioning of the economy. Among other things, the Riksbank decided to buy securities in Swedish kronor at large amounts, which contributed to lower long-term interest rates and improved the functioning of various markets. The Riksbank's assessment is that the asset purchases have supported the Swedish economy, maintained confidence in the inflation target and made it easier to access credit and liquidity in uncertain times.

The Executive Board made decisions on asset purchases well aware that this increased the risk of the Riksbank making financial losses in the future. As market rates have risen rapidly recently, the market value of the Riksbank's asset holdings has fallen sharply, and this has also led to substantial value losses so far this year, albeit unrealised.

We note that the recent rapid rise in interest rates means that the Riksbank will probably report a large loss this year. We discuss how different accounting principles affect when these losses will affect the reported result. For the Riksbank, most of the losses at an interest rate rise can be reported this year. We show an example of a scenario in which the Riksbank reports a loss of SEK 65 billion in 2022, which reduces equity to low levels. Although the increase in interest rates has a strong impact on earnings this year, it is likely that the reported results for coming years will again be positive.

The aim of the Riksbank's assets purchases was not to generate profits for the Riksbank. To assess whether the Riksbank's asset purchases have been successful, we need to look at the overall effects on the entire Swedish economy, not just the Riksbank's financial results. By means of a simple calculation example, we note that the positive effects of the asset purchases on public finances alone can be in the order of SEK 70 billion

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extra in income for the government and municipalities. The broad benefits for the Swedish economy from asset purchases should therefore outweigh the disadvantage of the Riksbank's expected financial losses.

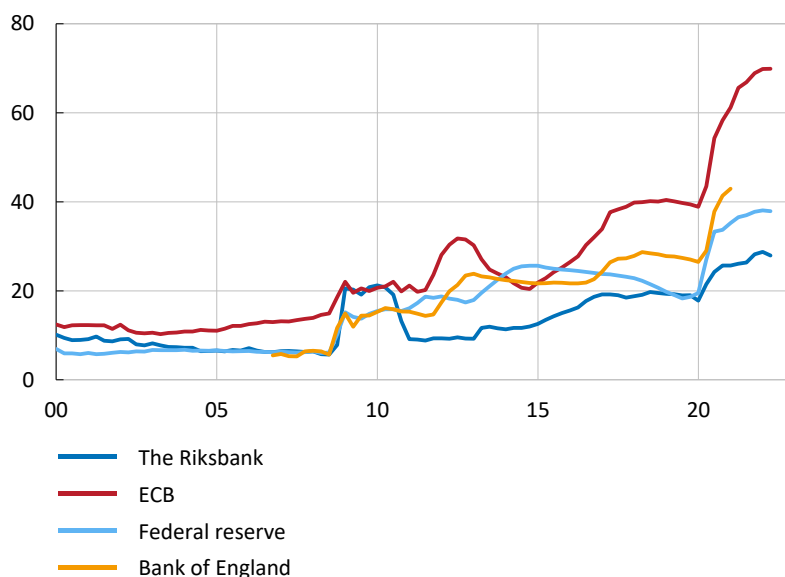
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# 1 The Riksbank's bank balance sheet has grown

Since the financial crisis in 2008-2009, many central banks have kept their policy rates close to or even just below zero to stimulate the economy and inflation. As further reductions in the policy rate are not judged to be effective or risk creating major negative side effects – there is much talk about the effective lower bound – it has become common to use other types of monetary policy measures. One measure used by the Riksbank and other central banks is to buy bonds on the secondary market, which means that the balance sheet increases substantially, see Figure 10.<sup>2</sup>

**Figure 1. Several central banks have expanded their balance sheets**

Balance sheet relative to GDP, per cent, quarterly data



Note. For GDP, the sum of four quarters is used. The Bank of England has a considerable backlog in the official reporting of the aggregate balance sheet, which is why the latest outcome is from the fourth quarter of 2020.

Sources: Macrobond and the Riksbank

In 2015, the Riksbank began purchasing Swedish government bonds to counteract the then too low inflation.<sup>3</sup> Since the outbreak of the coronavirus pandemic in spring 2020, the Riksbank has also purchased other types of interest-bearing securities, such as covered bonds, municipal bonds and corporate bonds, with the aim of supporting the economy and counteracting problems in the financial markets.<sup>4</sup> The coronavirus pandemic entailed a very uncertain future for both households and businesses, with

<sup>2</sup> Another purpose of the Riksbank's bond purchases was to directly support the functioning of various markets.

<sup>3</sup> See, for example, Alsterlind, Erikson, Sandström, & Vestin (2015).

<sup>4</sup> See, for example, Sveriges riksbank (2022e).

large sections of society being shut down to prevent the spread of infection. In that situation, central banks and other authorities needed to take over some of the financial risks that the private sector did not wish to, could not or dared not hold onto, to contribute to the smooth functioning of the economy. The Riksbank's assessment was that Sweden was in danger of dramatically deteriorating growth, increased unemployment and problems in the financial markets, unless the Riksbank and other authorities acted with the tools that were available. For the Riksbank, asset purchases were an important part of this, although this meant that the Riksbank's balance sheet and financial risks simultaneously increased.

During the period of asset purchases, the Riksbank's balance sheet has gone from the equivalent of around 10 per cent of Sweden's GDP to almost 30 per cent. It also appears in Figure 1 that other central banks have chosen to expand their balance sheets both more and to a higher level in relation to GDP during this period. The Riksbank's total holdings of Swedish securities for monetary policy purposes amounted to SEK 975 billion at the end of 2021, see Figure 2.<sup>5</sup>

## 2 Greater financial risks for the Riksbank

A large balance sheet with a large bond holding on the asset side increases the risk of financial losses.<sup>6</sup> The bonds held by the Riksbank normally have a maturity and a fixed interest term of several years.<sup>7</sup> During the period of asset purchases, both policy rates and market interest rates have been low in Sweden and globally, see Figure 3. When market interest rates now rise from these low levels, it means that the market value of the Riksbank's bond holdings falls.

It is, however, important to be clear that the objective when a central bank buys bonds is not to make a profit. The aim of the Riksbank's asset purchases has been to stimulate the economy and to maintain confidence in the inflation target. The Riksbank's assessment is that the financial losses for the Riksbank are expected to be less than the positive effects of the asset purchases (see simple calculation examples concerning possible effects on public finances in section 3.1 below).

The market value of the bonds can therefore vary, but if the bonds are held until they mature, the return is known throughout the period and therefore independent of the market value of the bonds. At the same time, the purchases of securities are financed by increasing the Riksbank's interest-bearing debt, see Figure 2. The Riksbank's purchases have been paid with newly created money in the Riksbank's RIX payment system (where the banks make payments between themselves and with the Riksbank). The payment for the bonds is made to the accounts of monetary policy counterparties

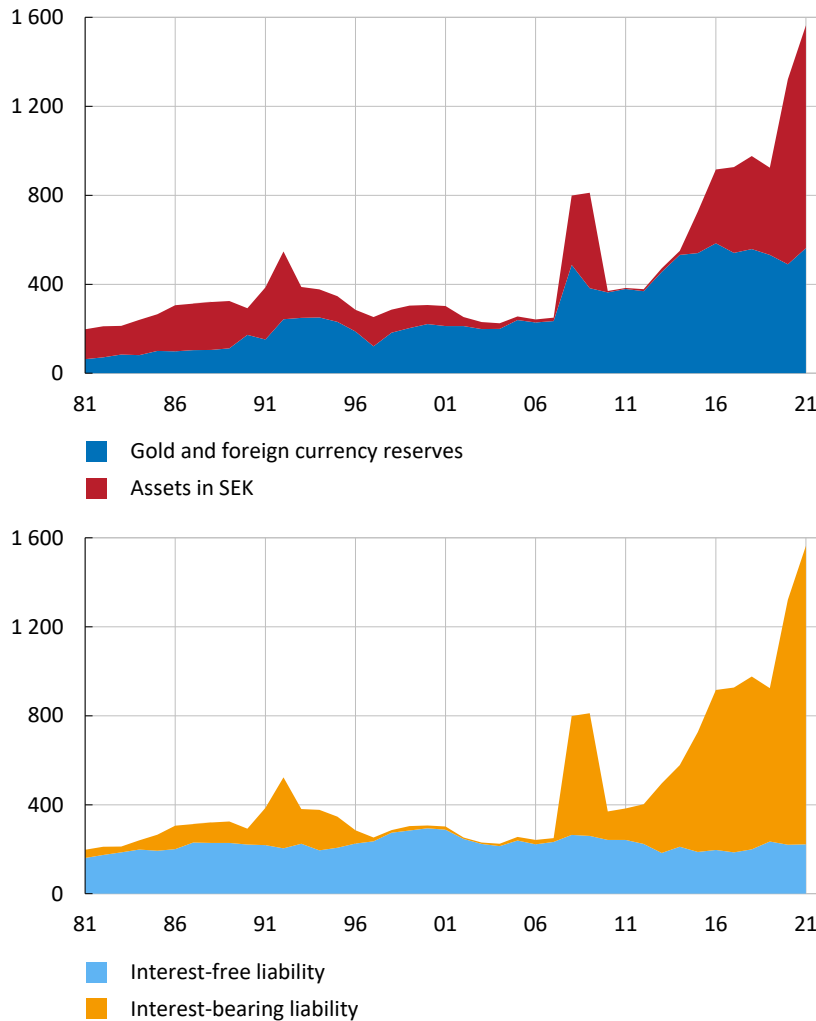
<sup>5</sup> Read more about the Riksbank's balance sheet at Sveriges riksbank (2022f).

<sup>6</sup> Read more about this in, for instance, "FACT BOX – The Riksbank's financial results are affected by interest rate changes" in Sveriges riksbank (2022a, p. 23), Sveriges riksbank (2021b) Sveriges riksbank (2022f) and Sveriges riksbank (2022b).

<sup>7</sup> A small part of the Riksbank's bond holdings in kronor has a short fixed interest term with variable coupons, i.e. the return if you keep the bonds to maturity is not known in advance but depends on how the short-term interest rates develop. However, since most of the bonds have a long fixed term with fixed coupons, we use this as a base for our reasoning in this Commentary.

in RIX and these funds are then deposited with the Riksbank on an ongoing basis. The interest that the Riksbank pays to its counterparties for this debt is variable and linked to the Riksbank's policy rate. This means that changes in the policy rate affect the Riksbank's interest expenditure.

**Figure 2. Assets and liabilities on the Riksbank's balance sheet**  
SEK billion (2021 prices)



Note. In this figure, the category of gold and foreign currency reserves also includes IMF assets. Assets in SEK include the Swedish bond holding, loans to the banks, and other assets. The interest-free liability includes equity, provisions, revaluation accounts, and banknotes and coins. Other liabilities are classified as interest-bearing liabilities. This includes mainly deposits in SEK and current currency liabilities to the Swedish National Debt Office.

Source: The Riksbank

The large bond holdings with a long maturity, that were financed with increased deposits in SEK, thus entail a substantial risk for the Riksbank's financial results.<sup>8</sup> The risk

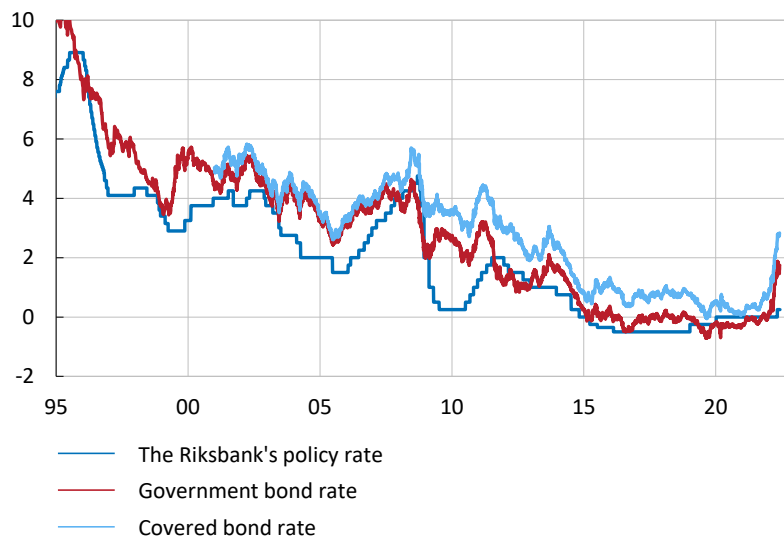
<sup>8</sup> A part of the Riksbank's foreign exchange reserve is also comprised of long-term bonds financed with increased deposits.



is clearly illustrated by recent developments with rapidly rising inflation, market interest rates and, to a certain extent, policy rates, which have resulted in a marked decline in the market value of the Riksbank's bond holdings in a short space of time. For example, during the first four months of 2022, the current market value of the Riksbank's asset holdings in SEK has decreased by more than SEK 40 billion. This type of interest-related risk is something the Riksbank has been well aware of and also communicated during the period of bond purchases.<sup>9</sup>

**Figure 3. Rapidly rising Swedish interest rates during 2022**

Per cent



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

Sources: Macrobond and the Riksbank

## 2.1 Higher interest rates affect the Riksbank's financial results

In the Riksbank's reporting of its financial results, the return from the bonds is divided into two parts. One part is a periodisation of current interest income that spreads the return that the Riksbank receives, if the bonds are held to maturity, evenly over the entire term. The other part of the return is changes in the market value of the bonds that are allowed to affect the reported result during the period in question. The second part can be managed in different ways with different accounting principles.

With an accounting principle that fully market values all assets, the total change in value over one year would be included in the profit and loss for the year in the annual accounts. A year of favourable value development for the central bank's assets would mean a financial profit, while a year when the value declines would lead to a financial

<sup>9</sup> See, for example af Jochnick (2015), Flodén (2016), Flodén (2018), and the decision-making documents for Sveriges riksbank (2021a) and Sveriges riksbank (2022d).

loss. Since the Riksbank has assets that tend to vary widely in value, such as long-term bonds and assets priced in foreign currency, such an accounting principle would result in a reported result that varies considerably from year to year.

Another type of accounting principle completely ignores changes in the market value of assets and instead is completely based on periodised interest income and the purchase value of the bonds.<sup>10</sup> With this type of accounting principle, the reported result gives very little information about what the result would be if the assets were to be sold before they mature. This means a much more even development of the financial results over time, apart from the effects of any sales before the bonds have matured.

The Riksbank uses accounting principles that follow the guidelines of the European System of Central Banks (ESCB).<sup>11</sup> These guidelines can be regarded as a combination of the two accounting principles described above. They are based on a market valuation of assets but where the variation in asset prices does not have a full impact on reported earnings. If the market value of an asset is less than the purchase value (adjusted for the periodised interest income) in an annual account, the value difference is recognized as a loss on net income for the year and the purchase value is written down to the prevailing market value.<sup>12</sup> However, if the market value of an asset exceeds the adjusted acquisition value, the reported profit for the year is not affected. The assets are still market valued on the balance sheet, but a corresponding item is recorded on the liabilities side in the form of a so-called revaluation account (see Fact Box). There is thus an asymmetry in how changes in the market value affect the Riksbank's financial results.

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<sup>10</sup> Examples of central banks using this type of accounting are the Federal Reserve and the Bank of England. Market values and any unrealised changes in value are often reported separately, but they do not affect the official accounts.

<sup>11</sup> The ESCB's accounting guidelines also provide for the possibility to book monetary policy assets at the so-called "accrued acquisition value", which means that the holding is not market-valued. However, the Riksbank has chosen not to use this possibility.

<sup>12</sup> It is in practice as if the Riksbank were to sell off the asset and thereby realize the loss, and immediately thereafter buy back the same asset at the prevailing market price.

## FACT BOX – unrealised gains are recorded in revaluation accounts

The Riksbank's assets are market-valued, which means that the value of the assets is determined by the current market price. If the market value is higher (lower) than the acquisition cost, which the Riksbank paid for the assets, an *unrealised gain (loss)* arises. The current unrealised gains or losses are not recorded as part of the Riksbank's reported results but instead in revaluation accounts. This is consistent with the accounting guidelines of the European System of Central banks (ESCB). One purpose of the use of revaluation accounts is that the central bank should not have to distribute unrealised gains to the government (its owner).<sup>13</sup> The Riksbank reports balances on revaluation accounts broken down by price effect (which for bonds is linked to interest rate changes), exchange rate effect and gold value effect.<sup>14</sup>

The calculation of unrealised price or exchange rate effects takes place bond for bond, and currency for currency. Booked unrealised gains (positive revaluation accounts) are a form of buffer against future value losses, but only for losses for the same bond or currency as the previous gains relate to. For example, large positive revaluation accounts for exchange rate effects are not an accounting buffer against losses due to rising interest rates. Here we can note that the gold revaluation account was SEK 64 billion at the end of April, see Table 1, but in accounting terms it is only a buffer against future depreciation of the Riksbank's gold reserves.

During a financial year, a revaluation account can have a positive balance, which represents an unrealised gain, or a negative balance, which represents an unrealised loss. If the balance is negative at the end of the year, a so-called write-down occurs and the unrealised loss is recorded in the annual result as a precautionary measure. This asymmetric management of unrealised losses means that the reported result and equity do not give an excessively positive picture of the situation if the assets were to be sold later.

<sup>13</sup> However, with today's dividend principle, this does not work for the Riksbank, since the dividend is normally calculated on the basis of a special profit measure *that includes* unrealised price effects. However, if the Riksdag votes through the proposal for a new Sveriges Riksbank Act, the new dividend rule will be linked to the reported results and thus unrealised gains will not be distributed.

<sup>14</sup> There is also a more detailed breakdown by asset classes and individual currencies. See note 27 in Sveriges riksbank (2022f, pp. 111-112).

**Table 1. The Riksbank's revaluation accounts**

SEK billion

	30 April 2022	31 December 2021	Change
Price effect	-51	12	-64
Exchange rate effect	38	21	16
Gold value effect	64	55	9
<i>Total</i>	<i>50</i>	<i>89</i>	<i>-38</i>

Source: The Riksbank

### Declining market value has rapid impact on the Riksbank's reported result

During 2022, bond yields have risen rapidly and the market value of the Riksbank's Swedish bonds has fallen. During the first four months of the year, the Riksbank has made an unrealised loss of SEK 38 billion, with a loss in value of SEK 64 billion resulting from interest rate-related price effects (SEK 43 billion on the monetary policy bond holdings and SEK 21 billion on bonds in the foreign exchange reserve) however, there the loss is offset by SEK 16 billion and SEK 9 billion respectively from positive exchange rate and gold value effects. See both the change in market values and the level of the revaluation accounts in Table 1. If interest rates and thus asset prices were to remain at these levels for the rest of the year, the year's reported result would thus be adversely affected, as unrealised value losses (negative revaluation accounts) lead to write-downs. A possible such development is presented as a scenario in section 2.2 below.

A write-down can be equated to the Riksbank selling and immediately buying back the asset in question at the prevailing market price. An unrealised loss is thus entered into the profit and loss account, as if we had actually sold and realised the loss. However, the write-down also means that the original purchase value of the asset is changed to the current market value, as if we had bought back the asset in question at the current market price. This means, on the other hand, that the expected and periodised interest income for the asset in the future will be higher than before, since it reflects the higher market rate. The Riksbank's interest income during the remaining term of the bonds is therefore, in accounting terms, higher and has a positive effect on future reported results (all else being equal).<sup>15</sup> This can then counteract a higher current interest expenditure that arises from the fact that the policy rate is also higher.

With the accounting principle chosen by the Riksbank, rising market interest rates and falling bond prices lead to a relatively large loss during the financial year in which the change occurs. The result then develops more normally, although the Riksbank's policy rate and interest costs for deposits rise. We can therefore expect that some of the initial and major losses may be partially offset by profits in subsequent years.

<sup>15</sup> For bonds with given cash flows held until maturity, the total return is also given. A write-down, due to higher market interest rates and lower value of the bond, only results in a redistribution of the return over the remaining time to maturity. The negative impact on earnings resulting from the write-down is entirely matched by the higher remaining interest income from the bond, which means that the return on holding the bond to maturity is unchanged and is solely dependent on the acquisition cost (purchase rate).

If one were to use the accounting principle that ignores market valuation and entirely lean on periodising future interest income, the final aggregated result would be the same as with the accounting principle chosen by the Riksbank. However, the effects of higher interest rates will be distributed differently over the period. Instead of taking full account of the reported results for a single year, the result is negatively affected by unchanged interest income but higher accrued interest expenses, due to the higher policy rate, during all remaining years of the holding's maturity (if the bonds are held to maturity). As mentioned above, some other central banks use this principle.

## 2.2 Scenario for results and capital

The Riksbank's financial results, and ultimately its equity, are thus affected by the composition of the balance sheet and the pricing of interest rates and exchange rates on the market. It is important to understand how the results and capital may develop in the future, both to be able to make forecasts of the dividends to the treasury and to be able to accurately assess the financial risk picture and the amount of capital that may need to be allocated as a buffer; so-called financial risk provisions.<sup>16</sup> The Riksbank regularly calculates various scenarios and simulations of how the balance sheet may develop. Below we review one of these scenarios, which illustrates what happens if the current rise in market rates continues.

### Assumptions for the scenario

In a scenario for the Riksbank's reported results and capital, we need to assume something about how the Riksbank chooses to change its balance sheet and how financial prices develop going forward. We assume that the bond holdings in Swedish kronor follow the monetary policy decision in April during the rest of 2022 and that no further purchases are made thereafter, which means that the holdings gradually shrink as the bonds mature.<sup>17</sup> This means that the interest-bearing debt will also gradually fall, as the banks' deposits in the Riksbank decrease to the same degree.

For financial prices, i.e. interest rates and exchange rates, our assumptions in this scenario are largely based on market pricing in mid-May, see Figures 6-8 in the Appendix.<sup>18</sup> In the scenario, bond rates in both Sweden and the rest of the world will therefore rise, as central banks are expected to raise their policy rates sharply in the coming years. For example, we assume that the Riksbank's policy rate will rise, in accordance with what forward rates were in mid-May, and reach its highest listing of about

<sup>16</sup> See Sveriges riksbank (2021a) and Sveriges riksbank (2022d).

<sup>17</sup> This corresponds to the lower limit of the inner interval in Figure 8 in Sveriges riksbank (2022a, p. 14). The chart does not extend over the entire period of our scenario, but the same assumption applies beyond the chart's horizon. This should not be seen as the Riksbank's official view of the future holdings but as a technical assumption. Note that the decision regarding asset purchases for the remainder of 2022 from the latest monetary policy meeting, in June, has not been accounted for in this scenario.

<sup>18</sup> In some cases, reliable market pricing is not available far into the future. In these cases, we have made simple and arbitrary assumptions beyond the horizon where market pricing is applied.

2.5 per cent in 2024, and then fall gradually to just over 2 per cent.<sup>19</sup> Further details of the assumptions are described in the Appendix.

### The Riksbank's results and capital according to the scenario

The assumptions presented above give an estimated development for the Riksbank's financial results going forward. The results in turn affect equity.

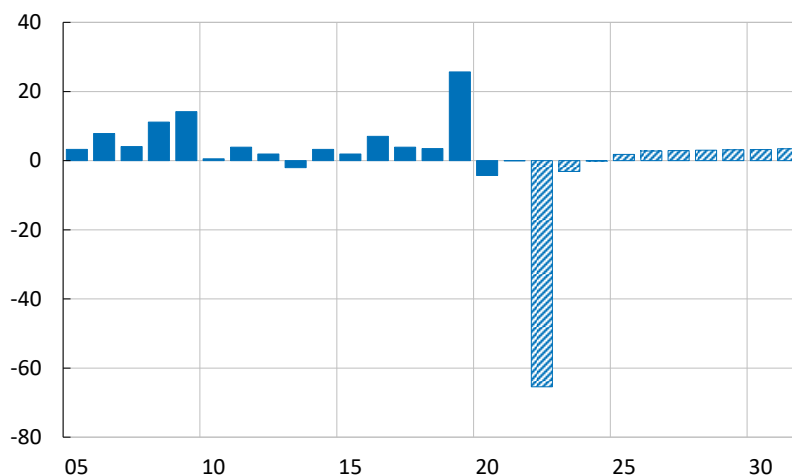
#### The Riksbank is expected to make a major loss in 2022

In the scenario, market rates in both Sweden and the rest of the world rise rapidly during 2022. This means that the market value of the bonds in both the foreign exchange reserves and the Swedish portfolio will fall rapidly during the year, which in turn leads to a severely negative result this year, SEK -65 billion, see Figure 4.<sup>20</sup>

At the same time, the purchase value of large parts of the bond holdings is written down at year-end. This means that higher interest income is recorded during the remaining duration of the bonds. When the policy rate is raised, the Riksbank's interest expenses on deposits in SEK rise, but this is offset by the higher interest income.<sup>21</sup> The results are therefore close to zero or slightly positive during the remaining years.

**Figure 4. A scenario for the Riksbank's reported results**

SEK billion



Note. Broken bars represent the scenario.

Source: The Riksbank

#### Equity falls to about zero

For a long period, the Riksbank has had a reported equity of between SEK 50 and SEK 80 billion, see Figure 5. In the scenario, the large loss hits equity, which falls to a level

<sup>19</sup> Since mid-May, the market pricing of the future Riksbank's policy rate has risen further.

<sup>20</sup> Note that the scenario is very uncertain and that we do not know what this year's result will be until after the turn of the year.

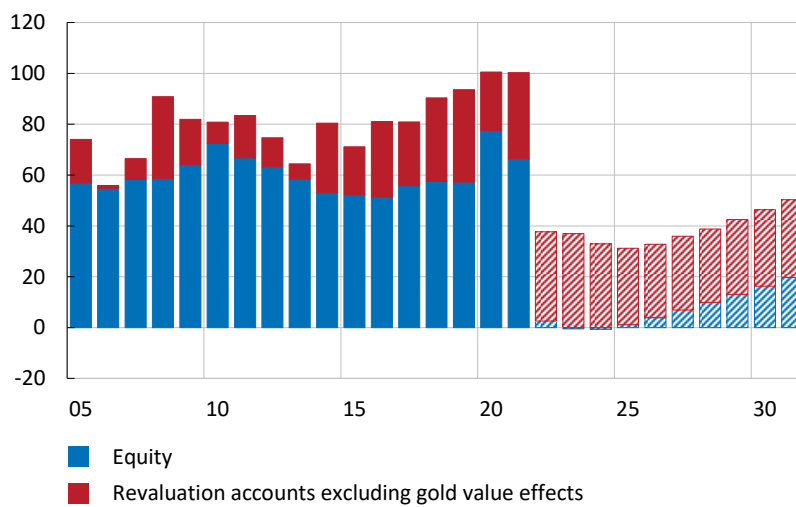
<sup>21</sup> An alternative way of describing this is that the higher interest income from write-downs offsets the Riksbank's reported loss, while the rising interest expenses affect the reported results.

around zero. Although the results turn positive a few years ahead in the scenario, it takes more than a decade for the Riksbank to rebuild its equity with its own profits.

If we assume that the proposal for a new Sveriges Riksbank Act takes effect from the 2023 accounting year, the rules for profit dividends from the Riksbank to the treasury will change (see the article). In this scenario, there is no scope for such dividends during the current period.<sup>22</sup> Instead, it may be appropriate to apply the new act's rule on recapitalisation from the State to the Riksbank (see the special article).

**Figure 5. A scenario for the Riksbank's capital**

SEK billion



Note. Equity here also includes existing financial risk provisions of SEK 5 billion. Revaluation accounts refer to unrealised gains from price and exchange rate effects (see Fact Box). Broken bars represent the scenario. This scenario ignores any capital injection from the government (see special article).

Source: The Riksbank

<sup>22</sup> Even with the dividend principle used in the current Sveriges Riksbank Act, it can be expected that dividends will not be available for most of the scenario.

## ARTICLE – the Riksdag votes on the proposal for a new Sveriges Riksbank Act

On 1 June 2022, the Riksdag voted in favour of the first step of two towards adopting a new Sveriges Riksbank Act (Proposition 20121/22:41 and Report 2021/22:KU15).<sup>23</sup> The Riksdag will vote a second time after the autumn parliamentary elections, and if the draft law is approved, the new Sveriges Riksbank Act will enter into force on 1 January 2023.

The new act amends the rules for the Riksbank's dividends to the State and for equity. In brief, they mean that there is a target level for equity. This is set at SEK 60 billion as of 1 January 2023 and is subsequently adjusted upwards with CPI inflation each year. If the Riksbank makes a profit that results in equity exceeding the target level, the surplus part of the profit is distributed to the State. If, on the other hand, the Riksbank's equity falls below 1/3 of the target level, the Riksbank *shall* petition to the Riksdag for a recapitalisation. The amount requested shall normally bring equity up to the so-called basic level, which is 2/3 of the target level. However, if the Riksbank considers it necessary for it to have sufficient earning capacity and be self-sufficient in the long term, capital may need to be raised all the way up to the target level. However, the draft law says that the funds in the revaluation accounts should also be taken into account when determining the required size of the recapitalisation.

Figure 5 shows that in the assumed scenario the Riksbank's equity falls below 1/3 of the target level, and in this situation the Riksbank would therefore need to make a request for recapitalisation if the new Sveriges Riksbank Act had entered into force. However, if funds in relevant revaluation accounts are included, capital will be close to the basic level.<sup>24</sup> This makes it difficult to assess what amount, if any, would be relevant for a recapitalisation request. We have therefore ignored the possibility of recapitalisation in the calculation of the scenario and simply note that this rule would be relevant in the new act in such a scenario.

<sup>23</sup> See Sveriges riksdag (2022).

<sup>24</sup> The Riksbank's gold reserve has a separate revaluation account which it is not appropriate to include because the gold does not mature and the Riksbank has no plans to sell it. Since the gold revaluation account is only a buffer against gold price losses in accounting terms, it is not, for example, a buffer against the type of interest-related losses that we mainly focus on here.



### 3 Consequences of losses

It is still too early to express with any high degree of precision what the overall effect on the Riksbank's financial results will be from rising inflation and interest rates. Other central banks that have used their balance sheets for monetary policy purposes may also incur losses, but different ways of recording these losses may lead to them appearing in the central banks' reported results at different times. For example, quarterly reports from the Federal Reserve and the National Bank of Switzerland have shown that they have made unrealised value losses on their assets during the first quarter.<sup>25</sup> A scenario analysis indicates that the Bank of England may make repeated annual losses on its bond holdings in the coming years (although the overall result is expected to be positive, due to earlier gains).<sup>26</sup>

Even if the Riksbank makes a major loss, the ability to implement the desired monetary policy need not be affected. The Riksbank has capital buffers, in the form of previously unrealised gains, provisions, and equity, which strengthen the ability to resist losses. A central bank can always pay for itself in its own currency, and the central bank can even have a negative equity for a period of time and still function as usual.<sup>27</sup>

However, there are potential negative consequences of large losses and low capital. Although the central bank has an unchanged capacity to implement monetary policy or liquidity support measures, a large loss may lead to speculation about the central bank's capacity. If the central bank is not clear in its communication in such a situation, it may lead to future monetary policy measures not having as good an impact as before.<sup>28</sup> In addition, a low level of capital, combined with a small amount of cash and a small amount of seigniorage, may lead to a deterioration in the central bank's earnings and the possibility of being self-financed. This may in turn mean that the financial independence of the central bank is weakened.<sup>29</sup>

#### 3.1 The effects of the asset purchases

The Riksbank, like several other central banks, has made purchases of securities to be able to conduct a more expansionary monetary policy in a situation where the policy rate is close to its effective lower bound. During the pandemic, the aim was to support the Swedish economy by keeping interest rates low, facilitating access to credit

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<sup>25</sup> See Federal Reserve System (2022) and Swiss National Bank (2022). Since the Federal Reserve does not market value its assets, the reported result is not affected by unrealised losses. The unrealised value change is shown separately in the quarterly report.

<sup>26</sup> See Busetto et al (2022).

<sup>27</sup> See Archer & Moser-Boehm (2013)

<sup>28</sup> See Archer & Moser-Boehm (2013).

<sup>29</sup> This in turn is negative for the monetary independence of the central bank. The seigniorage is what the central bank earns in that outstanding banknotes and coins are a form of interest-free capital, on the liabilities side of the balance sheet, which contributes to the central bank gaining a favourable difference between the return on assets and the financing costs of the debts. Equity can also be regarded as interest-free.

and liquidity and avoiding the prevailing uncertainty triggering a financial crisis.<sup>30</sup> The monetary policy decisions on asset purchases were made after consideration of the advantages and disadvantages of the purchases. The risk of losses was one of the disadvantages, but the benefits of making the purchases were assessed to outweigh the disadvantages.<sup>31</sup>

### **The Riksbank's task is not to generate profits**

The Riksbank has *not* purchased securities for the purpose of managing them to generate profits. An evaluation of monetary policy-motivated asset purchases needs to take into account the broad impact on the economy and the financial markets, where possible losses for the Riksbank are only one of several aspects. In other words, whether the purchases have been a 'bad or good deal for the Riksbank', based on its targets, is not determined by the difference between the market value of the securities portfolio at a certain point in time and its purchase value.

The asset purchases by the Riksbank and other central banks is judged to have had positive effects on the economy. The purchases have contributed to lower interest rates that stimulate consumption and investment. This in turn has meant higher economic activity and lower unemployment.<sup>32</sup> Asset purchases have also contributed to higher inflation and higher inflation expectations, which was very important as inflation during this period was below the inflation target. The purchases are thus also expected to have contributed to maintaining the credibility of the inflation target, which is important for good long-term economic development.

### **Asset purchases have had positive effects on public finances**

Although they have not been the aim of the asset purchases, lower interest rates and higher economic activity have also strengthened public finances. These positive effects have probably been greater than the Riksbank's losses discussed above. We illustrate this with some simple exemplifying arithmetic:

- According to calculations made at the Riksbank, the asset purchases in 2015-2021 have meant that the term premium, and thus yields on government bonds with longer maturities, have been on average 0.4 percentage points lower during the period. This has stimulated demand in the economy and the GDP level has on average been around 0.25 per cent higher. If this higher GDP level is totalled during the period 2015-2021, it will be approximately SEK 80 billion.<sup>33</sup>

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<sup>30</sup> See for example Sveriges riksbank (2020), Sveriges riksbank (2022e), Sveriges riksbank (2022b), Sveriges riksbank (2022c) and Sveriges riksbank (2022g).

<sup>31</sup> See for example Sveriges riksbank (2021a), Sveriges riksbank (2022d), Flodén (2016), Flodén (2018), Ingves (2020) and Skingsley (2022) for discussions of the risk of losses.

<sup>32</sup> For a review of the different channels through which asset purchases affect the economy, see for example Melander (2021) and Johnson, Kozicki, Priftis, Suchanek, & Yang (2020).

<sup>33</sup> These effects are calculated using a general equilibrium model developed by Kolasa & Wesołowski (2020) that has been adapted to Swedish conditions. The effects are less than those reported in other studies and can therefore be seen as conservative estimates of the effects of the Riksbank's asset purchases. See for

- Higher GDP contributes to stronger public finances by increasing tax revenues and reducing expenditure, for example, on unemployment benefits. With a so-called budget elasticity of 0.5, the positive GDP effects mean an increase in public finances in the magnitude of around SEK 40 billion during the period.<sup>34</sup>
- Central government and local government new borrowing during the period amounted to approximately SEK 1 100 billion with an average maturity of seven years, which has resulted in lower interest costs for this borrowing by approximately SEK 30 billion as a consequence of the asset purchases.<sup>35</sup> This calculation only takes into account direct borrowing costs and the public sector also has financial assets, which complicates the calculations.<sup>36</sup>

Stronger public finances are only one effect of asset purchases. The overall effect of higher production and employment is much more important for the economy and social welfare, but we leave it to others to analyse this. In addition, the asset purchases decided during the coronavirus crisis in 2020 helped to reduce the risk of a severe credit crunch or a financial crisis. The potential gain for the economy from this is very large, but it is not captured in the calculations presented here.

## 3.2 The Riksbank's capital and its financial independence

With asset purchases for monetary policy purposes, the Riksbank took over some of the financial risks that private operators did not want to, or could not, take because of the uncertainty prevailing during the coronavirus pandemic. The Riksbank's assessment is that the asset purchases have supported the Swedish economy and have counteracted the negative effects that arose in the wake of the pandemic.

This year, market interest rates have risen rapidly, which means that the value of the Riksbank's securities holdings falls, and the Riksbank is therefore expected to make a

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example Melander (2021) for estimates of effects on financial variables, including government bond rates for Sweden, and Di Casola (2021) for a compilation of effects on GDP and inflation for the euro area, the United States and the United Kingdom, based on a large number of research studies. See also, for example Bhattarai & Neely (2022), for a review of research into the effects of non-conventional monetary policy.

<sup>34</sup> The budget elasticity shows how much government finances strengthen, as a percentage of GDP, when the GDP gap (resource utilisation) rises by 1 percentage point. See Konjunkturinstitutet (2018) for calculations of its size.

<sup>35</sup> This calculation only covers bond borrowing in SEK by the Swedish National Debt Office and Kommuninvest. In addition, many municipalities issue bonds of their own. They have also benefited from lower borrowing costs.

<sup>36</sup> The public sector also has interest-bearing assets whose return may have been adversely affected by the Riksbank's acquisition of assets. At the end of 2021, the public sector had interest-bearing assets (deposits, securities, loans, interest-rate funds and trade credits) worth SEK 1 846 billion and interest-bearing liabilities (deposits, securities, loans and trade credits) worth SEK 2 317 billion. Interest-bearing liabilities thus exceeded assets by SEK 471 billion. Overall, the public sector has a net financial wealth, but it mainly consists of shares whose return is likely to have been positively affected by the Riksbank's acquisition of assets. A full assessment of the aggregate effects on the public sector's interest costs and capital income as a result of the Riksbank's asset purchases is far beyond the objective of this Economic Commentary.

financial loss. However, the aim of the Riksbank's assets purchases was not to generate profits for the Riksbank. The purpose of the purchases was the broad and positive monetary policy effects on Sweden's economy.

Although the Riksbank's monetary policy capacity need not be affected by a large reported loss, there is reason to strive to rebuild and strengthen the Riksbank's capital in the future. Capital is not only a buffer against possible losses, but also strengthens the Riksbank's financial independence and the conditions to remain self-financed. The proposal for a new Sveriges Riksbank Act is based on having a target level for the Riksbank's own capital, precisely for that reason. The Riksbank's capital needs to contribute both to the conditions for long-term self-financing and to the ability to withstand the future losses that may arise when the Riksbank carries out its tasks.<sup>37</sup>

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<sup>37</sup> See Kjellberg & Vestin (2019), Appendix 2 of Sveriges riksbank (2019), Sveriges riksbank (2021a) and Sveriges riksbank (2022d) .

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## APPENDIX – Assumptions in the scenario

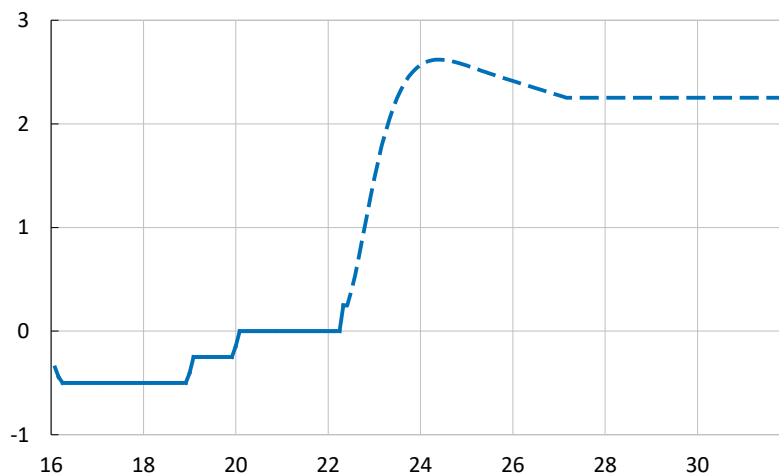
In the scenario, it is assumed that Swedish government bond rates are compatible with the expected policy rate (according to the so-called expectations hypothesis) and that term premiums are in line with historical averages. For the five-year government bond rate, this means that it will rise from the current level of around 1.5 per cent to just over 2.5 per cent in the coming years. More risky bonds included in the Riksbank's holdings, such as covered bonds and municipal bonds, are also assumed to be priced at risk premiums that are in line with historical averages.

We also assume that US and German government bond yields are developing in line with the current market pricing of future central bank policy rates. US government bond yields have risen sharply in recent months and in the scenario remain at approximately the current level. German government bond yields have also risen somewhat from negative levels and are assumed in the scenario to continue rising more gradually in the coming years. We assume that the Swedish krona will strengthen marginally against the US dollar and the euro during the period.

In addition, we assume that the stock of banknotes and coins remains unchanged at the current level and that the foreign exchange loans from the Swedish National Debt Office are settled in line with the decision in February this year.<sup>38</sup> The gold is managed passively, the level of foreign currency reserve assets is kept largely constant (in foreign currency) and the items with regard to the IMF that the Riksbank has on the balance sheet remain unchanged.

**Figure 6. The Riksbank's policy rate**

Per cent



Note. Broken line refers to assumptions in the scenario.

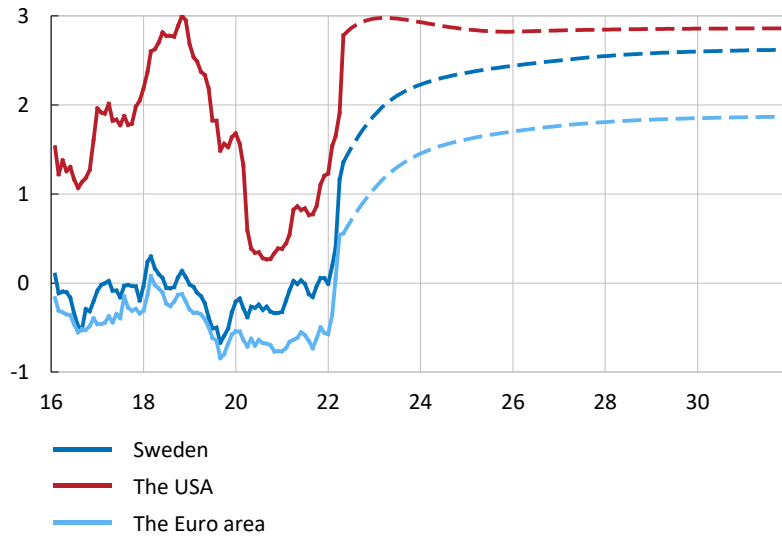
Source: The Riksbank

<sup>38</sup> See Sveriges riksbank (2022h).



**Figure 7. Government bond yields**

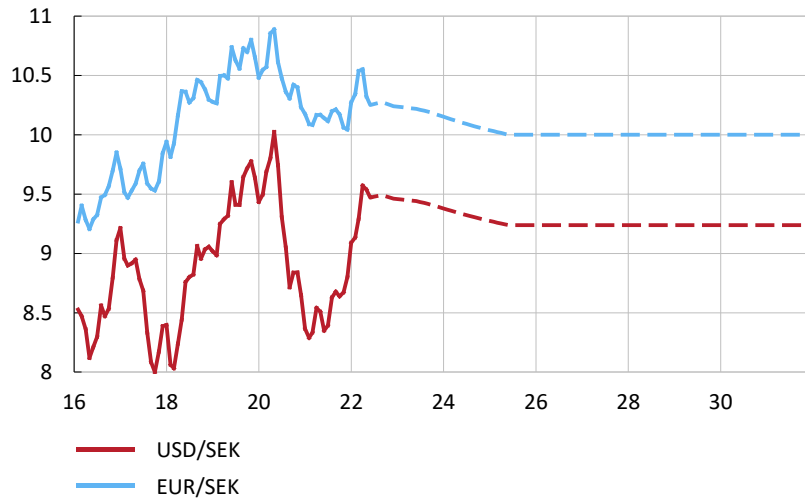
Per cent



Note. Synthetic zero-coupon government bonds with a maturity of 5 years. Monthly frequency. Broken line refers to assumptions in the scenario.

Source: Macrobond and the Riksbank

**Figure 8. Exchange rates against the Swedish krona**



Note. Monthly frequency. Broken line refers to assumptions in the scenario.

Source: The Riksbank



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