



Decision guidance

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Decision on provision for financial risk 2021

Decision by the Executive Board

The Executive Board hereby decides that the Riksbank's provision for financial risks is zero Swedish kronor (SEK) in the result for 2021.

Background

The financial risks that come with the assets and liabilities of the Riksbank have increased during 2020 and 2021. The Riksbank takes annual decisions on provisions for financial risks, with the aim of adjusting its capital to the size of the risks on the balance sheet.

The Riksbank balance sheet and financial risks

In recent years, monetary policy has changed substantially, as a result of crises and structural changes. Among other things, this has resulted in the Riksbank now using purchases of securities to make monetary policy more expansionary. This development accelerated in 2020 and 2021, when the Riksbank implemented a number of measures to combat the negative consequences of the coronavirus pandemic for the economy.

In March 2020, the Executive Board decided that, over the period March–December 2020, the Riksbank would purchase securities in a total nominal amount of no more than SEK 300 billion (ref.nos. 2020-00373 and 2020-00397). This purchase programme included purchases of government bonds, bonds issued by Swedish municipalities and regions and Kommuninvest i Sverige AB, covered bonds issued by Swedish institutions and bonds and commercial paper issued by Swedish non-financial corporations. In June 2020, the purchase programme was extended until 30 June 2021 and expanded to an amount of SEK 500 billion (ref.no. 2020-00744). In November 2020, the Executive Board decided to extend the purchase programme until 31 December 2021 and to expand the nominal amount to a total of SEK 700 billion and to include treasury bills (ref.no. 2020-00861). In November 2021, it was decided to continue purchases during the first quarter

of 2022 in order to compensate for the securities holdings that have matured (ref.no. 2021-01212).

These asset purchases are helping to keep the interest rates faced by households and companies low and to support the supply of credit. They have also resulted in the Riksbank's balance sheet growing.

When the holdings of various securities grow, this also increases the risk that the Riksbank will make losses in the future. The main reason for this is that the interest rate risk has increased.

That the interest rate risk has increased primarily results from the assets that the Riksbank has purchased having longer maturities than the liabilities that the Riksbank has simultaneously accrued against its monetary policy counterparties to finance the purchases.¹ This gap in maturity means that the Riksbank's financial result improves when interest rates fall, but also that the result deteriorates if interest rates instead rise. If the repo rate is raised, the Riksbank's funding cost for the entire monetary policy deposits increases. When the long-term market rates rise, this has an instant effect on the market value of the Riksbank's holdings of securities, which also affects the result and dividend to the state. The increased holdings of securities therefore mean that the Riksbank's result has become more sensitive to interest rate adjustments.

The Riksbank has purchased securities that could lead to loan losses, such as covered bonds and corporate bonds, and this has also led to an increase in credit risk. However, the credit rating of these securities is good and the Riksbank considers that credit risk is still very small.

In 2021, the Riksbank has decided to replace currency loans from the Swedish National Debt Office with self-financing (ref.no. 2021-00032). This is done by repaying the currency loans as they fall due for payment, while the Riksbank purchases currency at an even rate on the foreign exchange market with new money.² As a result, the currency loans are gradually being replaced by increased deposits in kronor. The transition to fully self-financed foreign exchange reserves entails a further increase in financial risks on the balance sheet, in the form of higher interest rate and foreign exchange risk.

Provisions for financial risks

As the financial risks on the balance sheet increase, it seems reasonable that the Riksbank's capital should also be allowed to increase. Making provisions for financial risk is a long-term measure that reduces the risk of losses making the Riksbank's equity fall too low or become negative. If capital is too low, the Riksbank's revenue risks being lower than the cost of the bank's operations. In such a situation the Riksbank's financial strength and independence would weaken. Risk provisions are a means of adjusting the level of the Riksbank's capital to the financial risks, which helps to maintain the

¹ When the Riksbank purchases securities in kronor, these are paid for with newly created central bank money, which means that the Riksbank's counterparties receive increased balances in the RIX payment system. This money can be invested at the Riksbank, either in the deposit facility or as Riksbank Certificates and therefore becomes an interest-bearing debt for the Riksbank.

² Just as with securities purchases in Swedish kronor, newly created central bank money in the RIX payment system leads to increased deposits with the Riksbank, either in the deposit facility or in Riksbank Certificates.

Riksbank's financial independence, and confidence in the Riksbank's ability to achieve its statutory objectives.

The Riksbank complies with generally accepted accounting principles and can thereby make financial risk provisions if needed, in accordance with European accounting rules.³ The starting point for making risk provisions must be an estimation of the central bank's risk exposure to market (interest rate, exchange rate and gold price) and credit risks.⁴ The need for risk provisions must therefore be based on an analysis of the risks and the need for the size of the risk-absorbing buffer.

A risk provision is an accounting measure that reduces the Riksbank's result and dividend, thus transferring part of the profit to a buffer for future losses. The opportunity to make provisions for financial risks and the size of the risk provision for an individual financial year therefore largely depends on the Riksbank's result and dividend before provision.

Last year, the Riksbank made a risk provision for the first time. Since the balance sheet and the financial risks have grown during 2020 and 2021, the Executive Board considers that the Riksbank's capital needs to continue to increase. However, the preliminary result for the financial year 2021 show that the Riksbank did not make a profit and the Executive Board assesses that there is no basis for making a risk provision for 2021.

The Executive Board will continue to take a decision every year on the size of the item financial risk provisions on the balance sheet. If the need to strengthen the buffer remains, and results or dividends are positive, the Executive Board may decide on additional provisions. This does not mean, however, that the Riksbank will make new provisions for financial risks every year. If losses lead to the absence of dividends to the State, or if the risk-absorbing buffer is deemed to be too large, the Executive Board may decide to reduce the balance sheet item for the risk provisions by a reversal of the funds allocated. This would strengthen the reported and dividend-qualifying result.

Considerations

The Riksbank's need to strengthen its capital is due to the fact that the balance sheet has grown and that the risk of negative results has increased. A risk provision strengthens the Riksbank's capital. The provisions will thereby form a complement to the existing equity and revaluation accounts. If the Riksbank makes losses in the future, and the dividends to the central government are zero, accumulated risk provisions can be used to strengthen the result.

The General Council of the Riksbank submits proposals to the Riksdag on the dividend to central government. The principle is that this is to be 80 per cent of the mean value of

³ This is due to the Riksbank being required to keep accounts in accordance with Chapter 10, Section 3 of the Sveriges Riksbank Act (1988:1385). The applicable reporting standards are the European System of Central Banks' guidelines for accounting (EU) 2016/2249 (ECB/2016/34), amended in accordance with (EU) 2019/2217 (ECB/2019/34). At least 17 out of 27 national central banks in the European System of Central Banks have utilised the possibility of making financial risk provisions in the annual accounts for 2020. The ECB also made use of this possibility.

⁴ Market risk refers to the risk that changes in interest rates, exchange rates or the price of gold will lead to losses for the Riksbank. Here, credit risk refers to the risk that losses will arise as a result of issuers of securities in which the Riksbank has invested, or the Riksbank's counterparties, failing to fulfil their financial obligations.

the Riksbank's dividend-qualifying result for the last five years.⁵ When the Riksbank makes risk provisions, both the reported and the dividend-qualifying result decrease, which in the short term leads to a lower dividend than would otherwise have been the case. In the longer term, however, the risk provisions can contribute to reducing large fluctuations in the dividend-qualifying result, as losses can be offset against the risk provisions. This may mean that a lower dividend today is compensated by a higher dividend further ahead.

Larger risk buffer is needed

The size of the provision needed is calculated by looking at whether the existing risk-absorbing buffer is sufficient to cover the potential losses that may arise for the Riksbank according to various risk measures. Factors such as the financial result for the year and the effect on the dividend to central government should also be considered in the final assessment of a suitable amount to set aside.

The Riksbank uses several risk measures to measure the financial risks in different ways and assess how far our current risk buffer is sufficient. This makes it possible to calculate how much larger the risk buffer would need to be, with different calculation models and for different probability levels. The time horizon in the risk analysis is five years, which we consider to be reasonable since we want to take into account how more lasting changes in interest rates and exchange rates affect the Riksbank's results.

On the basis of this analysis, the Riksbank's assessment is that the risk buffer needs to increase by SEK 15 to 40 billion in order for the Riksbank to maintain its financial independence in the long term. The analysis is described in more detail in the decision annex "The Riksbank's need for a financial risk buffer".

Size of the year's provision

The decision on the year's risk provision takes into account the need to increase the risk-absorbing buffer by SEK 15 to 40 billion, to the size of the result prior to the provision decision, and to the effect that a risk provision would have on the dividend to the state and on equity.

The preliminary reported result for the 2021 financial year is SEK -0.04 billion before provisions.

The dividend-qualifying result is calculated slightly differently to the reported result, as unrealised interest-related result effects are included and gold and currency effects are excluded. Since the Riksbank had negative interest rate-related profit effects in 2021, due to market rates rising in Sweden and the USA, for example, the preliminary dividend-based result is SEK -9.7 billion before provisions. However, the dividend for 2021 is expected to remain positive, as the normal principle is to distribute 80 percent of the average dividend-qualifying result over the past five years.

Both the reported and the dividend-qualifying preliminary result show that the Riksbank did not make any profit for the financial year 2021. The Executive Board assesses that

⁵ The dividend-based result is reported excluding currency and gold price effects, but with additions for unrealized bond price effects (price changes caused by interest rate changes).

even if there is a need to increase the risk buffer, there is no basis for making a risk provision for 2021. The provision amount for the financial year 2021 will thus be zero Swedish kronor.

The conclusions from the calculations are summarised in Table 1.

Table 1. Summary of the assessment of the need for risk provisions

Estimated financial risks five years ahead	<ul style="list-style-type: none">- Up to SEK 176 billion in potential losses, mostly related to interest-rate and exchange-rate changes- Of which more likely losses could be slightly more than SEK 60 billion- Up to SEK 7 billion in potential credit losses (not explicitly taken into account in the estimated need of a risk buffer)
Need for a larger risk buffer	SEK 15-40 billion
2021 provision	SEK 0 billion

Annex: The Riksbank's need for a financial risk buffer

To be able to make a decision on a provision for financial risks in connection with the annual accounts, the Riksbank needs to first find out if the current financial risk buffer is sufficient. In a first step, we specify a minimum level of equity, which the Riksbank needs to have for the long-term earnings to be big enough for the bank to be considered as financially independent. The portion of the Riksbank's capital, including equity, revaluation accounts and provisions for financial risks, that exceeds the minimum level constitutes the Riksbank's risk buffer. In a second step, we analyse the financial risks on the Riksbank's balance sheet. The third and final step of the analysis shows how the Riksbank's capital is affected by the potential losses calculated in the risk analysis. If the analysis shows that capital falls below the minimum level, we can calculate how much greater the risk buffer would need to be to avoid this.

Current risk-absorbing buffer

The Riksbank's capital consists of equity, the revaluation accounts and previous provisions. In nominal terms, this amounted to SEK 66, 64 and SEK 5 billion each when we made this analysis, that is, about SEK 136 billion in total; see Table 1.⁶ However, the whole of this sum cannot be considered to be general risk-absorbing capital.

Table 1. The Riksbank's capital

	SEK billion
Equity	66
Revaluation accounts, interest effect	5
Revaluation accounts, currency effect	9
Revaluation accounts, gold price effect	50
Financial risk provisions	5
Total capital	136
Total excl. rev. acc. gold	86
Total capital excluding rev. acc. gold, in addition to the minimum level of SEK 60 billion (current risk buffer)	26

Note: Note that when the analysis of the need for risk buffers was made, the balance sheet as of the end of December 2021 was not known. Changes in market values since the calculations were made mean that the revaluation accounts as of 31 December 2021 will deviate from this table.

The revaluation accounts consist of previously unrealised gains and can be divided into three main categories: gold, interest and currency gains. SEK 50 billion are previous gold-price gains, which, according to accounting rules, may only be used as a buffer for future gold-price losses. Just over SEK 5 billion are unrealised interest-related gains, that only constitute a buffer for future interest losses. The sum of the revaluation accounts for unrealized foreign exchange gains is currently SEK 9 billion. There is thus a large risk-absorbing buffer for gold, which means that potential losses from the gold holdings will

⁶ This analysis was made at the end of 2021. The balance sheet as of December 31, 2021 was not known at this time and will deviate from the figures given here. However, this does not affect the conclusion on the need for an increased risk buffer.

not affect the reported equity. The risk provisions are therefore not affected by the gold-price risk.

Equity shall perform several functions, all of which aim to maintain the Riksbank's financial independence and the ability to carry out its tasks. One function is to constitute interest-free capital that, together with banknotes and coins, improves the Riksbank's net interest income and earnings so that the Riksbank covers its own running costs and can achieve a reasonably positive result. Another is to constitute part of the risk-absorbing buffer for the risks that the Riksbank has on its balance sheet. The buffer is needed so that equity does not fall too low if the Riksbank makes losses, for example due to unfavourable exchange rate or interest rate movements. A third function of equity is to ensure that the Riksbank can bear further risk if additional monetary policy measures were to be necessary, without deteriorating the financial independence.

The first step of the analysis is to determine a minimum level for equity. The analysis first considers how much capital is required to maintain sufficient average earnings. That part of equity that currently exceeds the minimum level for earnings is part of the total risk buffer, together with the revaluation accounts and risk provisions. It should be possible for the risk buffer to absorb the losses that the Riksbank risks making, so that equity does not fall below the minimum level.

If the risk buffer has been shrinking due to losses, the Riksbank needs to be able to rebuild it. For this to be possible, it is necessary for the Riksbank on average to be expected to make a profit. To recover a loss of SEK 10 billion within five years, the Riksbank needs to make an average annual profit of at least SEK 2 billion. The Riksbank's running costs are covered by the seigniorage from cash in circulation, and the return on equity. When we calculate the minimum level of equity needed to maintain such a profit level in the long term, we assume that the current demand for banknotes and coins in circulation will remain going forward. In addition, we assume that the nominal long-run interest rate is 2.5 per cent, which is in line with the National Institute of Economic Research's scenario for Swedish interest rates ten years ahead. With these assumptions, the estimated minimum level for equity is SEK 60 billion.^{7,8}

The Riksbank's equity should not therefore fall below SEK 60 billion when financial risks materialise and negative results occur. Given that shareholders' equity is SEK 66 billion, this means that there is almost SEK 6 billion available as risk-absorbing buffer, in addition to the minimum level.⁹ The total risk buffer, including the dedicated buffers in the form of positive revaluation accounts and previous risk provisions, is SEK 26 billion if we exclude the gold revaluation account.

⁷ With assets funded by SEK 60 billion in banknotes and coins, and SEK 60 billion in equity, an annual return of SEK 3 billion is achieved, given a nominal rate of return of 2.5 per cent. The calculation assumes that the Riksbank's net running costs are SEK 1 billion, which gives an average annual profit of SEK 2 billion.

⁸ In the proposal for a new Sveriges Riksbank Act, from the Riksbank Committee (SOU 2019:46) and in the proposal 2021/22:41, a target level for the Riksbank's shareholders' equity is proposed to be SEK 60 billion. This is intended to act as a *maximum* level for equity, which shall meet the need for equity with regard to both earning capacity and risk buffer. The Riksbank's assessment in this risk provision decision is that SEK 60 billion is a *minimum level*. This amount relates solely to the equity needed to maintain earnings capacity and is judged to be the lowest capital level that is compatible with a financial independence.

⁹ However, some of this can be expected to be distributed as the dividend principle is based on the average dividend-qualifying result over the past five years. Due to the high profit of last year, dividends can be expected to be relatively high in the years ahead, which (all else being equal) will reduce equity.

Current market risk

Three different models are used to calculate the market risks on the balance sheet. These are a scenario analysis, a macro-financial time series model, and calculations of how much Economic Capital is required to cope with losses according to the Value-At-Risk (VaR) metric for the Riksbank's total financial assets.

The risks included in the models are market risks in the form of interest-rate risk, gold-price risk and currency risk. The gold-price risk is included on principle but, as previously noted, is of no significance in this assessment. Credit risk is dealt with separately.

The Riksbank follows current accounting rules.¹⁰ This means that the risk estimation shall be based on the balance sheet and measures adopted up until the end of the financial year. The decision on financial risk provisions shall therefore not consider decisions that may be made after that. This also implies that the analysis should assume that the volume of cash in nominal terms, the dividend principle, and the size of the gold reserve remain unchanged.

In other respects, the analysis takes into account the acquisition of assets in SEK that was decided in 2021, including the purchases to be carried out during the first quarter of 2022 in accordance with the monetary policy decision of November 2021. Subsequently, the holding decreases gradually, as these securities mature.

The risk analysis also includes the Riksbank's decision on own financing of foreign reserve assets. The analysis includes both the loans that have already been replaced in 2021, and the loans that are to be replaced in 2022 and 2023 according to the decision in 2021.

The risk analysis and the calculations of how large the losses can be are a variable target in several respects. The outcome is primarily determined by developments in the Swedish economy, as it affects both financial risks and the Riksbank's decisions about important balance sheet items. However, the assumptions that the analysis must make for accounting purposes affect the risk analysis.

Five years is regarded as a suitable time horizon for analysing the risks. Over a five-year period, short-term variations in the financial result will have mostly worn off while it is a short enough time horizon for it to be possible to plan for provisions and allow for different risk scenarios. However, a five-year time horizon cannot fully capture the extent of the interest rate and foreign exchange risks that in the longer term result from the transition to a fully self-financed foreign exchange reserve.¹¹ According to model calculations (see Annex to the decision on self-financing), the impact on risks will be greater in the longer term, but at the same time it is difficult to tell how the Riksbank's other risks will develop in the longer run.

¹⁰ The Riksbank is required to keep accounts in accordance with Chapter 10, Section 3 of the Sveriges Riksbank Act (1988:1385). The applicable reporting standards are the European System of Central Banks' guidelines for accounting (EU) 2016/2249 (ECB/2016/34), amended in accordance with (EU) 2019/2217 (ECB/2019/34).

¹¹ See the Annex to the Decision "Financing of the foreign exchange reserves – consequences for the Riksbank's balance sheet and financial risks", which quantifies the risks in the longer term.

Scenario analysis

The first model looks at three different scenarios for developments in the krona exchange rate and interest rates, which give different consequences for the balance sheet and profit and loss account. One base scenario, which is not to be seen as a risk scenario, is based on the National Institute of Economic Research's main scenario in September 2021. In two risk scenarios, the balance sheet is stressed by interest rates rising more rapidly and the exchange rate strengthening more than in the base scenario. The scenarios are based on different assessments of the future interest rate development, according to surveys of interest rates in Sweden, the United States and the euro area conducted in November 2021.¹²

In the scenario with the fastest interest rate rises (scenario C in figures 1-3 below), the repo rate is 2.5 per cent at the end of 2026, US government bond yields are about 3 per cent, and the krona is around 5 per cent stronger than in the initial position. The risk scenarios are to be seen as examples of scenarios that are possible, but not the most likely. The starting-point is that the Riksbank shall be able to cope with such scenarios without excessively negative consequences for its financial standing.¹³

Macro-financial time series model

The time series model in the second model is a BVAR model with GDP, inflation, interest rates and exchange rates for Sweden, the euro area and the United States. The model simulates thousands of scenarios for developments in interest rates and the Swedish krona. These are then used to calculate probability distributions for the Riksbank's balance sheet items and for results over various time horizons.

Economic capital model

Finally, the measure of economic capital, which is only estimated for a one year horizon, is also used. The model is based on historical variances and correlations for financial prices to calculate a probability distribution for the Riksbank's total return at a one-year horizon. Based on this, a potential maximum loss (Value-At-Risk) at various probability levels is then calculated. The model does not include accounting and dividend rules, which is an important reason why it is only calculated up to one year¹⁴

Market risks can lead to significant losses

These three models give different estimations of the risks (excluding credit risk), see Figure 1. This indicates that the losses five years ahead, for the 99-percent level (greatest loss for the 99 percent best outcomes), in the BVAR model will be very large. However, the interest-rate and exchange-rate development that would be required for

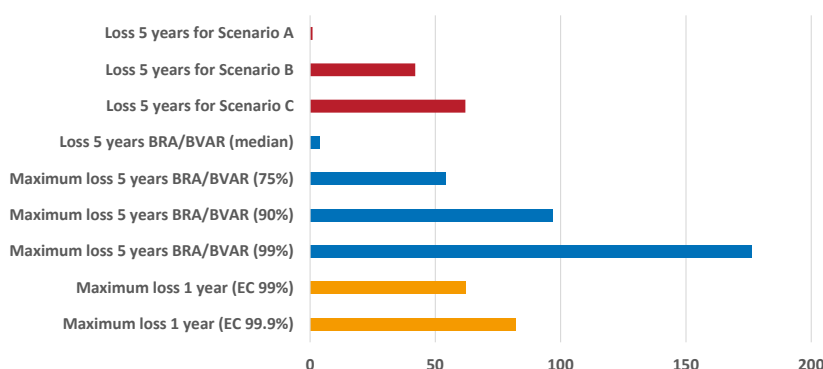
¹² The risk scenarios are based on the part of the survey responses that believe in a faster rise in interest rates than the NIER's scenario.

¹³ As mentioned previously, policy measures yet to be decided cannot be taken into consideration. But since the development of the repo rate is a fundamental driver of market rates and exchange rates, the risk of different developments in the repo rate are included in the analysis of market risk.

¹⁴ Different possible outcomes for the return of the assets at a five year horizon can have major consequences for the accumulated dividends to the central government and for the development of various revaluation accounts. This is crucial if you want to calculate the level of capital in five years. Since the EC model does not include these mechanisms, it is not suitable for use with a time horizon as long as five years

this outcome must be regarded as very unlikely. The scenario analysis shows that risk scenarios with somewhat higher probability could entail losses up to SEK 62 billion five years ahead. This coincides well with the calculations from the BVAR model corresponding to the 75 percent level, in Figure 1, which represents the largest possible loss for the 75 percent best outcomes. The Economic Capital model also indicates a similar risk picture, although in the shorter term and at the 99-, or 99.9-percent level.

Figure 1. Accumulated losses five years ahead (one year for EC) with different risk measures, SEK billions



Note: The scenario analysis (red bars) includes three scenarios for the exchange rate (KIX) and interest rates in Sweden, the United States and the euro area. Scenario A is the National Institute of Economic Research's main scenario up to 2030, published in September 2021. Scenarios B and C are risk scenarios in which the exchange rate appreciates by 5 percentage points more than in scenario A, and policy rate rises are initiated approximately one year earlier. In scenarios B and C, the policy rates are higher than 2 per cent for just over one year, and for around 3 years respectively, earlier than in scenario A. The time series model BRA/BVAR time series model (blue bars) is presented for different confidence levels, where, for example, the 99-percent level is the maximum loss for the scenarios that have the 99-percent best results. EC (yellow bars) refers to Economic Capital for different confidence levels and for a one year time horizon. Note that this analysis was done in November-December 2021.

Current credit risk

The Riksbank's assets are of very good credit quality, which contributes to low credit risk. The credit risk that does arise comes primarily from the lending to the Riksbank's counterparties, and from holdings of securities in both Swedish kronor and foreign currencies. The lending is collateralised, which makes the credit risk low. In addition, most of the lending that took place in 2020 has been repaid to the Riksbank in 2021, which means that the credit risk for lending is lower at the end of the accounting year 2021. The credit risk from securities holdings has certainly increased in pace with the monetary-policy-motivated asset purchases, but is still small, as the holdings consist primarily of government and municipal bonds, as well as covered bonds with high credit ratings. The holding of non-financial corporate bonds is relatively small and has a good credit rating, which makes the contribution to the total credit risk small.

None of the models described above can analyse market and credit risk together, so potential credit losses therefore need to be calculated and assessed separately. However, the Economic Capital model does provide the option of assessing credit risk separate from the market risk. It indicates a risk of credit losses one year ahead that is up to SEK 7 billion with a confidence level of 99 percent, but only SEK 1 billion at the 95

percent level.¹⁵ Covered bonds and foreign reserves account for the largest credit risks. Another way of measuring the credit risk is to use what the capital requirement for the holding would be according to the Basel III standard method, where different types of securities and credit ratings have different risk weights. With a basic risk-weighted capital requirement of 8 per cent, compatible with Basel III, the credit risk for the Riksbank's assets would require just under SEK 5 billion in a capital buffer.¹⁶ Given that the Riksbank has assets worth SEK 1500 billion, SEK 5-7 billion is a low credit risk.¹⁷

As the contribution of credit risk to the Riksbank's total financial risk is currently assessed to be small, we make no specific calculation of how the risk affects the buffer need. The Riksbank's calculated need for a stronger buffer does not therefore include the credit risk explicitly, which means that the decision on financial risk provisions for 2021 does not include it either. However, the Riksbank does not rule out the possibility of credit risks providing motivation for future decisions on provisions.

Need for a larger risk buffer

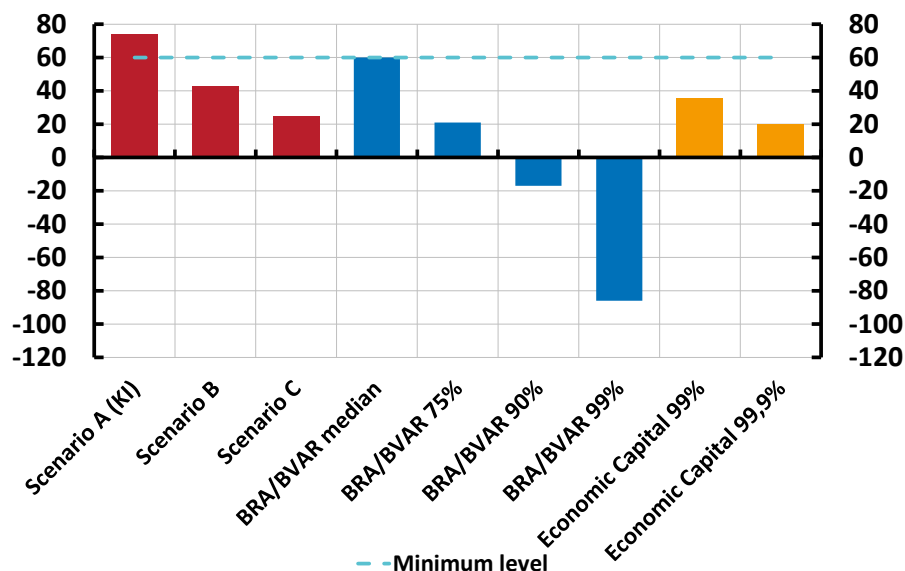
To be able to determine whether the buffers already in place are sufficient, we calculate how the various parts of the Riksbank's capital are affected by the potentially negative results from the above risk analysis and by possible dividends to the State, see Figure 2.

¹⁵ This calculation is based on the Riksbank's holdings of covered bonds being assigned the credit rating for the bonds (AAA/Aaa), which is higher than for the credit institutes that have issued the covered bonds. This is because the bonds give the owner preferential rights to a separate amount of collateral and lead to low credit risk.

¹⁶ The calculation is simplified and based on an aggregate compilation of the Riksbank's assets and their credit ratings. Swedish government bonds and municipal bonds are assumed to have zero risk weight.

¹⁷ However, it can be noted that the Riksbank's large holding of covered bonds, with only seven issuers, entails a relatively high concentration risk. Although the probability of a credit loss from these holdings is small, the credit loss may be significant if it occurs. This is the reason for why the EC measure for the confidence level of 99.9 per cent is significantly higher than the 99 per cent level (SEK 51 billion and SEK 7 billion respectively). However, the Riksbank's assessment is that it is not reasonable to make large provisions and to tie up capital for such low risks.

Figure 2. The Riksbank's capital level in five years according to various risk measures (excluding the gold revaluation account), SEK billion



Note: The level of the Riksbank's capital, excluding the gold revaluation account, for each risk measure. The capital level in five years is affected by the losses (as shown in Figure 1), and by any dividends, over the next five years. The dotted line refers to the lowest level (minimum level) that the Riksbank deems sufficient to maintain its financial independence in the long term. See also the note on Figure 1. Note that this analysis was done in November-December 2021.

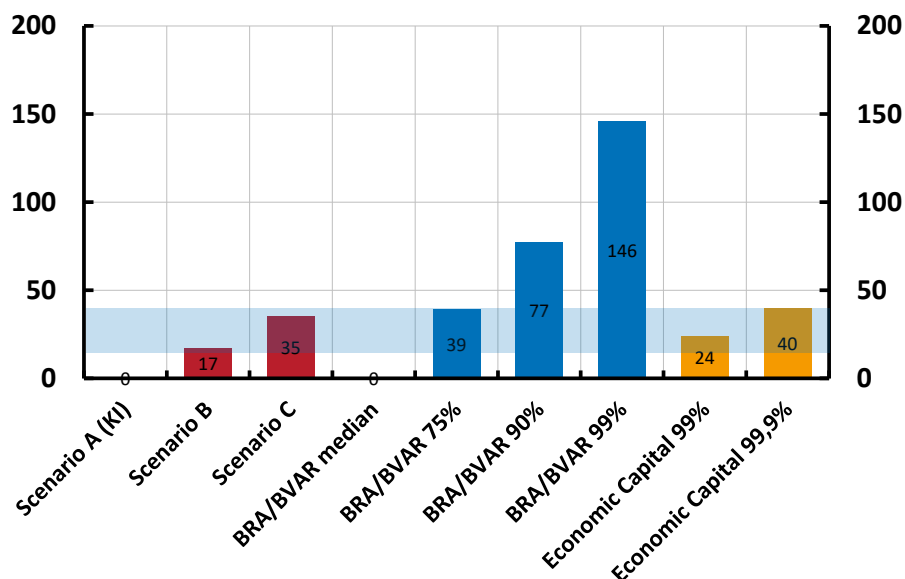
In scenario A (NIER's scenario), the losses are small and the capital level in five years' time is just over SEK 70 billion (excluding the gold's revaluation account), which means a level that is higher than the minimum level. According to all three model calculations, however, there is a fairly high risk that potential losses will be so large that they lead to equity being lower than the calculated minimum level of SEK 60 billion. This would mean that the Riksbank's capital would be too low for sufficient financial independence in the long term.

Figure 3 shows how much the risk buffer would have to increase according to the different model calculations in order to avoid equity falling below the minimum level of SEK 60 billion. However, the Riksbank's assessment is that the most extreme outcomes according to the time series model (BRA/BVAR 90 and 99%) are too unlikely to justify the Riksbank having to tie up capital of that size in a risk buffer. The less extreme calculation of the buffer requirement in the time series model (BRA/BVAR 75%), as well as the two risk scenarios B and C, is judged to correspond to a reasonable probability level for which the Riksbank's risk buffer should be dimensioned.¹⁸ The Economic Capital calculations, for the 99- and 99,9-percent level, show similar levels of the need for increased buffer.¹⁹ Although these calculations include more unlikely outcomes, they show losses that can occur in only one year's horizon. It is reasonable for the risk buffer to also cope with such outcomes.

¹⁸ If the more unlikely outcomes of large losses were to become a reality, the Riksbank's capital would be so low that a capital injection from the State may be required to restore the Riksbank's financial independence. An appropriate size for the risk buffer means that the probability for this will not be too great. However, it is not reasonable to have such a large risk buffer that the probability would be non-existent.

¹⁹ The corresponding buffer need calculated using the time series model, with the same probability levels and time horizon, gives a greater need for a buffer.

Figure 3. The need for an increased risk buffer so that equity does not fall below SEK 60 billion five years ahead (one year for EC)



Note: The need for an increased risk buffer is based on how much lower equity will be compared to the minimum level, for each risk measure (the difference between the minimum level and the bars in Figure 2). The shaded area depicts the overall assessment of the need, for the most relevant risk measures, expressed as the interval SEK 15-40 billion. See also the note on Figure 1. Note that this analysis was done in November-December 2021.

The blue horizontal field indicates an approximate range of the need based on the risk scenarios (scenario B and C) and the less extreme outcomes of the simulation from the time series model (BRA/BVAR 75%). The need for an increased risk buffer compared with the current level is estimated to lie in the interval of SEK 15 billion to SEK 40 billion. Any effects on the need for the risk buffer from the credit risk are not included.