



# Basis for Decision

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DEPARTMENT: Markets Department

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## Decision on provisions for financial risk 2020

### Decision by the Executive Board

The Executive Board hereby decides to make a provision for financial risks of SEK 5 billion in the annual accounts for 2020.

### Background

In recent years, monetary policy has changed substantially, as a result of crises and structural changes. This has resulted in the Riksbank using its balance sheet more actively as a monetary policy tool. This development accelerated in 2020, 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 (dnr 2020-00373 and 2020-00397). This purchase programme includes 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 (dnr 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 (dnr 2020-00861). Over the year, the Riksbank has also offered liquidity through a number of different lending programmes. For example, up to SEK 500 billion has been offered as loans to the banks for onward lending to non-financial corporations (dnr 2020-00358).

All of these measures contribute to keeping the interest rates faced by households and companies low and to the functioning of the credit supply. They have also resulted in the Riksbank's balance sheet growing.

The largest share of the securities in the Riksbank's balance sheet is formed of Swedish government bonds. These holdings are associated with low credit risks. The credit risks

are slightly higher, but still low, for the new holdings of municipal bonds, covered bonds and bonds and certificates issued by non-financial corporations. Nevertheless, this increased holding of bonds means that the financial risks on the balance sheet have increased over the year, above all due to the higher interest rate risk.

The increased risks on the balance sheet are thus primarily due to developments in the economy having required the Riksbank to take on more risk when other actors decide to reduce their risk-taking. The assets that the Riksbank has purchased have longer maturities than the liabilities that the Riksbank has simultaneously accrued against its monetary policy counterparties to finance the purchases. This maturity mismatch means that the Riksbank's financial result improves when the level of interest rates falls, as has been the case in recent years, but that the result deteriorates if the level of interest rates instead goes up. The larger balance sheet thus means that the Riksbank's result has become more sensitive to changes in the level of interest rates. The risk provisions are a way of dampening these effects.

Making provisions for financial risk is a long-term measure that reduces the risk of the Riksbank's equity falling too low or becoming negative. The risk provisions thereby contribute to the Riksbank's financial independence and strengthen confidence in the Riksbank's ability to attain its statutory objectives.

The Riksbank complies with generally accepted accounting principles and can thereby make financial risk provisions when the need arises, in accordance with European accounting rules.<sup>1</sup> The starting point for making risk provisions must be a motivated estimation of the central bank's risk exposure in terms of market (interest rate, exchange rate and gold price) and credit risk.<sup>2</sup> This means that the assessment of the need for risk provisions must be based on a motivated analysis of the risks and the need for a risk-absorbing buffer. The Riksbank has never previously utilised the possibility of making risk provisions but, given the development of the balance sheet and the risks associated with this, the Executive Board considers that provisions for financial risk need to be made this year.

Going forward, the Executive Board will take a decision every year on the size of the item financial risk provisions on the balance sheet. This does not mean, however, that the Riksbank will make new provisions for financial risks every year. If losses arise, or if the risk-absorbing buffer is deemed to be too large, the Executive Board may decide to reduce the balance sheet item for risk provisions. This will strengthen the reported and dividend-qualifying result.

## Considerations

The need to make risk provisions is based in the development of the balance sheet and the increased risk of negative results. The need is calculated on the basis of the existing

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<sup>1</sup> 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). Most national central banks in the European System of Central Banks have utilised the possibility of making financial risk provisions.

<sup>2</sup> 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.

risk-absorbing buffer and the risks on the balance sheet in different risk scenarios. Factors such as the financial result for the year and the effect on the dividend to central government may also be considered in the final assessment.

The aim of the risk provisions is to strengthen the risk-absorbing buffer. The provisions will thereby form a complement to the existing equity and revaluation accounts. If the Riksbank makes a loss, this can be offset against the risk provisions 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 formed of 80 per cent of the mean value of the Riksbank's dividend-qualifying result for the last five years. When the Riksbank makes risk provisions, the dividend-qualifying result decreases, which leads to a lower dividend than would otherwise have been the case. In the longer term, however, the risk provisions 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 in the near term is compensated by a higher dividend further on.

## Estimation of the need for risk provisions and the year's provisions

### **Current risk-absorbing buffer**

The Riksbank's capital currently consists of equity and the revaluation accounts. In nominal terms, these amount to SEK 78 and SEK 74 billion respectively, which is to say about SEK 150 billion in total. However, the whole of this sum cannot be considered to be general risk-absorbing capital.

The revaluation accounts consist of previously unrealised gains and can be divided into three main categories: gold, interest and currency gains. Just over 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 20 billion are unrealised interest-related gains that only constitute a buffer for future interest losses. The sum of the revaluation accounts for unrealised currency gains is currently close to zero, which means that there is presently no buffer reserved solely for currency losses. There is thus a large risk-absorbing buffer for gold, which means that potential losses from the gold holdings will not affect equity. The assessment of the need for risk provisions is not therefore affected by the gold-price risk.

Equity shall fulfil several different functions. One 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.

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, to avoid equity falling below the minimum level.

For the Riksbank to be able to build up the risk-absorbing buffer again, in the event of the buffer having been reduced by losses, the Riksbank must be expected on average to have a positive result. 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. To calculate the minimum level for equity needed to maintain such a profit level in the long term, the analysis is based on the current level of banknotes and coins in circulation. In addition, an assumption is made that the expected 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.<sup>3</sup>

The Riksbank's equity should not therefore fall below SEK 60 billion when financial risks materialise and negative results occur. Given the size of current equity, just under SEK 20 billion in equity is presently available as a risk-absorbing buffer, in addition to the specially allocated buffers that exist in the form of positive revaluation accounts.<sup>4</sup>

### **Present financial risks**

Three different models are used to calculate the risks on the balance sheet. These are a scenario analysis with three scenarios, 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 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 (see footnote 1). This means that the risk estimation shall be based on the balance sheet and measures adopted at the end of the financial year. The decision on financial risk provisions shall therefore not consider decisions that may be made after the end of the financial year. This implies that the analysis should assume that the volume of cash in nominal terms, the dividend principle, and the size of the gold reserve are unchanged.

In other respects, the analysis considers asset purchases decided on in 2020, including purchases that are to be implemented in 2021 and a technical assumption that holdings remain unchanged up until the end of 2023 (after which these securities gradually mature). In addition, it is also assumed that the foreign exchange reserve retains the size decided on in March 2019 (dnr 2019-00352), including the Riksbank continuing to fund

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<sup>3</sup> 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 with 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 a profit of SEK 2 billion.

<sup>4</sup> However, some of this can be expected to be distributed as dividend to the state as the dividend principle is based on the average dividend-qualifying result over the past five years. Due to the high profit of 2019, dividends can be expected to be relatively high in the years ahead, which (all else equal) will reduce equity.

the foreign exchange reserve with currency loans from the Swedish National Debt Office.

The risk analysis shall be repeated annually and will thus reflect the current situation. Some assumptions will change over time. For example, it is likely that the volume of cash will continue to fall. The decided asset purchases may also change.

The Riksbank has taken a decision in 2021 to replace currency loans from the Swedish National Debt Office with self-financing (dnr 2021-00032), which will be considered in the provision decision for the 2021 financial year. As the decision on risk provisions concerns 2020, it has not been possible to include the decision on the funding of the foreign exchange reserves in the current assessment of the need for risk provisions.

The estimated need for a risk-absorbing buffer is therefore a moving 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 regarding important balance sheet items. However, the assumptions that the analysis must make for accounting purposes affect the assessed need for a risk-absorbing buffer.

Five years is seen 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.

The first model approach looks at three different scenarios for developments in the krona exchange rate and interest rates, in order to predict the consequences for the entire 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. 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.

In the most extreme scenario (scenario C in the figures in Appendix 1), the repo rate is 2.5 per cent at the turn of the year 2024-2025, US government bond yields are about 3 per cent, and the krona is over ten per cent stronger than in the initial position. The risk scenarios are to be seen as examples of scenarios that are possible, but are not the most likely scenarios. The starting-point is that the Riksbank shall be able to cope with such scenarios without excessively negative consequences for its financial standing.<sup>5</sup>

The time series model in the second model approach 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.

Finally, the measure of economic capital, which is only estimated one year ahead, 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.

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<sup>5</sup> 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.

Based on the probability distribution, a potential maximum loss (Value-At-Risk) at various probability levels is calculated.

These three models give different estimations of the risks (excluding credit risk), see Figure 1 in Appendix 1. This indicates that the losses five years ahead, over the 99-percent level (greatest loss for the 99-percent best outcomes), in the BVAR model will be very considerable. But the interest-rate and exchange-rate development that would be required for this outcome must be seen as very unlikely. The scenario analysis shows that less likely, but entirely possible, risk scenarios can lead to losses of between SEK 75 billion and SEK 110 billion five years ahead. This coincides with the estimations from the BVAR model that can be seen as more probable than the 99-percent level, which corresponds here to the 75- and 90-percent level in Figure 1. The Economic Capital model also indicates a similar risk picture, although in the shorter term.

The Riksbank's assets are of very good credit quality, which contributes to low credit risk. The limited credit risk that does arise comes primarily from lending to the Riksbank's monetary policy and expanded counterparties, and from holdings of securities. The lending is collateralised, which poses low credit risk. The credit risk from holdings of securities is limited as the holdings consist mostly of government bonds and covered bonds.

None of the models referred to above have a combined approach to 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 including credit risk separately. It indicates a credit risk one year ahead of SEK 3 billion with a 99-percent confidence level. However, the probability of credit losses of this magnitude materialising at the same time as the market risks is deemed to be low.

As the contribution of credit risk to the Riksbank's total financial risk is currently assessed to be small, no specific quantification of this risk is made in this assessment. The current estimation of the need for a stronger buffer does not therefore include the credit risk, which means that the decision on financial risk provisions for 2020 does not include it either. However, the Riksbank does not rule out the possibility of credit risk providing motivation for future decisions on provisions.

### **Need for a larger risk buffer**

To be able to determine whether the existing buffers are sufficient or whether the total risk-absorbing buffer needs to be increased with the help of risk provisions, it is calculated how the different components of the Riksbank's capital are affected by the potentially negative results.

According to all three model calculations, there is a risk of the potentially negative result leading to reported equity that is lower than the minimum level of SEK 60 billion. However, the Riksbank's assessment is that the most extreme outcomes of the time series model are unlikely and not suitable as a basis for assessing the need to increase the risk buffer. On the other hand, the less extreme estimations of the buffer requirement in the time series model (75 and 90-percent level) correspond approximately to the two risk scenarios. The Economic Capital estimations also show similar levels.

Figure 2 in Appendix 1 shows how much the risk buffer would have to increase according to the various calculations. The horizontal blue area indicates an interval for the required increase based on the risk scenarios (scenarios B and C). The need for an increased risk buffer lies in the interval of SEK 15 billion to SEK 50 billion, with the most unlikely losses according to the time series model excluded and the credit risk not included.

The conclusions from the calculations are summarised in Table 1 below.

### **Size of the year's provision**

The decision on the year's risk provision primarily takes the need to increase the risk-absorbing buffer into consideration, but can also consider the size of the result prior to the provision decision, and the effect that a risk provision has on the dividend to the state and on equity. It is possible to make a risk provision that is larger than the current year's reported result, the consequence of which is a negative reported result.

The preliminary reported result for the 2020 financial year is a profit of just over SEK 700 million before risk 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. As the Riksbank has had positive interest effects and negative exchange rate effects in 2020, the preliminary dividend-qualifying result is just over SEK 12 billion before provisions, which is twice the average of the past ten years.

As the need to increase the risk buffer is considerable, and because the dividend-qualifying result is unusually high, making a relatively large risk provision is now deemed justified despite an expected negative reported result for 2020. With a risk provision of SEK 5 billion, the preliminary reported result amounts to SEK –4.3 billion. The preliminary dividend-qualifying result is still positive at SEK 7.8 billion.

### **Effect of risk provisions on dividends**

A risk provision affects the dividend-qualifying result and the dividend to the state, in the short and the long term. Initially, the risk provision leads to lower dividends compared to what otherwise had been the case. This is because the dividend-qualifying result decreases when risk provisions are made. Due to the wording of the dividend principle, under which 80 per cent of the mean for the dividend-qualifying result of the past five years is distributed as dividend, the effect of the risk provision is spread over five years.

If provisions are made when the yearly results are high, and used when losses occur and the yearly results are therefore low, the decision of the Executive Board will contribute to risk provisions stabilising both the dividend-qualifying result and the dividends.

This year, the risk provision of SEK 5 billion means that the dividend for 2020 can be expected to fall from SEK 7.6 billion to SEK 6.8 billion.

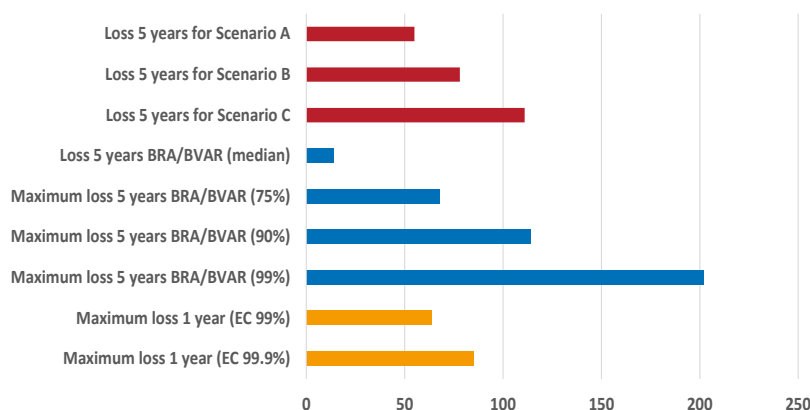
**Table 1. Summary of the assessment of the need for risk provisions**

Estimated minimum level of equity	SEK 60 billion
Available risk buffer	Just under SEK 20 billion + available revaluation accounts (51 for the gold-price risk, 21 for the interest-rate risk and 2 for the currency risks)
Estimated existing risks	Up to SEK 110 billion in potential losses, mostly related to interest-rate and exchange-rate changes
Need for a larger risk buffer	SEK 15-50 billion
2020 provision	SEK 5 billion



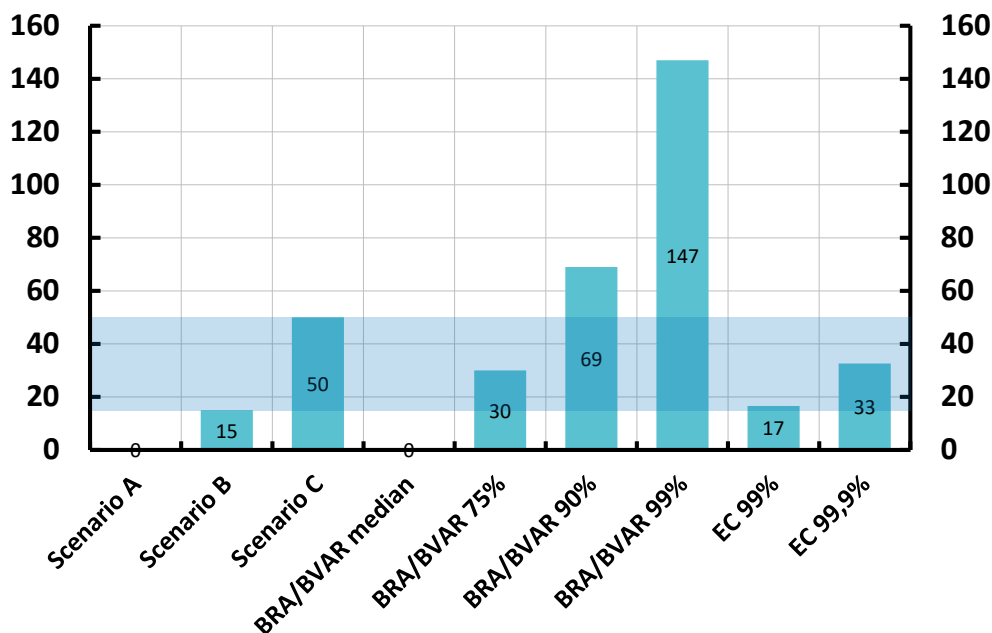
## Appendix 1: Figures for risk analysis

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



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 2029, published in September 2020. 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 reach around 2.5 per cent just over two years (B) and just less than five years (C) earlier than in scenario A. The 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. Note that these calculations are based on preliminary figures for the accounting year 2020.

**Figure 2. The need for a larger risk buffer five years ahead (one year for EC) so that equity does not fall below SEK 60 billion**



Note: The need for a larger risk buffer is based on how much lower equity will be compared with the minimum level for equity, for each risk measure respectively. The shaded area depicts the overall assessment of the need, expressed as the interval SEK 15-50 billion. See also the note on Figure 2. Note that these calculations are based on preliminary figures for the accounting year 2020.

## Appendix 2: Risk provisions when the reported result is zero or negative

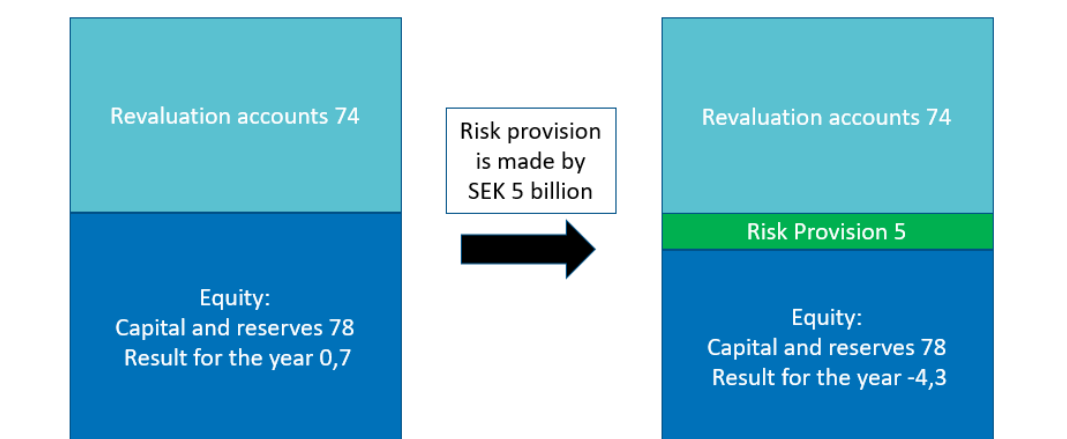
A risk provision reduces both the reported and the dividend-qualifying result, by the relevant provision amount. Risk provisions can be made regardless of the size of the reported result, but the effect on the balance sheet will be different depending on whether the provision for the financial year is larger or smaller than the reported result before provisions.

If the risk provision is smaller than the *reported result before provisions*, the *reported result after provisions* decreases, but is still positive. Instead of the profit of the year contributing to a larger dividend to the state and larger equity, it increases the risk provisions item on the balance sheet.

If the risk provision for the financial year is larger than the *reported result before provisions*, the *reported result after provisions* will be negative. The risk provision leads to a reduction in equity and an increase in the risk provisions item on the balance sheet. The provision reduces the dividend to the state, given that the average dividend-qualifying result over the past five years is not negative.

Depending on how the provision amount for a certain financial year relates to the reported result and the dividend-qualifying result, the provision may have different consequences for the development of equity and the total risk-absorbing buffer in the years ahead. In the absence of positive results, risk provisions in the short term lead to a redistribution from equity to provisions, but as the provisions also affect the dividends to the state, an increase in the total risk-absorbing buffer is achieved. The immediate change that occurs on the balance sheet when the risk provision is recorded, given the year's result and provision decision, is illustrated in Figure 3.

**Figure 3: The immediate effect on the distribution between different forms of capital (SEK billions)**



Note: The figure only illustrates the immediate effect of the recorded provision. The long-term effect of the provision on dividends to the state and total capital is not included here.