THE RIKSBANK'S FINANCIAL INDEPENDENCE

SOU 2007:51

To Mats Odell, Minister for Local Government and Financial Markets

On 27 April 2006 the government decided to appoint a Special Investigator to head a Commission of Inquiry to investigate issues related to the Riksbank's balance sheet structure, capital structure and its profit allocation. The Special Investigator shall submit proposals for the statutory regulation of the principles for allocating the Riksbank's financial result. Director General Ingrid Bonde was appointed Special Investigator.

On 30 May 2006 Chief Economist Martin Blåvarg, Doctor of Economics Lars Hörngren, Associate Judge of Appeal Gustaf Sjöberg and Professor Staffan Viotti were appointed special advisors. Director Åke Hjalmarsson and Desk Officer Marie Norman were appointed experts.

Bachelor of Science (Econ.) Karin Lundberg was appointed secretary until 12 January 2007. Since then Chief Economist Martin Blåvarg has been secretary.

The Commission of Inquiry herewith submits its report (SOU 2007:51) The Riksbank's financial independence.

A special opinion has been delivered by the experts Åke Hjalmarsson and Marie Norman.

Stockholm June 2007

Ingrid Bonde

Martin Blåvarg

Summary

Background

While the Riksbank is a government authority, it is different in many respects to other authorities. This is reflected by it being an authority responsible to Parliament; by its operational activities being governed by the Sveriges Riksbank Act; and that it is a legal entity in its own right with its own assets. The unique position of the Riksbank is because there are economic and political reasons for the central bank having substantial independence. This independence was strengthened with the comprehensive 1999 Riksbank reform, which led to the Riksbank today having statutory grounds for functional*, institutional and personal independence*. Functional independence is achieved through the statutory target that the Riksbank has for monetary policy. Institutional independence means a prohibition on giving the Riksbank instructions related to monetary policy issues. Personal independence means that members of the Riksbank's Executive Board have long terms of office; are covered by strict rules of disqualification; and have far-reaching protection against dismissal.

In addition, there is a need for *financial independence.* This means that the Riksbank should be able to fund its operational activities and fulfil its obligations, without requiring financial support from central government. Its financial independence is not currently regulated by law, as are the other forms of independence, and the Commission of Inquiry's (henceforth the Commission) terms of reference are to propose legislation that guarantees this financial independence.

A separate balance sheet is the basis of the Riksbank's financial independence

Currently, the Riksbank has a strong financial independence. This is based on the fact that the Riksbank has its own balance sheet, such that the bank receives revenues that more than cover the bank's operating costs. These revenues are founded on the Riksbank holding yield bearing assets, while not needing to pay interest on the most important items on the debit side of its balance sheet, currency in circulation and own capital. This Commission defines currency in circulation and own capital as *the Riksbank's cost-free capital*. The Commission considers that the Riksbank's financial independence should continue to be based on its balance sheet providing a large enough return.

Factors other than current operating costs must also be taken into account for this purpose. The Riksbank may incur costs in the form of losses in its operational activities. The risks identified by the Commission are credit risk arising from its task of providing emergency liquidity assistance, and the risk of losses in its asset management. There are certain other risks, but these are relatively small. The cost-free capital needs to be adequate to cover operating costs even after the Riksbank has suffered such losses.

The Riksbank is allowed to act as lender of last resort, providing emergency liquidity assistance (ELA) if this is required to protect the stability of the financial system, but only to banks which have liquidity problems and no solvency problems. These credits can give rise to losses. Both the extent and probability of these losses are very difficult to assess.

The Riksbank holds most of its assets in the foreign exchange reserve, comprising investments in foreign currency (and gold). The mismatch between the Riksbank's assets in foreign currency and the balance sheet's debit side in Swedish krona, generates financial risk, in that fluctuations in the exchange rate of the Swedish krona affect the value of the assets but not the value of the liabilities.

The foreign exchange reserve exists because the Riksbank may need to make foreign exchange interventions. The need for a foreign exchange reserve for this purpose is small given the current foreign exchange rate regime with its floating exchange rate. The probability that Sweden will, in the foreseeable future, switch to a fixed exchange rate, where foreign exchange interventions would have a greater likelihood, seems remote today. The risk of losses arising from foreign exchange interventions could mainly be associated with interventions carried out over a short period of time prior to entry into the Euro.

Foreign exchange interventions can be carried out without the Riksbank holding a large foreign exchange reserve; the reserve that results in today's open currency position given the structure of its balance sheet. Given this, and the limited need for foreign exchange interventions; and the substantial financial risk arising from the open currency position; this Commission believes that the Riksbank should neutralise currency risk in the foreign exchange reserve. This would reduce the Riksbank's need for cost-free capital. As it does not affect capital need, the Commission takes no view on whether neutralisation should be achieved by currency borrowing, positions in derivatives or by reducing the size of the foreign exchange reserve.

The Commission's proposals regarding the capital structure of the Riksbank

There are different ways of organising a central bank's operational activities and the structure of its balance sheet varies from country to country. No clear-cut conclusions can be drawn from the Commission's international comparison as far as Sweden is concerned. The cost of maintaining capital in the Riksbank is so low that there is no point in being restrictive about it. At the same time the Riksbank should not have more capital than necessary for its financial independence. It would be a more effective use of capital for central government to undertake to restore a certain level of lost capital, than for the Riksbank to maintain enough capital to cover even the most unlikely losses However, the Commission chooses not to propose a statutory recapitalisation rule, because the cost of maintaining capital in the Riksbank is low, and such a rule could, in principle, be suspect.

The Commission's analysis is based on estimating the size of the Riksbank's operating costs and the potential unforeseen costs related to certain risks, and on making an assessment of how much cost-free capital the Riksbank needs in order to cover these costs. This cost-free capital can consist of own capital and of currency in circulation. Currency in circulation gives rise to seigniorage, the earnings that are a consequence of currency in circulation not receiving interest, but can be invested in yield bearing assets. As a basis for revenue, own capital and currency in circulation are equivalent, however they do have somewhat different properties in other regards. These differences can influence how the Riksbank's capital structure is viewed. Thus analysing the similarities and differences has been one of the Commission's main tasks.

One of the differences is that currency in circulation is influenced by external factors, outside the Riksbank's control, because its size is determined by the public's demand for banknotes and coins. So currency in circulation can display considerable variation. When the Riksbank's cost-free capital consists of currency in circulation, the risk of reduced demand for cash must be taken into account. This is not the case if the cost-free capital consists of own capital.

Currency in circulation is booked as a liability item in the balance sheet. However, the book value of currency in circulation is not comparable to a liability of a corresponding value, as currency in circulation is not interest-bearing. Even if the Riksbank's own capital was completely expended, and the value of the assets was therefore lower than the book value of currency in circulation, i.e. negative own capital, the Riksbank would still have long-term survivability. As long as the value of the discounted cash flows generated by the Riksbank's assets is greater than the discounted value of future costs, the Riksbank has a positive net worth. This net worth can be positive even when own capital is negative.

The Commission has also evaluated alternative methods of structuring the Riksbank's balance sheet. For example whether the Riksbank should hold the foreign exchange reserve and whether currency in circulation should make up part of the balance sheet. The international comparison carried out by the Commission shows that there are alternative ways of organising a national central bank (NCB) and its balance sheet. However, the international examples have not resulted in the Commission proposing any changes along these lines.

The Commission's analysis of the properties of currency in circulation shows that in most regards it is equivalent to own capital as a source of funding for the Riksbank, but that there are still some problems in relying on it. This has caused the Commission to submit two alternative proposals for capital structure; one in which currency in circulation is utilised as cost-free capital and the other in which only own capital is utilised. The choice between the two alternative proposals is therefore largely a matter of whether currency in circulation can be seen as an adequate alternative to own capital.

Alternative 1 means that the Riksbank's right to issue banknotes and coins is used to fund its operational activities. Currency in circulation constitutes a cost-free capital which more than covers the needs identified by the Commission. According to the Commission's calculations the Riksbank needs a cost-free capital of between SEK 60 and 74 billion. Today, currency in circulation is approximately SEK 110 billion. Of course, the basis of this assessment could change were the volume of currency in circulation to change. However, in the opinion of the Commission such a change is a long way off, and will happen in such a way that there will be plenty of time for the political system to react. Despite currency in circulation being sufficient cost-free funding for the Riksbank's operational activities, the Commission believes that it should also be provided with a relatively small amount of own capital. Own capital in its traditional sense has the advantage of being a generally accepted proof of financial strength, which can be an advantage internationally as well as with the Swedish public. Furthermore, there are technical advantages with such a system. The Commission's proposal is that own capital should be made up of a primary capital, regulated by law, and initially amounting to SEK 10 billion. This proposal would mean that approximately SEK 50 billion could be transferred from the Riksbank to central government.

The size of primary capital, which must be adjusted upwards with changes in the consumer price index, will form the basis of calculating profit distribution from the Riksbank. If the primary capital is less than the legally necessary amount, profit distribution may not take place. Otherwise, the entire profit shall be distributed to central government.

Alternative 2 has as its basis that currency in circulation is not suitable as cost-free capital as it is difficult to explain in a credible fashion that currency in circulation can bear potential losses and thereby guarantees the Riksbank's financial independence. This alternative also means that currency in circulation is considered a debt to central government for which the Riksbank pays interest. This interest should correspond to a short-term risk-free interest rate in Swedish krona, e.g. the repo rate. In this alternative the cost of production for banknotes and coins, currently borne by the Riksbank, should be deducted from the interest it pays to central government. Thus the capital need for current costs is lower in this alternative, this is because in alternative 1 there must also be assets providing a return to fund the costs of production for banknotes and coins.

In this alternative the Riksbank's total need for cost-free funding must be covered by own capital. This Commission estimates the total capital needs to be SEK 52 – 63 billion. So this capital need is relatively close to the level of own capital that the Riksbank has today (SEK 58 billion).

In this alternative the proposal is based on the Riksbank having a level of own capital of SEK 60 billion. With regards profit distribution, the same principle as in alternative 1 should apply, i.e. all profit augmenting own capital above the target level of SEK 60 billion should be distributed. As in alternative 1 this level should be index linked and written up in line with inflation. In this alternative the balance sheet total will be about the same as it is today.

If the Riksbank, in accordance with the proposal in alternative 1 distributes about SEK 50 billion to central government, it will need to sell a corresponding value of currency assets. In order for this to have a neutral effect on the exchange rate of the Swedish krona, the distribution will need to take place over a long period of time, or in some other way that will not affect the exchange rate.

From a central government finance perspective both proposals are considered equal.

The Commission's proposals regarding the asset management of the Riksbank

With the neutralised foreign exchange reserve advocated by the Commission, the Riksbank will have different assets to administer than today's foreign currency assets. The Commission does not believe that these assets should be managed in such a way that new financial risks arise, leading to new capital needs. A certain risk tolerance would probably lead to a better return, benefiting central government and, by extension, taxpayers. It is very important for the terms of reference of the Commission (proposing rules and a capital which guarantees the Riksbank's financial independence) that the Riksbank can fulfil its obligations with the capital it has, even in improbable situations. On this basis the Commission believes that the Riksbank's assets should be invested at low risk.

So the Commission proposes that the currency risk in the Riksbank's foreign exchange reserve be neutralised. Regardless of how neutralisation is carried out (for example by selling currency assets or using derivative instruments) neutralisation will mean an increased demand for Swedish krona. This must occur gradually if these operations are not to have the same effect of strengthening the Swedish krona as a foreign exchange intervention. The Commission believes that this transition could last several years. The proposed statutory protection for the Riksbank's capital structure can still be introduced before the transition has been carried out. The proposed legislation is not dependent on the full neutralisation of the currency risk. The reason for this is that the risk of losses due to changes in the foreign exchange reserve is considered acceptable in the short-term within the framework of the cost-free capital set off against foreign exchange intervention losses.

The Commission's proposal means that the Riksbank will become a substantial investor in assets in Swedish krona. This will have two important consequences. It will mean an increased demand for Swedish government securities. This could be handled if the Swedish National Debt Office were to be tasked with reducing its currency debt, so that the effect of the Riksbank reducing its currency position was neutralised. Also the conflict of interest arising from the Riksbank becoming a substantial investor in Swedish government securities, and at the same time regulating the short-term fixed income market, will need to be managed.

Statutory proposal

Statutory proposal for the Commission's alternative 1

Draft act on amending Sveriges Riksbank Act (1988:1385)

Regarding the Sveriges Riksbank Act (1988:1385) the following changes are prescribed
in part that the heading of Chapter 8 shall be worded "Asset management and other tasks" and the heading of Chapter 10 shall be worded "Fund assets, allocation of profit, budget and discharge from liability"
in part that Chapter 10, section 4 shall be repealed,
in part that the current Chapter 8, section 1 shall be designated Chapter 8, section 4, the current Chapter 8, section 2 shall be designated Chapter 8, section 5, the current Chapter 8, section 3 shall be designated Chapter 8, section 6, the current Chapter 8, section 4 shall be designated Chapter 8, section 7, the current Chapter 8, section 5 shall be designated Chapter 8, section 8, the current Chapter 8, section 6 shall be designated Chapter 8, section 9, the current Chapter 10, section 1 a shall be designated Chapter 10, section 6, the current Chapter 10, section 2 shall be designated Chapter 10, section 7, the current Chapter 10, section 3 shall be designated Chapter 10, section 8, the current Chapter 10, section 5 shall be designated
Chapter 10, Section 9,
in part that the new Chapter 10, section 1 shall have the following wording,
in part that seven new paragraphs shall be inserted into the Act, Chapter 8, sections 1-3, Chapter 10, sections 2-5 with the following wording

Current wording	*Proposed wording*
	Chapter 8
	Section 1 The Riksbank holds assets in order to be able to carry on its tasks pursuant to this Act and in order to be able to finance its operational activities independently.
	Section 2 The Riksbank's assets shall, taking into account the various purposes of the asset holdings, be managed so that a good return is achieved while at the same time the risk inherent in this management is taken into account. This management shall also take into consideration the Riksbank's position as a central bank.
	Section 3 The Executive Board shall

establish guidelines for the management of financial assets.

Chapter 10

Section 1 The Riksbank shall have capital in an amount of one thousand million kronor, a reserve fund of 500 million kronor and a contingency fund.

Section 1 The financial independence of the Riksbank is guaranteed by it having the right to issue banknotes and coins, and in addition having primary capital amounting to at least SEK 10 billion.

Section 2 The requisite amount of primary capital pursuant to Section 1 shall be adjusted upwards annually by a factor corresponding to the change in the consumer price index, calculated as the ratio between the consumer price index for the month of October in the year before the current financial year and the consumer price index for the month of October 1992.

Section 3 Should primary capital be less than that set out in Sections 1 and 2 no transfer to central government may take place.

Section 4 The profit for the year shall be allocated as follows.

1. Provision shall be made to the primary capital so that it amounts to that contained in Sections 1 and 2.
2. That remaining after any provision pursuant to point 1 may be distributed to central government.

Section 5 The Riksbank's Profit and Loss Account and Balance Sheet are approved by the Riksdag, which also determines the allocation of the Riksbank's profit. The Riksdag determines whether the General Council shall be discharged from liability for its activities and the Executive Board for its management of the Riksbank. Discharge from liability may only be denied if there are reasons to make claims of financial liability against a member of the General Council *or the Executive Board, or if the member should be prosecuted for criminal actions in connection with his assignment or employment.*

This Act shall enter into force on 1 January 2009.

Statutory proposal for the Commission's alternative 2

Draft act on amending Sveriges Riksbank Act (1988:1385)

Regarding the Sveriges Riksbank Act (1988:1385) the following changes are prescribed *in part* that the heading of Chapter 8 shall be worded "Asset management and other tasks" and the heading of Chapter 10 shall be worded "Fund assets, contribution, allocation of profit, budget and discharge from liability"
in part that Chapter 10, section 4 shall be repealed,
in part that the current Chapter 8, section 1 shall be designated Chapter 8, section 4, the current Chapter 8, section 2 shall be designated Chapter 8, section 5, the current Chapter 8, section 3 shall be designated Chapter 8, section 6, the current Chapter 8, section 4 shall be designated Chapter 8, section 7, the current Chapter 8, section 5 shall be designated Chapter 8, section 8, the current Chapter 8, section 6 shall be designated Chapter 8, section 9, the current Chapter 10, section 1 a shall be designated Chapter 10, section 7, the current Chapter 10, section 2 shall be designated Chapter 10, section 8, the current Chapter 10, section 3 shall be designated Chapter 10, section 9, the current Chapter 10, section 5 shall be designated
Chapter 10, Section 10,
in part that the new Chapter 10, section 1 shall have the following wording,
in part that eight new paragraphs shall be inserted into the Act, Chapter 8, sections 1-3, Chapter 10, sections 2-6 with the following wording

Current wording	*Proposed wording*

Chapter 8

Section 1 The Riksbank holds assets in order to be able to carry on its tasks pursuant to this Act and in order to be able to finance its operational activities independently.

Section 2 The Riksbank's assets shall, taking into account the various purposes of the asset holdings, be managed so that a good return is achieved while at the same time the risk inherent in this management is taken into account. This management shall also take into consideration the Riksbank's position as a central bank.

Section 3 The Executive Board shall establish guidelines for the management of financial assets.

Chapter 10

Section 1 The Riksbank shall have capital *in an amount of one thousand million kronor, a reserve fund of 500 million kronor and a contingency fund.*

Section 1 The Riksbank shall have a primary capital *amounting to at least SEK 60 billion*.

Section 2 The requisite amount of primary capital pursuant to Section 1 shall be adjusted upwards annually by a factor corresponding to the change in the consumer price index, calculated as the ratio between the consumer price index for the month of October in the year before the current financial year and the consumer price index for the month of October 1992.

Section 3 Each year the Riksbank shall pay a contribution to central government calculated in accordance with an interest rate corresponding to the repo rate on the nominal amount of currency in circulation.

Section 4 Should primary capital be less than that set out in Sections 1 and 2 no transfer to central government may take place.

Section 5 The profit for the year shall be allocated as follows.

1. Provision shall be made to the primary capital so that it amounts to that contained in Sections 1 and 2.
2. That remaining after any provision pursuant to point 1 may be distributed to central government.

Section 6 The Riksbank's Profit and Loss Account and Balance Sheet are approved by the Riksdag, which also determines the allocation of the Riksbank's profit.

The Riksdag determines whether the General Council shall be discharged from liability for its activities and the Executive Board for its management of the Riksbank. Discharge from liability may only be denied if there are reasons to make claims of financial liability against a member of the General Council or the Executive Board, or if the member should be prosecuted for criminal actions in connection with his assignment or employment.

This Act shall enter into force on 1 January 2009.

1. The terms of reference and work of the Commission

1.1. The terms of reference of the Commission

1.1.1. Background

While the Riksbank is a government authority, it is different in many respects to other authorities. The Riksbank is separated from central government in several ways. This is reflected in the Riksbank being an authority responsible to Parliament; by its operations being governed by the Sveriges Riksbank Act instead of by instructions and by letter of appropriation; and by it being a legal entity in its own right with its own assets. The unique position of the Riksbank among authorities is because there are economic and political reasons for it to have substantial independence. This independence was significantly strengthened by the comprehensive reform of the Riksbank undertaken in 1999.

This independence has several dimensions. We can identify a *functional*, an *institutional* and a *personal* independence, all of which are supported by current legislation. Functional independence relates to the statutory target that the Riksbank has for monetary policy. Institutional independence means a prohibition on giving the Riksbank instructions related to monetary policy issues. Personal independence means that members of the Riksbank's Executive Board have long terms of office; are covered by strict rules of disqualification; and have far-reaching protection against dismissal. In addition there is *financial* independence; this means that the Riksbank should be able to finance its ongoing operations by administering assets which provide a return and should not be dependent on appropriations from central government. With the current balance sheet this financial independence is well provided for, however, it is not regulated by law in the same way as the other forms of independence.

Over time the Riksbank's assets have generated a return which has proved fully adequate to finance its ongoing operations. When the Riksbank's independence was strengthened in conjunction with the 1999 Riksbank reform, financial independence was not a widely discussed issue.

There was a greater awareness of this financial independence for the first time when Parliament decided on extraordinary dividends from the Riksbank for the fiscal years 2000 and 2001. Critics of these decisions, among them the Riksbank (Executive Board), were of the opinion that its financial independence could be called into question if Parliament, through extraordinary parliamentary resolutions, could require funds from the Riksbank in this way. The critics felt that the law should state how the Riksbank's profit should be allocated and the optimum size of the Riksbank's own capital.

Financial independence is not a Swedish invention; it is also a constituent part of EU cooperation in that there is a requirement in the EU Treaty for national central banks to be independent. This independence is monitored within the framework of the convergence reports issued by the European Central Bank (ECB) and the EU Commission every other year. These reports track whether countries are meeting the conditions of the EU Treaty aimed at creating independent central banks etc. In the 2002 and 2004 convergence reports the Commission and the ECB joined with critics of the special dividends, stating that the Riksbank's financial independence should be reflected in the Sveriges Riksbank Act.

This Commission of Inquiry originates from the criticism aimed at the absence of regulations guaranteeing the financial independence of the Riksbank. Even if this evaluation of financial independence is mainly targeted at participation in the Euro, there are grounds for ensuring that the Riksbank is financially independent in a way that cannot be called into question. In addition to this, guaranteed financial independence also strengthens the credibility of the Riksbank in the current foreign exchange and monetary policy regime.

1.1.2. The directives

The directives highlight the formal and actual autonomy of the Riksbank, stressing financial independence as an aspect of independence and defining it as the Riksbank having the ability to meet its obligations without being dependent on appropriations from Parliament.

The government's directive to the Commission (Dir. 2006:50) states that the Special Investigator shall

> *"submit proposals for the statutory regulation of the principles related to the allocation of the Riksbank's financial result. These proposals shall be founded on an analysis of:*
>
> - *the amount of own capital needed by the Riksbank to fulfil its tasks*
> - *the profit allocation and balance sheet systems applied by a selection of other central banks both in and outside the EU*
> - *the future balance sheet structure, capital structure and profit allocation of the Riksbank*
> - *the effects on both the Riksbank and the Treasury of different profit allocation systems"*

1.2. Work of the Commission

Work was started in June 2006. The Commission has held 11 meetings with its special advisors and experts.

To obtain an international understanding, and gather information about how issues associated with the capital structure and profit allocation of central banks are handled in other countries, a questionnaire was sent to the central banks in Norway, Denmark, Finland, the Netherlands, Germany, the United Kingdom, Canada and New Zealand.

In December 2006 the Commission reported on its work and presented its key conclusions in meetings with the Parliamentary Committee on Finance, with the General Council of the Riksbank and with the Executive Board of the Riksbank. In the spring of 2007 there were further consultations with the Riksbank. While officials have been given the opportunity to submit their views to the draft report the Commission has given an account of its findings and proposals to the General Council of the Riksbank. The Executive Board of the Riksbank has decided to await the submission of the report until presenting its views. Throughout the Inquiry the secretary to the Commission has also gathered information from the Riksbank. The material to which the Commission has had access includes an internal model for calculating risk in the Riksbank balance sheet.

The Commission requested an extension to its assignment in April 2007. This extension was granted.

2. Background

2.1. Current system

Current regulation of the Riksbank's own capital is contained in Chapter 10, section 1 of the Sveriges Riksbank Act (1988:1385) and reads:

> *"The Riksbank shall have capital in an amount of one thousand million kronor, a reserve fund of 500 million kronor and a contingency fund."* [1]

This regulation does not mean in practice that the size of the Riksbank's total own capital is set, as the contingency fund can vary in size significantly.

Current legislation related to the allocation of the Riksbank's profit contains no material rules; it only says that each year Parliament must determine how the Riksbank's profit is to be allocated, following proposals from the General Council of the Riksbank[2]. In order to create predictability in this process the General Council of the Riksbank drew up profit distribution guidelines in 1989, guidelines that were approved by Parliament. The last time these guidelines were revised was in conjunction with the financial statement for 1999 (Report 2001/02:FiU23).

According to these guidelines, each year 80 percent of the average of the past five years' financial results, excluding the exchange rate effect and gold valuation effect and before allocation to general reserves, should be paid to central government. Between 1988 and 2005 this had meant payments to the treasury of between SEK 5 and 10 billion per year, which fell for the first time in 2006 to just under SEK 5 billion (see Figure 1).

[1] Latest wording 1998:1412.

[2] Contained in Chapter 10, sections 3 and 4 of the Sveriges Riksbank Act (1988:1385).

Figure 1. *Transfers to the treasury and amounts on which transfers are based for the Riksbank*

With two exceptions the General Council of the Riksbank has followed these guidelines in their proposals to Parliament for allocating the Riksbank's financial result. For each of the fiscal years 2000 and 2001 the General Council of the Riksbank proposed dividends of SEK 20 billion over and above the amount to be paid according to the guidelines. In conjunction with the adoption by Parliament of the profit allocation for the fiscal year 2001, the Parliamentary Committee on Finance made it clear that, after this dividend, a long-term, balanced consolidation level had been achieved, and that the applicable guidelines for profit allocation should be applied in future.[3] This was also the case.

2.2. EU criticism of the current rules

The Convergence Reports, published every other year by the ECB (the European Monetary Institute, EMI, prior to 2000) and the EU Commission, have on three occasions remarked on Sweden's legislation related to the financial independence of the Riksbank. In the EMI's convergence report of 1998 it was pointed out that "if Parliament were to deviate from the objective criteria to which it has adhered in the past, this could affect the Bank's financial independence. A statutory safeguard clause should therefore be considered in order to ensure that Parliament's power may not impede the proper performance of the Bank's ESCB-related tasks." However, the EMI predicted that this could be resolved through the revision of the Sveriges Riksbank Act which was underway.

[3] Parliamentary Committee on Finance report 2001/02:FiU 23 "Monetary policy and the administration of the Riksbank 2001"

The Convergence Reports for 2000 contained no remarks on the subject. However, the 2002 Convergence Report from the commission (like that from the ECB) raised the issue once more, referring to the extraordinary payments for the fiscal years 2000 and 2001: "Developments in 2001 and 2002 have made evident the absence of detailed legislation on profit allocation and extraordinary payments of the Riksbank to the Treasury, safeguarding that the Riksbank retains the financial means necessary for implementing all ESCB-related tasks." The issue is brought up again in the 2004 Convergence Reports of the Commission and the ECB. The ECB writes:

> *"Certain provisions of the Sveriges Riksbank Act are still not in line with the Treaty and the Statute; in particular: provisions on financial independence. (---) The ECB notes that the Treaty has obliged Sweden to adopt national legislation for this purpose since 1 June 1998, and that over the past few years no legislative action has been taken by the Swedish authorities to remedy the incompatibilities described in this and previous reports."*

This criticism is repeated in the Convergence Report for 2006.

The provision in the Treaty on which the criticism is based is Article 108, which reads as follows:

> *"When exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty and the Statute of the ESCB, neither the ECB, nor a national central bank, nor any member of their decision making bodies shall seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Community institutions and bodies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision making bodies of the ECB or of the national central banks in the performance of their tasks."*

Many other countries within the ESCB do not have a statutory safeguard clause to guarantee financial independence. It is reasonable to assume that it was the extraordinary payments of 2001 and 2002 which gave rise to the criticism from EU organisations. Had the current profit allocation rule been applied without these dividends, the EU organisations had in all probability not criticised the Swedish legislation.

2.3. The Riksbank's operational activities

2.3.1. The Riksbank's tasks

The tasks of the Riksbank are regulated in the Instrument of Government and in the Sveriges Riksbank Act. The Instrument of Government sets out that the Riksbank *a) is responsible for monetary policy* (Chapter 9, section 13) and *b) the Riksbank alone shall have the right to issue banknotes and coins* (Chapter 9, section 14). The Sveriges Riksbank Act specifies the Riksbank's responsibility for monetary policy. Here it states that "the objective of the Riksbank's activities shall be to maintain price stability." (Chapter 1, section 2). It also states that "the Riksbank shall follow developments on the foreign exchange and credit markets and implement necessary monetary policy measures." (Chapter 6, section 2). In addition the Act sets out a further area of responsibility, namely that *c) The Riksbank shall also promote a safe and efficient payments system* (Chapter 1, section 2). Within the framework of this area of responsibility is also the responsibility for issuing emergency liquidity assistance, specified in more detail below. The Riksbank "may only conduct, or participate in, such activities for which it has been authorised by Swedish law" (Chapter 1, section 1).

The Riksbank is responsible for monetary policy and more specifically for maintaining price stability. The Riksbank's interpretation of the price stability objective is that inflation should be low and stable. The Riksbank has defined the objective of price stability as an increase in the consumer price index (CPI) of two percent annually. Around this target a range of plus or minus one percentage point has been specified. To achieve this objective the Riksbank determines a suitable level for the interest that the banks pay when they borrow from the Riksbank, i.e. the repo rate. Decisions related to the repo rate are based on the comprehensive analysis of macroeconomic conditions and developments in financial markets, in Sweden and internationally. The practical implementation of monetary policy means that the Riksbank undertakes monetary policy market operations in the form of weekly repo transactions with the banks.

The Riksbank is also prepared to carry out currency interventions for monetary policy reasons. This means that the Riksbank is prepared to buy and sell currency on the market in order to affect the value of the Swedish krona relative to other currencies. However, the Riksbank does not decide whether a fixed or floating exchange rate is to be applied. This decision on the exchange rate regime is taken by the government. Previously the Riksbank made this decision. However, with the reform of the Riksbank at the end of the 1990's this task was transferred to government.

Not only does the Riksbank have the right to issue banknotes and coin, it is also responsible by law for the country's supply of banknotes and coin (Chapter 5, section 3). This responsibility is also clearly linked to the Riksbank's accountability for the payment system and can therefore be viewed as part of this area of responsibility. Much of the practical work on these issues is handled by the banks, however, the Riksbank, as the formal issuer of banknotes and coin, has certain costs for this task and can profit from the revenue that this activity brings in.

The Riksbank's responsibility for encouraging a reliable and efficient payment system can be divided into two different areas of responsibility; issues of stability and the payment system. The Riksbank continuously follows developments on the financial markets and assesses the risk of problems in the major Swedish banks and in the essential financial infrastructure. The background to this is that a problem in one of the country's major banks could pose a risk of interfering with the basic function of payment transfer services and credit supply. The Riksbank is also responsible for providing emergency liquidity assistance, i.e. acting as the Lender of Last Resort[4]. To support the payment system the Riksbank provides its own real time settlement system (RIX)[5], which is Sweden's central payment system.

In practice the Riksbank also carries on extensive asset management. This is because the liability item constituted by currency in circulation, along with own capital held by the Riksbank, must be invested in some type of assets. Currently the Riksbank invests most of its balance sheet total in currency assets.

Other activities carried on by the Riksbank are international cooperation and some statistical work.

2.3.2. The Riksbank's governance

The governance of the Riksbank has been formulated to be compatible with the fundamental requirement that central banks be autonomous and independent, which is now the ambition of many developed countries, and which is described in more detail in Chapter 5.

Pursuant to Chapter 9, section 13 of the Instrument of Government, the Riksbank is an authority responsible to Parliament. The Riksbank has an eleven-member General Council elected by Parliament. The Riksbank is managed by an Executive Board, which is appointed by the General Council. This section also states that the General Council may dismiss a member of the Executive Board from their appointment only if they no longer meet the requirements made of them to carry out their duties or they if have been guilty of serious misconduct.

In accordance with Chapter 1 section 4 of the Sveriges Riksbank Act the Executive Board is to consist of six members, appointed for a period of six years. The General Council appoints the Chairman of the Executive Board, who at the same time shall be the Governor of the Riksbank.

The Riksbank may only carry out tasks specified in law. This is one way of clarifying and limiting its operational activities, which is motivated by the Riksbank having been granted significantly greater independence than other authorities.

[4] This task is regulated in Chapter 6, section 8, of the Sveriges Riksbank Act.
[5] The basis of this can be found in Chapter 6, section 7, of the Sveriges Riksbank Act.

2.4. The Riksbank’s balance sheet

2.4.1. Overview

Table 1 shows the Riksbank’s balance sheet at the end of 2006.

Table 1. *The Riksbank’s balance sheet on 31 December 2006*

Assets	Million SEK	Per cent	**Liabilities**	Million SEK	Per cent
Gold	22 222	11,1%	Currency in circulation	112 380	56,0%
Foreign currency assets	162 292	80,9%	FX repo transactions	13 906	6,9%
Claims on IMF	4 892	2,4%	Other liabilities and provisions	3 265	1,6%
Monetary policy repo transactions	7 088	3,5%	Revaluation accounts	8 488	4,2%
Other	4 191	2,1%	Own capital	54 769	27,3%
			Annual profit	7 877	3,9%
Total	200 685	100,0%		200 685	100,0%

The Riksbank’s assets are predominantly in foreign currency and gold - the foreign exchange reserve (92 percent). Currency assets consist of securities with high credit worthiness in foreign currency and investments in foreign banks. The currencies in which there were investments at the end of 2006 were: Euro (50 percent), US dollars (20 percent), Sterling (10 percent), Norwegian krona (10 percent), Australian dollars (5 percent) and Canadian dollars (5 percent).[6] Gold made up 11 percent of the balance sheet.

Monetary policy lending being carried on in the form of repo transactions with Swedish banks[7] makes up a limited component of the balance sheet (3.5 per cent). In addition, the Riksbank has claims on the International Monetary Fund (IMF), corresponding to 2.4 percent of the balance sheet total. For some of these claims there is a counterpart on the liabilities side of the balance sheet (in the table part of the item “Other liabilities and provisions”), which is why the net position is somewhat lower than 2.4 percent. Other assets include accruals and prepaid expenditure and fixed assets.

Over half of the liabilities side of the balance sheet consists of currency in circulation, which makes up a liability item in the balance sheet (this is discussed in detail in the following section). Within the framework of the management of the foreign exchange reserve the Riksbank may enter into repo transactions. This means that the Riksbank ”lends” securities in its own asset base and receives a cash payment. This is reported as a form of deposit in the balance sheet, i.e. as a liability. At the end of 2006 this corresponded to 7 percent of the balance sheet total. Other liabilities and provisions are limited in extent (1.6 percent of the balance sheet total). These repo transactions should be seen as a part of the management of the foreign exchange reserve, undertaken in order

[6] The currency mix reported here reflects the currency position of the Riksbank, taking into account both positions in derivatives and repo transactions on the passive side (see next footnote). It is somewhat different to the portfolio of assets reported gross on the asset side of the Riksbank’s balance sheet.
[7] Repo transactions are reported as lending (with securities as collateral), despite this formally being a repo transaction. This is because repo transactions have the same financial properties as a collateralised loan, despite them being not considered legally as loans.

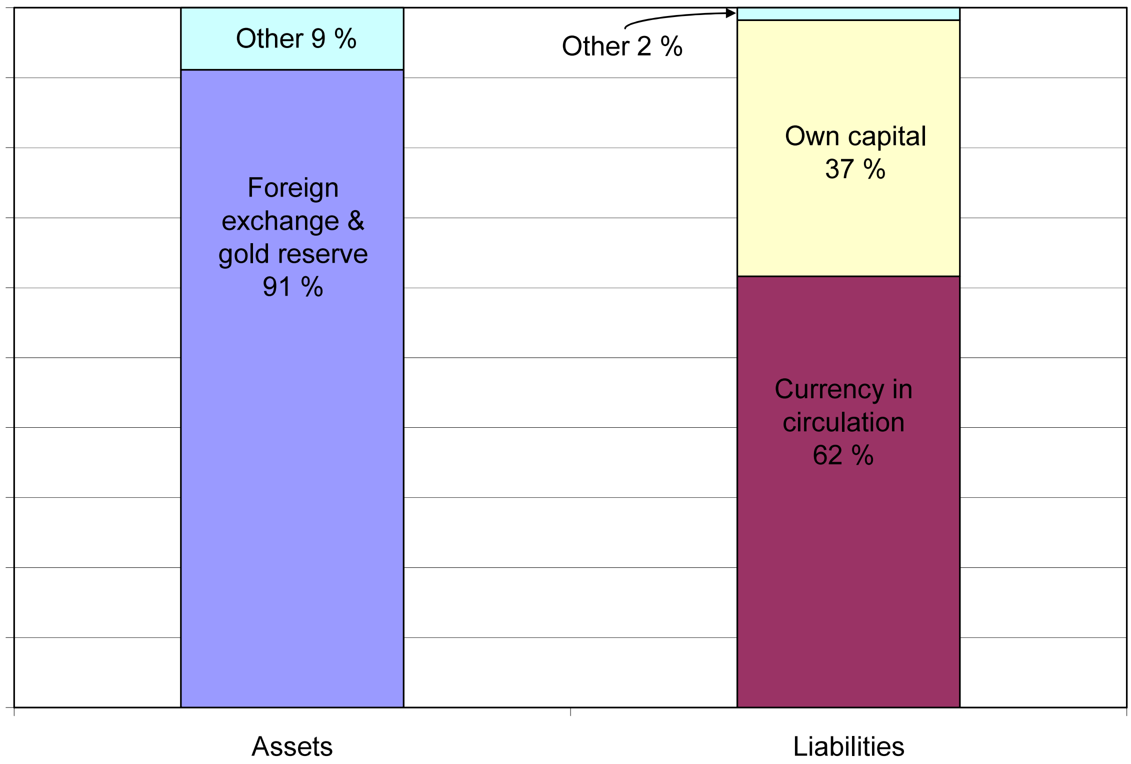
to increase the return on the asset portfolio. This business activity "inflates"[8] the balance sheet to a certain extent.

Own capital, including annual profit was 31 percent of the balance sheet total. The remaining item on the liabilities side, revaluation accounts, consists of unrealised profits in foreign securities and gold. The Riksbank marks its assets to market, but in accordance with the accounting principles applied, may not carry over unrealised profit to this years profit and own capital making them distributable. On the other hand, unrealised losses are reported against own capital, if they exceed the accumulated profit in the revaluation accounts. In general the accounting principles are governed by the collective rules for the EU national central banks in the European System of Central Banks (ESCB), of which the Riksbank is one. The revaluation accounts are bond specific in such a way that unrealised losses in one bond may only be carried over against previously unrealised profits in the same bond. This means that unrealised losses can affect net income to a relatively large degree, even when there are unrealised profits in the revaluation accounts. At the end of 2006 most of the revaluation accounts could be assigned to unrealised profits in gold (87 percent).

For the purposes of analysis by this Commission there is cause to simplify the balance sheet and focus on components of a size and significance such that they are critically important to the structure of the Riksbank's balance sheet and its financial independence. Figure 1 shows such a simplified picture of the balance sheet.

[8] By "inflate" we mean that when the Riksbank enters into a repo transaction of this type it increases its liabilities, in the form of an increase in the item covering repo transactions in foreign currency, as well as the corresponding increase in assets when payment for the repo transactions is converted into the purchase of new securities. Typically the profit from this type of transaction is small, just a few points, but because the transaction expenses and risk (when handled correctly) are low, there are good reasons to carry on this type of activity when one has a substantial portfolio of securities like the Riksbank.

Figure 2. Simplified picture of the Riksbank's balance sheet at the end of 2006



At present the currency and gold reserve is the asset base that generates returns for the Riksbank and is the basis of the Riksbank's ability to fund its activities and remain financially independent. It is not self evident for the Riksbank to invest all of its capital in currency assets (over and above the smaller asset items left out for the time being). Nevertheless, until now the Riksbank has chosen to place its available capital in these assets. The need for the foreign exchange reserve, its size and the level of risk it contains are discussed in more detail in Chapter 6.

In the Figure the revaluation accounts have been included in own capital. The reason for this is that, in principle, because they can be used to cover certain foreign exchange losses, the revaluation accounts constitute risk-bearing capital. The accounting restrictions contained here have only a minor bearing on the essential argument of this Commission (see further Chapter 6). This means that own capital, as defined by the Commission, was SEK 58 billion, after the deduction of the dividend of almost SEK 5 billion.

The item currency in circulation is, in many respects, unique, and there is good reason to discuss in more detail the properties of this item on the liability side of the balance sheet and its significance to the Riksbank. This is done in the next section. After that the chapter ends with some definitions. These are important if the Commission is to have a functional and understandable conceptual framework for the Commission's assignment, which is to analyse how the Riksbank's financial independence should be guaranteed.

2.4.2. Currency in circulation

Currency in circulation is reported as a liability item in the Riksbank's balance sheet. However, from a financial point of view it is not necessarily clear that currency in circulation should be seen as a liability for the Riksbank. One reflection of this is that currency in circulation has no interest cost for the Riksbank. For this reason there is cause to discuss, in fundamental terms, the economic properties of currency in circulation and how it affects the situation of the Riksbank and its financial independence.

In order to understand the current situation it is necessary to provide a historical perspective. When banknotes were first used (in Sweden in the 17th century), these were legally debt instruments. The holder of such a debt instrument could redeem it for metal coin (gold, silver or copper), i.e. a banknote was a claim on an asset with a real value. Because of this the central bank was forced to hold reserves in the form of metals so that it could change banknotes for coin on demand. Until 1931 the Riksbank was liable to redeem banknotes for gold coin, and as long as this was the case banknotes could be viewed as a real claim on the Riksbank. Under the Bretton Woods system there was an indirect link between banknotes and gold because the American central bank had pledged to redeem dollar banknotes for gold and the Swedish krona was tied to the dollar through a fixed exchange rate. Nowadays all such links are gone.

Despite this, private individuals and companies are prepared to hold banknotes. The explanation for this is that the holder knows that the banknotes are accepted as legal tender. This means that banknotes can be exchanged for all types of goods and services, without any significant transaction expenses. The use of banknotes as a means of payment can be regarded as a convention. It is maintained because when a large group of people start using a certain type of "goods" as a medium of exchange, it is efficient to continue using it.

From this perspective, banknotes have a value primarily because they facilitate the purchase of goods and services. This can be defined as a *transaction motive* for holding banknotes. As long as citizens have confidence that, in the long term, they will still be able to use banknotes in exchange for about the same amount of goods and services as they do today, they will also be prepared to use banknotes for savings. Hence there is also a *savings motive* for holding banknotes.

Because banknotes do not have a direct yield, the willingness to hold banknotes is dependent on the interest that citizens can receive on other assets. High interest rates and high inflation, which reduce the value of banknotes in terms of goods and services, therefore reduce the demand for banknotes. However, experience shows that very high rates of inflation are required before banknotes are displaced as a means of payment. This illustrates the power of the convention of using banknotes as legal tender.

It would not have been possible for the current system to have become established unless the issuer of the banknotes had initially been prepared to redeem them for gold coin. However, when the convention has become established the need for such a link ceases to exist, and the demand for banknotes is based on confidence in their value as a means of transaction and savings.

From an economic perspective this is more efficient as the central bank need not store a large amounts of gold in its vaults. The gold can then be used in other parts of the economy where it will provide greater benefit (or at least give more pleasure).

Abandoning gold has had even more fundamental consequences for the financial position of the central bank. Because banknotes are only exchangeable for other banknotes, the central bank need not hold gold in reserve in any relation to currency in circulation. Instead it can invest the equivalent value of currency in circulation into assets which provide the bank with a return. Thus the central bank finds itself in the favourable position of being able to finance an interest-bearing asset portfolio without having to bear any costs other than those of printing and distributing banknotes. The return from assets equivalent to currency in circulation is usually called seigniorage. This is mainly derived from the positive net interest income arising from the central bank having assets that provide a return and interest-free credit.

With more than SEK 100 billion in circulation the seigniorage is currently a satisfactory source of finance for the Riksbank. Even using cautious assumptions about the return on the Riksbank's assets, the revenue from seigniorage is many times the Riksbank's annual operating costs. Thus seigniorage provides the Riksbank with underlying financial independence, irrespective of whether it has own capital as well.

However, from the Riksbank's point of view, currency in circulation also has certain disadvantages. One such is that the Riksbank has little ability to affect the amount of currency in circulation. As we have shown above, currency in circulation is governed by public demand. A person who wants to reduce their holding in banknotes can go to their bank and convert the banknotes into a holding in a bank account. The bank can then redeem these banknotes for a holding in their account with the Riksbank. In this case the Riksbank must either pay interest to the bank, or, which has the same effect on seigniorage, reduce its assets by a corresponding amount.[9]

This means that if for some reason the demand for banknotes decreases, the seigniorage income of the Riksbank is also affected. Here, the development of electronic payment technologies is probably a significant factor, however it is difficult to find factors that explain the amount of currency in circulation with any degree of precision.[10] Nevertheless it is important for the deliberations of this Commission to take into account the degree to which banknotes constitute a sustainable long-term source of financial independence for the Riksbank. The Commission will therefore return to this issue in a later section.

In summary we can state that, for the purposes of ensuring financial independence through the Riksbank's net interest income, currency in circulation and own capital are interchangeable. However, from an accounting standpoint they are affected by different

[9] The Riksbank must also accommodate those who want banknotes. This is because a national central bank must help the banks maintain full interchangeability between bank deposits and banknotes. Otherwise a bank may be forced to say no to a depositor who wants to take money out of their bank account, which would have serious consequences for the stability of the banking system.

[10] For a detailed discussion regarding this, see Andersson, M. & Guibourg, G. (2001): The use of cash in the Swedish economy, Sveriges Riksbank Economic Review 2001:4

factors: currency in circulation is affected by public demand, and own capital is affected by the Riksbank's income and the extent to which profit is allocated to central government. This can affect their properties as a source of financial independence. In its continued analysis this Commission will take into consideration the specific properties of currency in circulation which have been identified.

2.4.3. Some definitions

To facilitate further analysis we felt it useful to define some concepts used in the Commission Report.

Currency in circulation	The total nominal value in SEK of the banknotes and coin in circulation.
Free capital	Can be made up of both currency in circulation and own capital. Funds on the liabilities side of the balance sheet which are therefore available for the Riksbank to invest. Returns from these investments make the Riksbank financially independent as long as they cover the bank's costs. Sometimes *buffer capital* is used to mean cost-free capital, when it is primarily the ability to bear capital losses which is being referred to.
Cost-free funding	Cost-free capital generates cost-free funding. Hence the Riksbank can use the return on its assets in order to pay its costs.
Own capital	For the purpose of this Commission's analysis, it will be useful to have a more detailed definition of own capital than that of what is called "paid-up capital, reserves and surplus" in accounting terms. This definition will include items that can clearly be characterized as own capital. Own capital can then be said to be made up of the collective value of items that can be characterized as own capital in the Riksbank's balance sheet, including revaluation accounts. In a foreign comparison certain provisions can be considered to be included in own capital.
Reported own capital	Sometimes there is cause to discuss only the capital that actually is reported as own capital. If that is the case, then the concept reported own capital will be used.
Profit	The financial result reported in the profit and loss account as distributable to central government.
Foreign exchange reserve	The total value of the Riksbank's assets in securities and bank deposits denominated in foreign currency and gold.

Positions in derivatives and repo transactions used to hedge or take positions in foreign currency are also included in the foreign exchange reserve.

Capital need

The amount of capital that the Riksbank needs to finance costs, i.e. fulfil its obligations. In this Commission of Inquiry the Riksbank's capital need is normally discussed only in terms of a *capital* need as defined above, without specifying whether it is own capital or currency in circulation that is being referred to.

3. The autonomy and financial independence of the Riksbank

3.1. Independent central banks - background and motive

In many countries central banks have historically had a unique position in comparison to other agencies in the central government administration. There are also central banks that are not public authorities which are managed as limited companies or with other organisational forms. To a great degree this is associated with the task of issuing banknotes and coin. Historically, issuing banknotes was not the sole domain of central banks, commercial banks could also issue banknotes. Many central banks have also carried on commercial banking activities, for example lending to private individuals and companies. In most countries these activities have decreased dramatically recently, to be replaced by statutory tasks. However, there are still elements of banking activity in the central banks of many countries.

In Sweden this unique position has been most clearly demonstrated in that the Riksbank is one of the few public agencies directly responsible to Parliament, as opposed to responsible to government, which is normally the case. Originally this unique position protected Parliament from the king using the banknote printing presses for policies that Parliament did not support. This would naturally have led to high inflation and the undermining of the value of the Swedish krona. For similar reasons the Swedish National Debt Office (Riksgäldskontoret) was also established as a public authority responsible to Parliament, so that Parliament could control central government borrowing.

The risk of central government using the banknote printing presses to resolve fiscal problems is a well-recognised one, and there are many examples of this throughout history. Creating some independence from government (previously seen as the "king's men") and central government finance for the central bank is not a new invention. However, the high inflation of the 1970's and 1980's in many developed economies has made the issue very topical for economic policy research and debate.

After the Second World War the focus of economic policy was largely characterised by Keynesian stabilisation policy.[11] Simply put, this is based on the idea that central government should use the central government budget to counteract fluctuations in the business cycle. By increasing expenditure or reducing the tax burden, central government can strengthen demand in the economy in a recession. The status of Keynesian politics was strengthened in the 1960's and 1970's when the Phillips curve theory gained a foothold with economic policy makers.

The Phillips curve indicates a negative correlation between inflation and unemployment. Economic policy measures would allow central government to create high demand for

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[11] Apel. M. & Viotti, S. (1998): Why is an independent central bank a good idea? Economic Review 1998:2. See also Bergström, V. (2001): Independent central banks in democracies? Sveriges Riksbank Economic Review 2001:1.

labour and therefore low unemployment, but this would be at the cost of rising inflation. Inversely, combating inflation effectively would lead to higher unemployment. One interpretation of the Phillips curve was that economic policy decision-makers must make a choice between combating inflation or unemployment. This interpretation influenced many decision-makers, especially in the 1970's.

However, the Phillips curve was called into question fairly quickly, especially with regard to the validity of the long-term correlation between inflation and unemployment.[12] Critics pointed out that this correlation was dependent on inflation expectations in the economy. When an accommodating fiscal policy was used to counteract unemployment the public would see this as inflationary, and adapt their inflation expectations to a higher level. As the public's inflation expectations grew, and this affected behaviour, in the form of nominal wage demands for example, the effect of expansionary fiscal policy would decrease. The conclusion was that the Phillips curve did not apply in the longer term and that there was no long-term correlation between inflation and unemployment.

Substantial inflation, and the fact that it was persistent in the 1970's and 1980's, became a major economic problem for many countries. Criticism of the Phillips correlation increased becoming fairly widely accepted in the 1980's by academics as well as economic policy makers.

However, the short-term correlation of the Phillips curve was not called into question. The existence of this correlation in the short-term meant that government economic policy incentives came under scrutiny. Attention was drawn to the risk of politicians attempting to reduce unemployment with over expansive economic policies, to win votes before an election for example. This would damage the economy in the long term by raising inflation expectations, but the risk is that politicians ignore long-term effects.

The solution to this problem, developed theoretically in the 1980's and initially used in the 1990's, was to hand over the fight against inflation to an autonomous central bank. The idea was to remove the risk of inflationary, expansive economic policies by giving the central bank a clear mandate to fight inflation and by ensuring that its management had no incentive for other objectives. Certainly the political system retained one of the two important economic policy instruments, fiscal policy. But the other, monetary policy, would be handled by the independent central bank. If fiscal policy became inflationary, the central bank would be forced to tighten monetary policy by raising interest rates, and this would mean that the fiscal policy measures would not lead to the planned increase in demand. This would therefore remove the temptation to use the short-term Phillips curve.

The idea of creating long-term stable inflation through independent central banks had its breakthrough in the 1990's, although central banks had had a certain degree of independence before that. A number of countries reformed their economic policy systems along these lines. This happened in Sweden through amendments to the Sveriges Riksbank Act and Instrument of Government of 1999 which created the independent Riksbank we have today.

[12] One of the foremost critics was the 2006 Nobel Laureate in economics, Edmund Phelps, who has mainly awarded the prize for this criticism. The 1976 Nobel Laureate Milton Friedman was one of the early critics of the Phillips correlation.

This reform was due in part to Sweden's membership of the EU. When the EU decided to create a common currency, the requirement for independent central banks was introduced into the EC Treaty. As a result the requirement for independent central banks has been accepted by all EU countries. When adapting the Sveriges Riksbank Act it was the intention that Sweden would meet these requirements. The convergence reports discussed above, which are one of the main reasons for this Commission being set up, form the EU's assessment of Sweden's fulfilment of the requirements for independent central banks.

3.2. The Riksbank's independence relates primarily to its terms of reference and governance

In the previous section we showed that the motives behind the independence of central banks were, above all, based on the need to hand over monetary policy to an organisation which would not be inclined to act in conflict with the fight against inflation, separating decision-making regarding monetary and fiscal policy as a result. To achieve this, the legislation safeguarding independence has focused on issues regarding the governance and management of the Riksbank. This relates to the three forms of independence laid out in Chapter 1 – functional, institutional and personal independence. In practice, it relates to the Riksbank having clear terms of reference and its management having the right conditions to act independently.

At the same time there is a conflict between independence and the fact that the Riksbank as a public authority must, to some extent, be governed by the political system. From a democratic viewpoint this goes without saying. Independence cannot be so extreme that the political system cannot under any circumstances change the Riksbank's terms of reference and management. Thus the present regulations should be seen as striking a balance between ensuring that monetary policy is handled independently and for the long-term, and making sure that the Riksbank's terms of reference and management can be changed democratically.

The fundamental provisions regarding the Riksbank are laid down in the Instrument of Government and thus are constitutional, this means that they can only be changed by resolutions in two Parliaments with an election between them. However, the constitutionally guaranteed provisions essential for independence are fairly limited. These aim to prevent other public authorities from deciding how the Riksbank should make decisions on monetary policy issues; determine how the Riksbank is governed through its General Council which appoints an Executive Board; and ensure that members of the Executive Board of the Riksbank can only be severed from their appointments in extraordinary circumstances. Other provisions advancing independence take the form of normal legislation, in the first instance the Sveriges Riksbank Act, and so can be changed by a single parliamentary decision.

The most important rules governing independence can be said to be the following:

Functional independence:

- The objective of fighting inflation is established by specifying that the Riksbank's objective is price stability. Thus the Riksbank can reject pressure to act for other objectives or carry out other tasks.

Institutional independence:

- The Riksbank may only conduct, or participate in, such activities for which it has been authorised by Swedish law.
- The Riksbank may not accept instructions from other authorities or from the government.

Personal independence:

- Members of the Executive Board are appointed for a relatively long period, six years.
- Members of the Executive Board may only be severed from their appointments in exceptional circumstances.
- Regulations limiting the opportunity of members of the General Council and Executive Board to hold other assignments along with rules of disqualification.

Thus, firstly, the provisions are intended to ensure that the Riksbank is primarily engaged in the fight against inflation, and that its other tasks are confirmed in law. Proper scrutiny by Parliament and the general public of the Riksbank's activities ensure that the Riksbank will always fight against inflation.

Secondly, independence is guaranteed by the relatively long period of appointment of the Executive Board members, and, while they can be dismissed, this is very difficult to do. As appointments to the Executive Board expire at different times, one every year unless there are resignations, neither can a large part of the Executive Board be replaced at the same time. This strikes the balance between the natural need for the renewal of the Riksbank's management and the desire to limit direct influence from the political system. The General Council is selected by Parliament for the electoral period.

3.3. The need for financial independence

3.3.1. General points on the need for financial independence

Judgement of the Commission: Financial independence supplements functional, institutional and personal independence. Its aim is for the Riksbank to have sufficient financial resources to independently carry out its task and fulfil its obligations.

The need for financial independence is based on the fact that for an organisation to be independent it needs not only to be protected with regard to its task and management, but also needs financial resources to carry out its task independently. In the previous section we showed how, through legislation, the Riksbank had been made independent from the political system with regard to its task and governance.

With the creation of the independent Riksbank in 1999 less attention was paid to financial independence. One reason was probably that central banks normally have a natural earning capacity through seigniorage. For the Riksbank these earnings from seigniorage have easily covered current operating costs. Normally, other public authorities are dependent on annual appropriations and are therefore dependent on Parliament to allocate enough funds in the budget for them to be able to carry out their task.

Because of its own earning capacity the discussion regarding financial independence is not about whether the Riksbank should be financed with appropriations or not, and whether, in that case those appropriations are sufficient. Instead the discussion focuses on two different risks that could threaten the Riksbank's ability to finance its current costs. One risk is that Parliament, more or less arbitrarily, decides that funds should be transferred from the Riksbank to the central government budget. This was what took place with the extra dividends of 2001 and 2002 (this is not to say that these transfers threatened the Riksbank's position, capitalisation was good even after the transfers). This issue can be handled by setting out in law the size of the Riksbank's own capital and the allocation of the Riksbank's profits. This is also the primary task of this Commission.

The other risk is that the Riksbank makes losses so large that the remaining funds are not enough to finance current costs. Its earning capacity could also be weakened should the basis for seigniorage change suddenly. This could happen if the inclination of the general public to hold banknotes and coin decreased considerably for example. In such a situation the Riksbank could be dependent on central government allocating new funds to continue to fund its activities.

As this Commission sees it, these two risks and the terms of reference of this Commission are linked as follows. In order to manage the first risk, the size of the Riksbank's capital and the method of distributing profits must be set out in law. The material content of these statutory provisions will be governed by how great the capital need be in order to be able to manage the risk of major losses or a weakened earning capacity. What the risks are, and their magnitude, will be affected by the Riksbank's tasks and the structure of its balance sheet. Hence this must also be discussed by the Commission. In turn, the content of the statutory provisions on profit distribution will be a function of how profits are to be managed in order to maintain the level of the statutory capital.

Thus the need for financial independence arises because the central bank must not risk being subject to pressure from the political system because of constraints on its financial independence. To that extent financial independence complements the independence given to the Riksbank in the current legislation with respect to its task and governance.

In assessing how large its capital should be, the Riksbank must have a long-term earning capacity such that if it suffers sudden losses, it will not need new funding from central government. Assessing how sure one needs to be that the Riksbank will not need to turn to central government for financing is also one of this Commission's tasks. However, the mere fact that the Riksbank may need additional funding from central government at some point, need not itself be an issue with regard to independence. The probability of the Riksbank having financial problems at the same time as the Riksbank and Parliament are at variance on monetary policy is not great. It should also be emphasised that strong financial independence can in no way supplant the other forms of independence more important with regard to monetary policy decisions.

In addition, a parallel can be drawn with other public sector entities, where it has been highly prioritised to safeguard independence from political influence. For example the courts and the Swedish National Audit Office, which are dependent on annual appropriations from the central government budget, but can still be considered to act independently. The courts are even responsible to the government, as opposed to the Riksbank and the Swedish National Audit Office.

As we discussed above, the starting point must be that a democratically elected Parliament has determined that the Riksbank's primary task is to fight inflation. In most cases the political system has an interest in creating suitable conditions for the central bank to carry out its tasks in the best possible way. Accordingly the system will create good economic conditions for the central bank, providing funding if this is not in place for any reason for example. However, due to the risk that governments (with support in Parliament) are sometimes too short-termist, the Riksbank has been given statutory independence. The aim is to manage the government's conflict of interest between long-term low inflation and the short-term objective of winning elections by way of expensive election promises. However, this independence does not mean that the political system, through Parliament, cannot change the focus of the Riksbank's activities. And if Parliament wants to influence the Riksbank's terms of reference, it can do this by changing to the law, which is probably more effective than changing the financial circumstances of the Riksbank. Thus "protection" for the central bank must always have its limitations. On the other hand, it is important that any such changes to the Riksbank take place in a transparent process.

However, it is not only the "protection" of the central bank from the political system which must be taken into account in any discussion of the financial position of a central bank. In certain circumstances weak finances could, in an extreme case, lead to the central bank not conducting monetary policy in the best possible way, instead being influenced by the need to protect its own finances, when determining interest rates for example. In this case it is more a matter of protecting society from a central bank not carrying out its task in the best possible way. This may be a reason for ensuring that the financial position of the central bank is never too weak. This reason is linked to the political task given to the central bank and so has nothing to do with independence from the political system. This will be developed in the following section.

3.3.2. What is unique about financial independence in a central bank?

Judgement of the Commission: A central bank is financially independent in the long-term if its net worth is positive, i.e. if the discounted future income flows net of costs are positive. Since the seigniorage is more than enough for the Riksbank's revenues to exceed its costs, own capital in the Riksbank could in principle be zero.

When assessing and analysing the financial strength of an organisation it is easy to attach a great deal of weight to the size if its own capital. This is probably because of how financial strength is analysed and regulated in a limited company. When assessing the long-term survivability of a limited company it is natural to compare the size of the equity capital to the variation in financial results and the extent to which there is a risk of major losses. A limited company goes bankrupt if it cannot pay its creditors, or is liquidated when the value of the equity capital has decreased by more than the threshold values prescribed in the legislation on limited companies.

However, the Riksbank is not a limited company and there are no legal obstacles to the Riksbank having negative own capital. This is not in itself unique or strange. For example, depending on how the value of the property is reported, tenant-ownership associations can have negative own capital, but still be financially stable and have long-term survivability.

If there are no legal restrictions in the form of bankruptcy legislation, financial survivability is about the extent to which an economic actor can pay its maturing obligations to its creditors. Hence it is relevant to ask whether there are situations in which the Riksbank risks not being able to pay its overdue accounts, i.e. suspends payments.

The Riksbank's position in this respect is unique because it is the legal issuer of banknotes and coin, and can in principle always generate legal tender in Swedish krona. Thus the Riksbank can always pay its costs by issuing new banknotes. In a system such as Sweden's however, all new banknotes that are created will eventually be exchanged by the Riksbank again, unless the demand for cash has grown. From a purely practical point of view a bank withdrawing banknotes from the Riksbank will see a reduction in the size of its account with the Riksbank, or a debt if the account balance is negative. The banks receive interest on the money they have deposited in this account, and must pay interest when they have a deficit in the account. So when a bank withdraws cash from the Riksbank it forgoes the interest on a corresponding amount. This works in the same way as when private individuals withdraw money from their bank accounts – when the money ends up as cash in their wallets no interest is paid on it.

When banknotes are redeemed with the Riksbank an interest-bearing liability arises corresponding to the amount exchanged. So the Riksbank has higher interest costs. In this situation a central bank which does not have the funds to pay its costs must issue still more banknotes, banknotes which will eventually be redeemed with the central bank again, transformed into an interest-bearing liability and increase the costs of the central bank even more. This leads to a situation for the central bank where it is faced with accelerating borrowing. The central bank's liabilities will grow and so will its interest costs. Despite this, the central bank will always be able to pay its costs by issuing new banknotes.

This argument, while theoretically correct, is not relevant in practice. A modern central bank does not fulfil its obligations using banknotes. In this situation the main risk is if the financial position of the central bank is so weak that it takes into account the effect on its own profits of monetary policy decisions. When the central bank's interest-bearing liability increases there is reason to hold down interest rates to reduce its costs. Interest rates may be set lower than is appropriate for fighting inflation. Though the risk of this is small, it should be mentioned, as confidence in the central bank is so important for its monetary policy task of fighting inflation. Above all there is a risk of a credibility problem arising if the central bank can and needs to influence its own finances by setting interest rates. There are examples of countries where the weak financial position of the central bank has led to questions being asked the execution of its monetary policy.[13]

So far the discussion has shown that, when assessing the financial position of a central bank, it is neither relevant to look at the reported size of the own capital, nor the ability to pay an outstanding liability. An alternative way is to discuss what makes a central bank financially independent in the long-term, without taking into account whether it can always pay its liabilities. If it is clear that the central bank has the ability to fund its operational activities in the long-term, confidence in it should not be affected by its reported financial position.

An organisation should be seen as financially independent in the long-term if it has a positive net worth[14], i.e. a positive net worth is achieved if the discounted future income flows net of costs and expenses are positive. If the balance sheet reports the actual worth [15] of assets and liabilities, then own capital corresponds to net worth. The problem with the reporting of central banks is, as discussed in Chapter 1, that the actual value of seigniorage, or more accurately the right to issue banknotes and coin, is not reflected in the balance sheet. The interest-free credit constituted by seigniorage is reflected in the balance sheet as outstanding banknotes and coin. Banknotes and coin are reported as a liability in nominal value terms. However, this liability does not entail interest costs.

The idea behind the net worth argument is that as long as the central bank has a positive net worth, there is no reason to worry about its actual financial position. The central bank can carry out the activities with which it is tasked and there is no reason to take its finances into consideration when implementing monetary policy. This is long-term financial independence.

In the opinion of this Commission, net worth is a good starting point to look at how a central bank's financial position can affect its activities.

In 2006 the Riksbank's operating costs were SEK 704 million. Currency in circulation was SEK 112 billion. If the volume of currency in circulation continues as it is and assuming that the Riksbank can obtain an average risk-free return of 3.5 percent annually by investing this, seigniorage is annually worth approximately SEK 3.9 billion. Because the expected return from seigniorage widely exceeds operating costs, it is clear that the Riksbank has a net worth even without any own capital. As was pointed out above, there

[13] For a discussion of such examples, see Stella, P. (1997): Do Central Banks Need Capital? IMF Working Paper WP/97/83 and Stella, P. (2002): Central Bank Financial Strength, Transparency, and Policy Credibility. IMF Working Paper WP/02/137

[14] The use of the "net worth approach" when assessing the capital need of national central banks is developed in Capitalizing central banks: A Net Worth Approach by Alain Ize, Working Paper from the International Monetary Fund, WP/05/15, 2005.

[15] Here, actual worth means all values marked to market, even intangible values that often do not appear in accounts for example. However, as far as possible the international financial reporting standards, IFRS, aim for actual or realistic worth in the balance sheet.

is also a certain risk that the Riksbank can make losses and there is also a risk that currency in circulation can decrease in volume. These issues will be dealt with later.

So, in the opinion of this Commission, own capital could in principle be zero without the Riksbank's financial position undermining its ability to fulfil its tasks. The Riksbank would have a positive net worth even with some degree of negative own capital. However, negative own capital could affect confidence in the central bank in other ways. This will be discussed in the following section.

3.3.3. Confidence factors for a financially weak central bank

Judgement of the Commission: Both currency in circulation and own capital can be considered cost-free capital and can contribute to the funding of the Riksbank's operational activities creating financial independence. However, it is possible that confidence in the central bank could be called into question if the reported own capital was negative, despite currency in circulation being more than enough to provide continued financial independence.

In the previous section it was shown that a central bank with a large volume of currency in circulation, low operating costs and relatively limited risk of losses does not really need own capital. Although in principle a central bank such as the Riksbank can fulfil its tasks with some negative own capital, the way that this is perceived by external parties, with regard to confidence in the Riksbank, needs to be discussed.

As discussed above, the reason that confidence could be damaged if the Riksbank has negative own capital, or was considered financially weak for any other reason, is that this could raise suspicions that it has considerations other than those of pure monetary policy when setting interest rates. Parties with insight into the workings of the central bank will not suspect this because, in line with the discussion in the previous section, the risk of financial problems is small. But it cannot be assumed that all parties will have such insight.

It is notoriously difficult to assess how confidence can be affected in hypothetical situations. For example, confidence can be affected by the expectation or suspicion that a certain situation will influence behaviour, even if this expectation is not correct. Those countries with problems of confidence of this nature have mainly been developing countries with major financial problems. One exception is Japan. In 2002, its central bank was damaged by market speculation that the monetary policy was being influenced by a desire to avoid losses.[16] Although this speculation did occur it is hard to assess the degree to which it actually affected the ability of the central bank to fulfil its task.

Loss of confidence need not be based in well-grounded suspicions that a central bank's behaviour is being influenced. The mere fact that it is difficult to explain that a central bank can have negative own capital without this causing problems, may influence the central bank's decision-makers to strongly avoid a negative own capital situation arising. There are indications that central bank decision-makers are, in certain cases, influenced

[16] Stella (2002), ibid.

by the bank's financial situation, despite the fact that they really should not have any reason to be.[17]

It is also difficult to explain that currency in circulation normally has other economic properties than those of other liability items, and in certain respects can be considered equivalent to own capital.

At the same time this Commission feels that it is unreasonable to allow the fear of a hypothetical crisis of confidence go too far. It should be pointed out that the situation for the Riksbank looks different to that of countries where problems of this sort have occurred or where there has been speculation about problems. Internationally the Riksbank is a comparatively open central bank, with scrutiny of and public access to most of the Riksbank's decisions and assessments. The Riksbank is open about the factors that govern its deliberations when setting interest rates and there is a lively public debate associated with these deliberations. Of course this means that it would be difficult for the Riksbank to take account of factors that have nothing to do with inflationary developments. The decision-makers governing the Riksbank are probably more likely to be influenced negatively by such suspicions, than the way negative own capital would affect its operations.

In addition, the risk of confidence issues should diminish if the Swedish legislation stresses that negative own capital is fully possible, which could be done in conjunction with the legislation arising out of this Commission. Besides, confidence issues and how they affect the assessment of the Riksbank's capital structure must be seen in the light of the argument for independence, which is discussed above. Were the Riksbank to have such a weak financial position that confidence in it was threatened, the political system would have every reason to attempt to restore confidence by ensuring that its finances were strengthened, otherwise suspicions might be raised that the political system was wavering in its support of the independence of the Riksbank. The Riksbank was given its independent position by the Parliament, and this position should remain, as long as the political system is at heart positive towards fighting inflation in the long-term. And, if it is not, then Parliament can, within the limitations of the EU Treaty, change the terms of reference of the Riksbank by changing the law.

3.4. What creates financial independence?

We have already argued that one of the primary conditions for financial independence, which was also a starting point for this Commission, is that the political system cannot remove funds from the Riksbank too easily. This can be achieved by setting out in law the size of the Riksbank's own capital and how profit distribution is to be undertaken. Ensuring that the Riksbank has sufficient cost-free capital to finance its current costs and cover unexpected losses will be developed in more detail in the following sections.

[17] This was pointed out by Toshihiko Fukui from the Japanese national central bank in a speech on 1 June. Fukui, T. (2003): Challenges for monetary policy in Japan.

3.4.1. The ability to generate revenue

Judgement of the Commission: The Riksbank's earning capacity is based on it having cost-free capital which can be invested in assets that provide a return. This cost-free capital can consist of own capital and of currency in circulation.

Under the current arrangement, the Riksbank's earning capacity is based on it having assets that can generate a return. Essentially these assets consist of financial assets. As shown in Chapter 2, they largely consist at present of the foreign exchange reserve, i.e. interest-bearing securities in foreign currency and gold. Today the size of the foreign exchange reserve is to a large extent a result of the size of currency in circulation and own capital. It is debatable whether the Riksbank currently has the legal right to invest in assets other than currency assets. There would be scope to invest in other assets were the Riksbank given the express right, in the Sveriges Riksbank Act, to make an independent evaluation of how large the foreign exchange reserve should be. This would involve other risks and other return opportunities.

The liabilities side of the Riksbank's balance sheet mainly consists of currency in circulation and own capital. Neither the liability item constituted by currency in circulation, nor the own capital, cost interest or otherwise have any yield requirement. Both can be seen as contributions made by central government, without the need for anything in return financially than payment of the Riksbank's surplus to central government. Hence the Riksbank's earning capacity consists of being able to invest cost-free capital in assets that generate a return. The magnitude of that earning capacity depends on the size of the cost-free capital and the expected return on the assets. One specific factor which can affect the Riksbank's earning capacity is that currency in circulation is determined by the public's demand for cash. This demand is difficult for the Riksbank to influence, and, as there is a risk that the use of cash will decrease as a result of an increased use of credit cards and other electronic payment methods, there is a risk that the earning capacity of the Riksbank may be weakened in this respect. This is discussed in more detail in Chapter 4.

3.4.2. The Riksbank's current operating costs

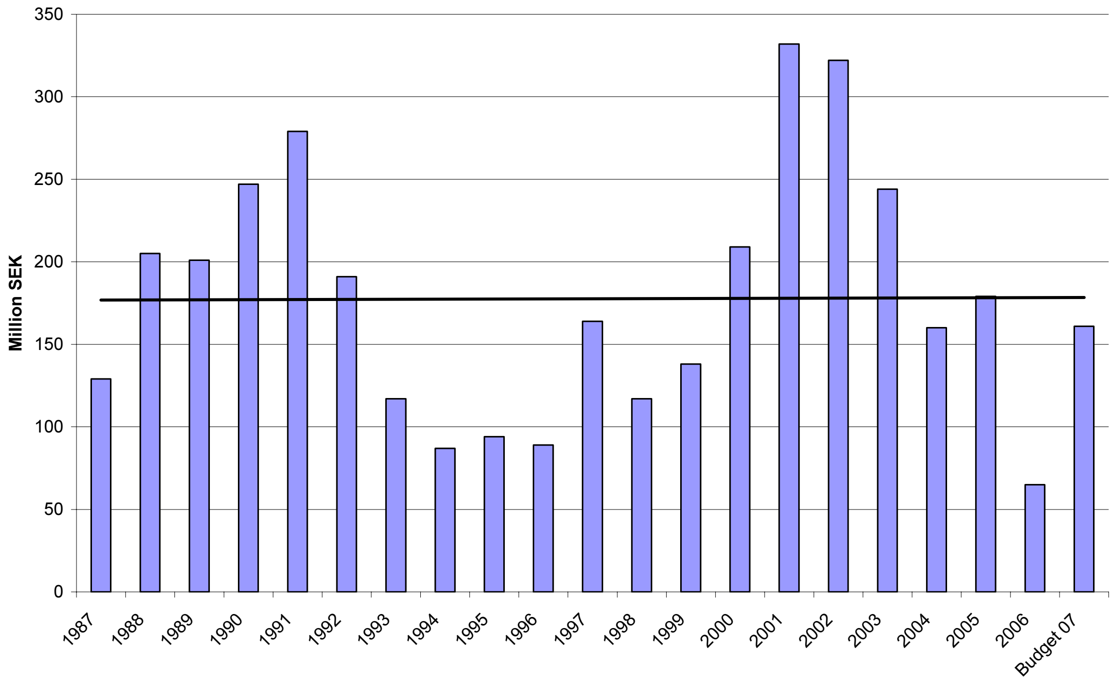
Judgement of the Commission: The Riksbank's current operating costs of about SEK 640 million, and the costs of banknotes and coin of SEK 160 million, are a good starting point for calculating the capital need.

One condition for the Riksbank to fulfil its terms of reference is the ability to finance its current operating costs. The current operating costs for 2006 were SEK 704 million. This includes a cost for banknotes and coin of SEK 65 million. Otherwise they consist largely of personnel costs and administrative costs such as IT, office and property administration.

The calculations made by the Commission of expected operating costs are based on this level of operating costs, approximately SEK 640 million, with the cost of banknotes and coin excluded. The reason for this is that the Commission does not see it as its task to assess whether this is a reasonable level of costs, i.e. the Commission makes no judgement as to whether the Riksbank is carrying on its activities in an efficient manner or not. In addition, a major change to the Riksbank's terms of reference and operations could cause the cost level to change. However, the Commission does not consider the changes discussed to be significant enough to adjust the current operating costs. However, the operating costs will have to be adjusted over time with an expected level of inflation of 2 percent, in order to take account of a general increase in prices.

The cost of banknotes and coin refers to the cost of purchasing new banknotes and coin. These costs are extraordinary in that they vary greatly over time, depending on the various denominations and the need to replace banknotes and coin. Figure 3 shows how these costs have varied with time over the last 20 years.

***Figure 3**. The cost of banknotes and coin for the Riksbank 1987 -2007 in current prices. The solid line shows the average for the entire period.*



The average cost for the entire reported period is SEK 177 million annually. The Riksbank has reduced the average cost level recently, above all by purchasing banknotes and coin instead of producing them itself. It is therefore reasonable to proceed from a somewhat lower level than this average for the Commission's calculations. The Commission has chosen to proceed from a level of SEK 160 million. In the calculations this cost should also be adjusted upwards with an expected rate of inflation of 2 percent.

3.4.3. The risk of major losses

Judgement of the Commission: In addition to a funding requirement for current costs, the Riksbank runs a certain risk of unexpected major costs in the form of losses in its operations. Such risk is found in asset management and any emergency liquidity assistance.

In addition to current operating costs the Riksbank runs some risk of unexpected major costs, i.e. losses. There is a parallel here with commercial banks, which are typically exposed to different types of risk for which it is important to have efficient risk management procedures and an ability to handle potential major losses by having an own capital buffer. The risks to which the Riksbank is exposed are, to a certain extent, similar in character to those risks faced by commercial banks. In contrast to those banks, whose risk taking is part of a profit making business operation, the Riksbank's risks are mainly associated with its tasks. We will only present the fundamental risks in the Riksbank's operation here. The size of these risks and how they can be influenced by the structure of the Riksbank's balance sheet will be developed in Chapter 4.

The significant risks identified by the Commission are the following:

- Financial risks in asset management. When investing in financial assets there is always a risk that the assets will not provide the expected return and that they may even fall in value causing losses. Because the financial assets are currently mainly foreign interest-bearing securities, the Riksbank's financial risk is primarily in foreign exchange and interest rate risk. Of course were the Riksbank to invest in other assets other financial risks could arise.
- Credit risk in emergency liquidity assistance provision. The Riksbank is tasked with providing emergency liquidity assistance, primarily to banks[18] if this is needed to protect the stability of the payment system. These credits are only given for liquidity support purposes, i.e. not to protect a bank that is going bankrupt. This should mean that the credit risk for the Riksbank is limited. However, because emergency liquidity assistance is typically provided at short notice and on the basis of inadequate information, there is still some risk of misjudgement which can result in some credit risk.

[18] The law confers upon the Riksbank the potential to provide emergency liquidity assistance to all firms under the supervision of Finansinspektionen (and also some foreign banks). However, the Riksbank itself considers that it is primarily banks that are eligible as they are central to the stability of the financial system in the main.

3.4.4. Independence in the event of losses

Judgement of the Commission: The Riksbank's cost-free funding must cover both operating costs and potential losses. Alternatively, central government can provide a guarantee or other pledge so that the cost-free capital will be restored if losses arise.

The Commission has chosen to make a distinction between current operating costs and losses, despite them being, in both cases, costs. The reason for this is that the current operating costs arise continuously and should be fairly stable in size, while losses usually have a very low probability. However, they can be large. In practice, however, there is no clear boundary between a current operating cost and a loss in terms of the effect on financial independence, the breakdown is only made for elucidatory reasons.

The current operating costs should be covered by the expected return from assets being greater than the cost by some margin. With regard to the risk of losses for the Riksbank, these have the character of highly unlikely events, the costs of which can be large in relation to current earnings should they occur. It is natural for firms facing the risk of major losses to have some degree of own capital against which losses can be set.

It is realistic to suppose that the Riksbank's own capital is a buffer that can bear losses. However, as discussed above, it is not necessary for a central bank to have positive own capital. In principle the item on the liability side of the balance sheet made up by currency in circulation can act as a buffer capital, because it has an earning capacity in the same way that own capital does.

The natural point of departure when assessing how large a capital buffer needs to be is the probability of a loss arising, how large the loss would be in this case and how bad it would be if the losses were greater than originally estimated. It is desirable to be able to quantify these factors in order to really be able to calculate the capital need. However, the Commission does not consider it possible to estimate either the probability of losses or the potential size of loss with enough precision for it to be meaningful to attempt more sophisticated calculations. Based on this, the Commission takes a primarily qualitative approach.

An alternatively way of managing the risk of losses is to ensure that an owner (or someone else for that matter) replaces losses through some form of guarantee if they should arise. To achieve the desired level of protection for its independence the Riksbank would need a guarantee against losses to take the form of a statutory recapitalisation regulation, a pledge from Parliament for a capital infusion or other statutory guarantee. The conditions and suitability of such a regulation are discussed in more detail in Chapter 6.

3.4.5. Capital need for current operating costs

Judgement of the Commission: The capital need to fund current operating costs is SEK 32-43 billion. In addition to this is the capital need for the cost of banknotes and coin of SEK 8-11 billion.

In the previous section we discussed the fact that the Riksbank had an earning capacity because of its access to investable cost-free capital, and that this earning capacity must be able to cover current costs if financial independence was to be achieved. In addition there are certain risks that could lead to greater expenditure or a reduction in earnings. So the first step is to assess how much cost-free capital the Riksbank needs in order to cover its current costs. In addition to this basic capital need, further cost-free capital may be needed to cover losses, or to compensate for the reduction in the cost-free capital that a reduction in the currency in circulation would cause (see Chapter 4)

In its estimate of the capital need for current costs the Commission, as discussed in Section 3.4.2, is using as a starting point an expected operating cost level of SEK 640 millions. In addition to this is the expected cost level for banknotes and coin of SEK 160 million. It is assumed that the Riksbank's costs will rise from this level at the rate of inflation, which is expected to be the 2 percent target inflation rate.

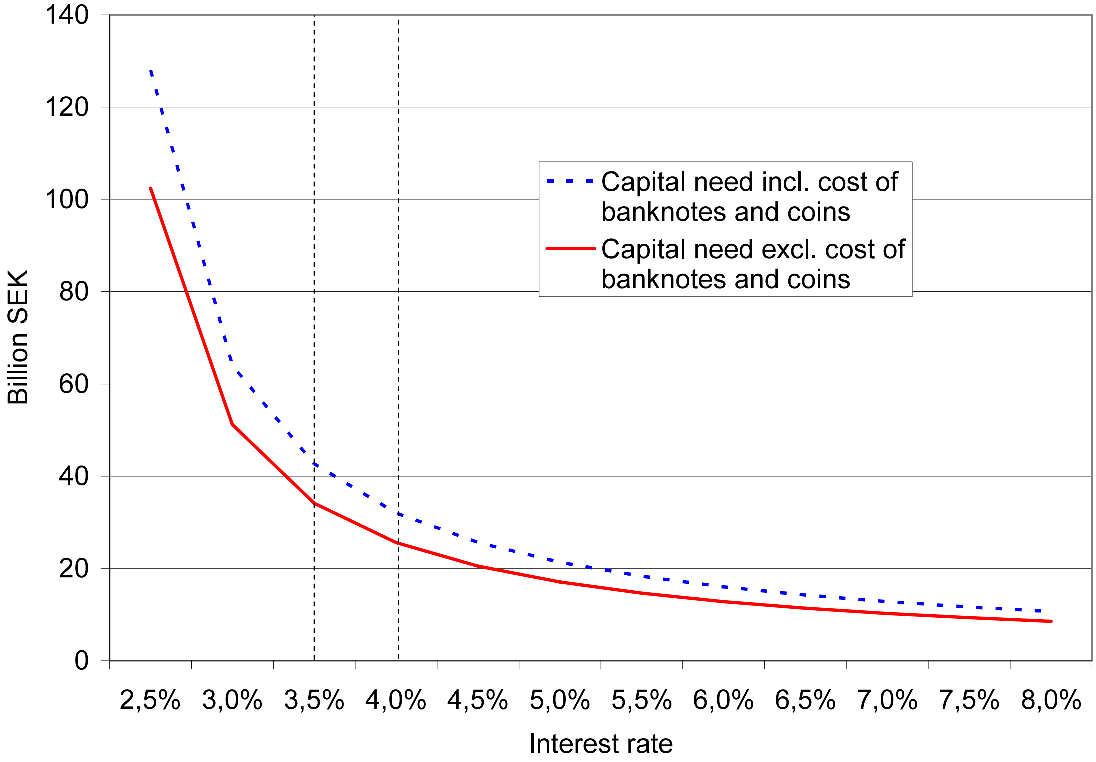
Were the capital to be invested in completely risk-free assets, i.e. short-term fixed-income instruments issued by the Swedish central government, they would provide a return in line with the long-term level of Swedish short-term rates. Of course it is difficult to accurately estimate how high this level will be. In the past the Riksbank has stated that an interest rate level neutral in terms of monetary policy would be around 4 percent. This is equivalent to a long-term real interest rate of 2 percent, if inflation is assumed to be at the target inflation rate of 2 percent. From a long-term perspective, real interest rates have been at this level in Sweden, although at times they have been considerably higher and at times lower.[19] To be conservative in our calculations, a somewhat lower long-run short-term rate such as 1.5 percent should be used. We have therefore selected an average yield band of between 3.5 and 4 percent, i.e. a 1.5 to 2 percent real interest rate plus 2 percent inflation.

The capital need for operating costs excluding banknotes and coin can be calculated using the formula SEK 640 million/(0.035-0.02) or (0.04-0.02) = SEK 32-43 billion.
The capital need for the costs of banknotes and coins can correspondingly be calculated as SEK 8-11 billion.

This calculation is very sensitive to changes in the expected return. Small changes to the long-term return will cause a large divergence in the calculated capital need. Changes to the long-term assumed cost level will also cause a relatively high sensitivity. An illustration of the sensitivity of the capital need if the expected return changes or if the Riksbank's costs change is contained in Figure 4.

[19] See the Riksbank's Inflation Report 2000/1 for a discussion of the long-term levels of Swedish real interest rates.

Figure 4. *The capital need of the Riksbank assuming different levels of long-term return, and whether the cost of banknotes and coin are included or not. Inflation is assumed to be 2 percent in the long-term.*



In the figure, the dashed vertical line shows the two interest rate levels assumed in the Commission's calculations above, corresponding to a long-term return of 3.5 and 4 percent nominally and 1.5 and 2 percent in real terms.

The figure shows that at low levels of interest, the Riksbank's capital need approaches infinity. Another way to express this is that if real interest rates are not positive in the long time horizon assumed in this calculation (theoretically an infinite time horizon), the Riksbank's capital need will be infinite. This is hardly a reasonable assumption. Table 2 shows real interest rates between 1960 -1999 for a number of countries and the G10 group of large industrialised countries[20].

[20] The G10 is a cooperative association for the national central banks of the USA, Canada, Japan, the United Kingdom, Germany, France, Italy, Switzerland, Belgium, Netherlands and Sweden.

Table 2. *Short-term real interest rates in industrialised countries 1960-1999*

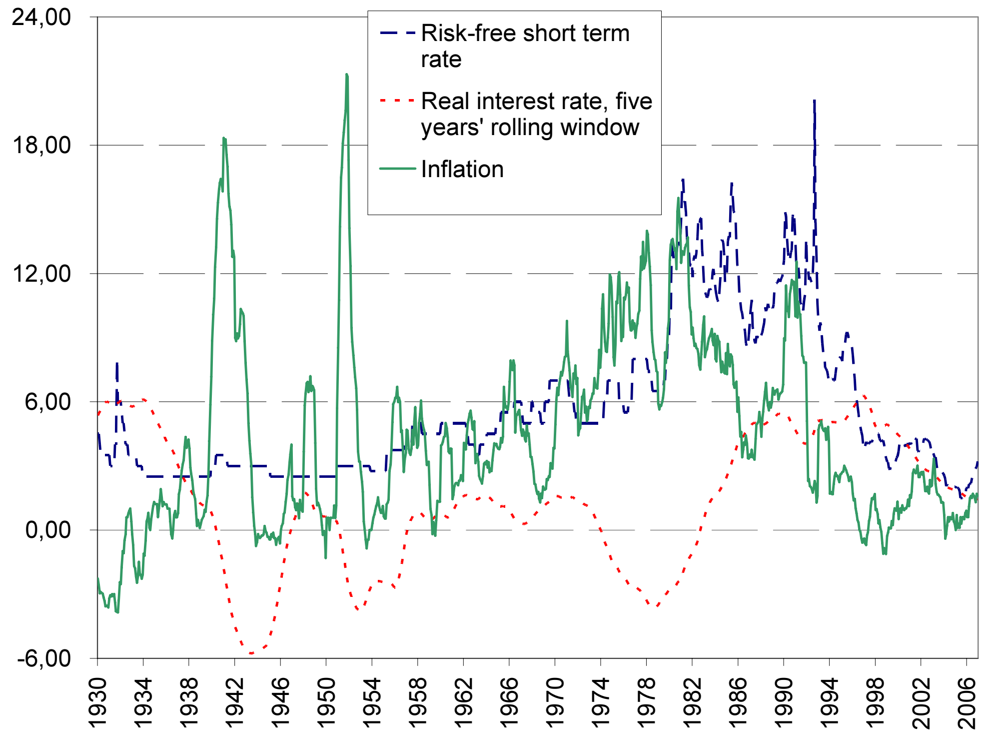
Period	G-10	Germany	Japan	Sweden	United States
1960-69	1.8	1.3	3.1	1.6	1.8
1970-1979	-0.8	1.5	-1.9	-2.0	-0.5
1980-1989	3.3	3.0	3.5	3.7	3.0
1990-1999 Q2	2.5	2.7	1.4	4.6	1.7
1960-1999 Q2	1.7	2.1	1.5	2.0	1.5

Note. The short-term real interest rate is defined as a nominal three-month rate less the average 12-month rate of CPI inflation over the preceding four quarters.

Sources: IMF, OECD and the Riksbank.

This compilation shows that real interest rates were actually low, even negative, for relatively long periods, above all in the 1970's. However, this was in periods when interest rates were not being set primarily to influence inflation (discussed in Section 3.1). High inflation meant an increased demand for banknotes so that the yield bearing assets also had a high rate of growth. In addition there was no developed financial market in which the development of interest rates mirrored a market assessment of the price of money. Figure 5 illustrates the development of short-term rates, inflation and real interest rates in Sweden in the last 75 years.

Figure 5*. Short-term rate, level of inflation and real interest rate level 1930 – 2006. Rolling five year average of the real interest rate.*

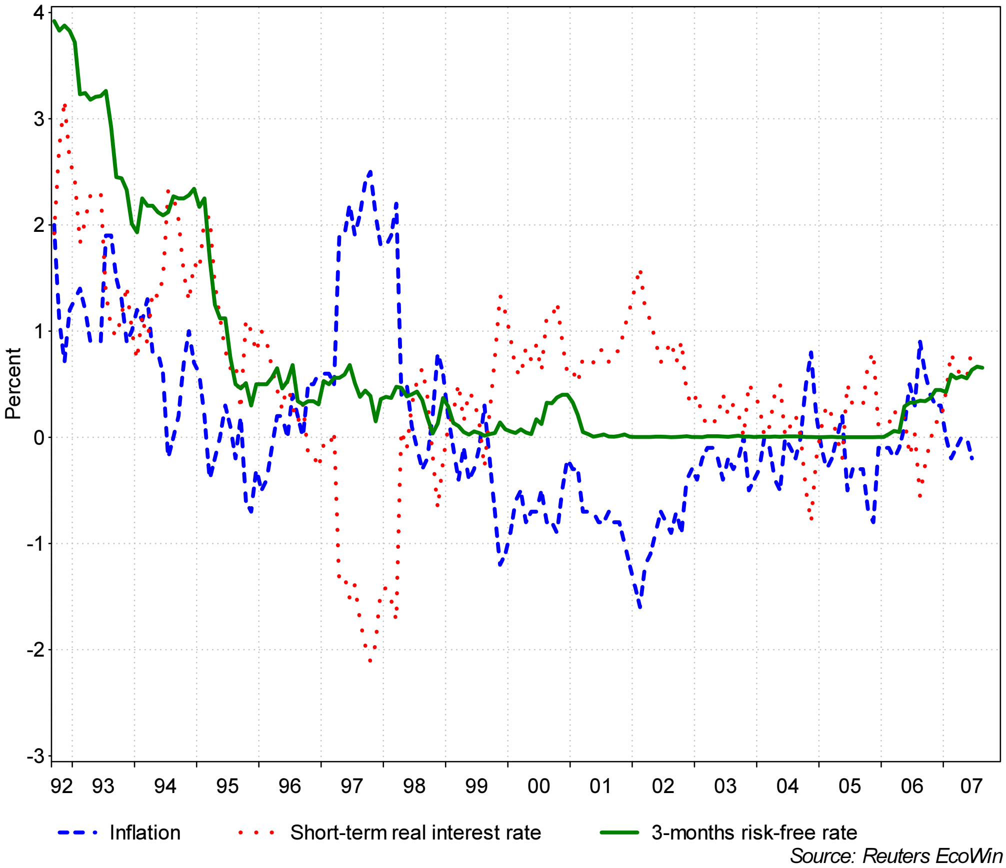


Sources: Frennberg and Hansson, Reuters Ecowin

The figure shows that during periods when the real interest rate has been negative for long periods, this has been because inflation has shot up at the same time as the interest rate level has not been adjusted for it. It is highly unlikely that we could experience anything similar given the present focus of monetary policy. If there is an inflationary spurt the Riksbank must adjust the interest rate level upwards in line with it. It is hard to imagine how negative real interest rates could occur, apart from temporarily, in such conditions.

In the model discussed here the one scenario that could threaten the Riksbank's earnings is deflation, where the deflation was persistent despite the Riksbank reducing the repo rate to very low levels or even to zero. Developments in Japan over the past 15 years are the closest example to a similar situation in modern times (see Figure 6).

Figure 6*. Short-term risk-free rate, inflation and real interest rates in Japan over the past 15 years.*



The figure shows that the central bank has kept interest rates very low, occasionally at 0 percent and that deflation has sometimes occurred, above all at the beginning of the 2000's. Because the central bank cannot reduce interest rates below zero, there is a positive real interest rate when there is deflation. The average real interest rate during the period 1993 – 2006 was 0.47 percent.

With a real interest rate equivalent to the 0.5 percent experienced by Japan, the Riksbank's capital need in the calculation above would be SEK 164 billion. However, the Commission does not consider this assumption to be useful. As was mentioned above, the calculated formula is based on an infinite time horizon. Although Japan has experienced deflation for almost 15 years, its circumstances are very extraordinary. Without going into these in detail we can say that it would be difficult for a small, open economy such as Sweden's, with open capital markets, to end up in a similar situation. Above all there would be exchange rate adjustment, something that, for various reasons, was not possible in Japan.

For a more long-term level of real interest rates the Commission considers that the level of 1.5 – 2 percent (3.5-4.0 percent in nominal return), used as a basis for the Commission's calculations, is a conservative assumption. Table 2 above shows that real interest rates were higher than this during the 1980s and 1990's in all countries except Japan, and that they were at least as high as this on average throughout the period 1960 – 1999 for all countries, despite the inclusion of the period of negative real interest rates in the 1970's.

What really drives the real interest rate is arguable. The real interest rate is the compensation investors want for refraining from using a sum of money today. There is no accurate, empirical way of determining what the long-term real interest rate should be. As a rule of thumb the real interest rate in the long-term should not deviate too much from real growth in the economy. Over the past century production has grown by 2-3 percent annually.

A further reason for choosing a nominal interest rate level of 3.5-4.0 percent is that a low return will only lead to a slow, gradual erosion of the capital. Only at a nominal return of 1.4 percent (calculated on a capital of SEK 58 billion) will annual revenues not cover the current costs, i.e. a loss will arise. Only if Swedish short-term rates were below 3.5 percent in the long-tem would a long-term erosion of the Riksbank's earning capacity occur. But this would occur so slowly that it would be very likely that the political system would take this into consideration. For example the Riksbank could retain a larger share of its profits, and in that way build up its capital more rapidly.

It must also be emphasised that the underlying assumption in this discussion is that the investment is made in short-term risk-free interest-bearing securities. The aim of this is to make clear what the return is on a completely risk-free investment. If the Riksbank takes some risk in its investments the expected returns also increase, but so does the financial risk. This trade-off is discussed in more detail in Chapter 6.

The calculation of capital need is also sensitive to the level of the Riksbank's costs, though not to the same extent as the long-term return level. If the Riksbank's costs should increase or decrease by 20 percent, from a level of SEK 640 million (excluding the cost of banknotes and coin), its capital need would change from SEK 43 to 51 and 34 billion respectively. These variations seem large, but still manageable.

In summary the capital need for the Riksbank's operating costs, excluding banknotes and coins, are calculated to be SEK 32-43 billion. The capital need for the costs of banknotes and coins can be calculated as SEK 8-11 billion. The range is due to the calculation being carried out using an expected return of 3.5 or 4 percent.

4. Risk in the Riksbank's operations

This Chapter discusses the various types of risk that may lead to the Riksbank requiring cost-free capital greater than that needed for its returns to cover the current operating costs. For each type of risk, its cause, probability and the extent of its likely financial consequences in terms of capital need are discussed. However, it should be emphasised that we are dealing with risks that are highly improbable, with consequences that are very difficult to assess. Because of this, the Commission is not presenting exact probability calculations or estimates of the extent of potential losses. Instead we will present a qualitative argument with calculations to indicate approximate capital need to protect against risks.

4.1. Risk in the provision of emergency liquidity assistance

Judgement of the Commission: The Riksbank can provide emergency liquidity assistance if this is required to protect the stability of the financial system, but only to banks which have liquidity problems, not those with solvency problems. These credits can give rise to losses. Both the size and probability of these losses are very difficult to assess. However, a capital need of SEK 10 billion is judged adequate for this.

As part of its task to encourage a reliable and effective payment system the Riksbank has been given the ability to provide emergency liquidity assistance to banks and other financial firms[21] if this is required in order to protect the stability of the financial system. The Riksbank can also issue guarantees with the same aim. This task is regulated in Chapter 6, Section 8 of the Sveriges Riksbank Act.

The need for emergency liquidity assistance, provided with the aim of supporting liquidity, is related to the pivotal importance of the banks to the payment system and the fact that banks are quite vulnerable to liquidity problems. A suspension of payment by one bank may lead to a knock-on effect for other banks and may lead to them also having payment problems. The entire payment system may stop working in such a situation. Taking into consideration the importance of the payment system for the economy in general, it is very important that this can be avoided.

Through its central role in the payment system as the provider of the RIX system, and with its ability to produce legal tender in Swedish krona, the Riksbank is the natural body to provide liquid capital in an emergency situation, i.e. provide emergency liquidity assistance. This is a task that central banks have long held, and one that most central banks are considered to hold.[22]

[21] Emergency liquidity assistance can be provided to financial firms other than banks, but as in practice it is primarily banks that come into consideration, the issue will be discussed in terms of "banks".
[22] For a detailed description of the Riksbank's role as a lender of last resort, see the article "The Riksbank's role as Lender of Last Resort" in the Riksbank´s Financial Stability Report 2003/2.

The Sveriges Riksbank Act is formulated so that the Riksbank may provide credit risk on *special terms* with *the aim of supporting liquidity* to banks and certain other financial firms in *exceptional circumstances*. The aim of the condition *exceptional circumstances* is that the Riksbank may only grant emergency liquidity assistance if this is required to protect the stability of the financial system. That emergency liquidity assistance must only be granted with the aim of supporting liquidity shows that the Riksbank may only grant credit to banks with liquidity problems not banks with solvency problems, i.e. banks that have made substantial losses and whose own capital therefore risks being consumed.

The reason that the Riksbank should not give liquidity support to banks with solvency problems is justified by arguments of economic theory (moral hazard) and also based on a more constitutional perspective. The argument related to moral hazard goes that banks that can expect financial support may be inclined to take greater risks than if they could not expect any support. The possibility of emergency liquidity assistance threatens to lead to increased risk-taking in the banking sector. Limiting support to cases of liquidity and not solvency also limits the threat of increased risk taking.

The constitutional argument is that financial support to a bank with solvency problems risks leading to continuing and persistent losses for central government, thus de facto central government expenditure. Such expenditure must be decided on by Parliament within the framework of the central government budget, and not by a public authority decision. Access to financial support over and above the central government budget also has the same moral hazard issue as does emergency liquidity assistance, and should therefore be limited as far as possible.

This allocation of roles between the Riksbank and the political system was maintained throughout the banking crisis at the beginning of the 1990's. Central government was responsible for support to banks with solvency problems using support measures targeted at individual banks and through the general government guarantee, while the Riksbank made decisions regarding emergency liquidity assistance.

Credit risk arises when the Riksbank grants credit. However, because the Riksbank may only grant credit to banks with liquidity problems this credit risk is limited. Only if the bank cannot repay the loan, not even in the longer term, and the collateral taken by the Riksbank for the credit proves insufficient, does a credit loss arise for the Riksbank. Consequently, this happens only in the case of solvency problems and not in the case of pure liquidity problems. This means that the risk of credit losses is extremely limited.

The problem is, however, that it is difficult at the time to decide whether a bank only has liquidity problems or if there are solvency problems as well. The threat of liquidity problems generally arises in periods of general disquiet in the market and most often in conjunction with the bank's normal lenders questioning its credit worthiness and therefore withdrawing finance. In such a situation, it is difficult for the Riksbank to make a qualified assessment of the bank's credit worthiness, especially because the need for emergency liquidity assistance often arises at very short notice and a decision must be taken by the Riksbank within a few days or, in the worst case scenario, within a few hours. Because of this the risk is always there that the Riksbank, after all, will grant emergency liquidity assistance to banks which afterwards prove to have solvency problems rather than pure liquidity problems. Accordingly, the Riksbank may take credit risks that could lead to losses, despite the credit only being granted in circumstances where the problem can be considered to be purely one of liquidity.

The Sveriges Riksbank Act also specifies that credit is granted on *special terms*, i.e. credit is different to that granted within the framework of the Riksbank's ordinary activities related to monetary policy market operations or credit granted within the framework of participation in the RIX system. Because banks can borrow from the Riksbank at the lending rate (normally 75 points above the repo rate) applicable within the framework of practical monetary policy, as long as they provide satisfactory collateral, it is mainly banks that do not have sufficient collateral to provide that need emergency liquidity assistance. In practice the special terms mean that emergency liquidity assistance can be granted against collateral weaker than would normally be acceptable to the Riksbank, or without collateral at all. It is also possible for emergency liquidity assistance to be granted on special terms representing a lower interest rate than that indicated by the monetary policy framework. This took place during the defence of the krona in September 1992, when Swedish banks obtained emergency liquidity assistance at a subsidised interest rate in order to minimise the impact of the 500 percent key interest rate. In a monetary policy regime with a floating exchange rate and target inflation rate it is difficult to see any reason for granting emergency liquidity assistance at a subsidised interest rate.

The collateral normally accepted by the Riksbank is government bonds and other fixed-income instruments with high credit worthiness. In most cases these securities are also eligible for refinancing on the market, which implies that only when this type of security is no longer available will emergency liquidity assistance by needed by a bank. Even if because of this the Riksbank cannot obtain normal collateral for its lending, there is the possibility of obtaining other collateral, which per se is not as credit worthy. However, the Riksbank can compensate for this by requiring a greater haircut in order to compensate for the risk that the collateral loses value in relation to the lending date. However, the Riksbank can compensate for this by requiring a greater haircut in order to compensate for the risk that the collateral loses value in relation to the lending date. By doing this the Riksbank can limit its risk of loss to a certain extent.

It is very difficult to estimate both the size and probability of losses which the Riksbank could suffer in conjunction with the provision of emergency liquidity assistance. In assessing the risk of loss it is relevant to discuss how large an exposure the Riksbank should have to a bank, and also the proportion of this exposure that risks being lost if the bank suspends payments. With regard to the latter issue it is unlikely that the Riksbank would lose a large proportion of the loan. This is partly because the Riksbank is able to obtain collateral for the loan, and partly because it is in the first instance large, well-diversified banks which need emergency liquidity assistance where the exposure is very large.

The latter is because this is the nature of the very large banks in Sweden, and also because were emergency liquidity assistance granted to smaller banks the exposure would be small. There is little experience of bank bankruptcies in Sweden, but statistics from the USA show that recovery from bank bankruptcies is often high. A study of over 1,500 bank bankruptcies in the USA between 1984 – 2002 showed that the average degree of recovery was 79 percent.[23] It is reasonable to expect that the degree of recovery is greater for large banks. For the 38 banks considered large (more than USD 1 billion in assets) the degree of recovery was 87 percent. These banks were still small in relation to the large Swedish banks which have average assets of over USD 4 billion. Against this background is seems improbable that the Riksbank would lose more than 10 percent of its exposure if a bank defaulted on a large amount of emergency liquidity assistance.

Exposure is difficult to assess. Each of the major Swedish banks' balance sheet totals is between SEK 1,500 and 2,500 billion. Even a loss of financing making up a small portion of the balance sheet leads to a need for financing amounting to tens or hundreds of billions. However, the major banks manage their liquidity risk actively to avoid being exposed to a situation in which lenders no longer wish to finance the bank. They issue securities in order to avoid short-tem financing and try to match incoming and outgoing cash flows. An exception is deposits, which the banks consider relatively stable, even though they are contractually accessible at short notice. This assessment is based in part on a large proportion being underwritten by the deposit guarantee and that the account holders do not therefore need to withdraw their funds even if the bank's solvency is in question, and in part based on experience from the banking crisis. Even before the general bank guarantee was given, there were few savers who withdrew their funds despite the financial position of the banks being openly questioned.

Their liquidity management means that the banks should not suddenly experience extremely large liquidity needs. It is not possible to say exactly how large the exposures can be, but it seems improbable that the Riksbank would have to finance hundreds of billions of krona at very short notice.

If the Riksbank were to lend SEK 100 billion and had a risk of loss of 10 percent this would mean a capital need of SEK 10 billion. Bearing in mind that the probability of the Riksbank providing emergency liquidity assistance to banks with solvency problems is so small, and there is still potential for obtaining collateral, the Committee believes that there are no grounds to imagine final losses greater than approximately SEK 10 billion.

It is also possible to make comparisons with central government support for the banking sector in the 1990's banking crisis, even if this was support provided by central government and not the Riksbank. The total support provided at that time, with the exception of the general bank guarantee, has been calculated as approximately SEK 65 billion and the short-term cost of that support is estimated to be approximately SEK 35 billion.[24] The fact that this support was provided to banks with significant solvency problems should be taken into account, as should the fact that this support was not given in the form of normal credit but as share capital or variations on this. In addition, this support has not proved to be a cost in the long-term because the increase in value of central government's share holdings in the relevant banks has been great.

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[23] Resolution Costs and the Business Cycle, Kathleen McDill, FDIC Working Paper 2004-01, March 2004.
[24] Jennergren, P. & Näslund, B., (1997), "Bank Crises and How Deal with Them" (report to Parliament's Auditors).

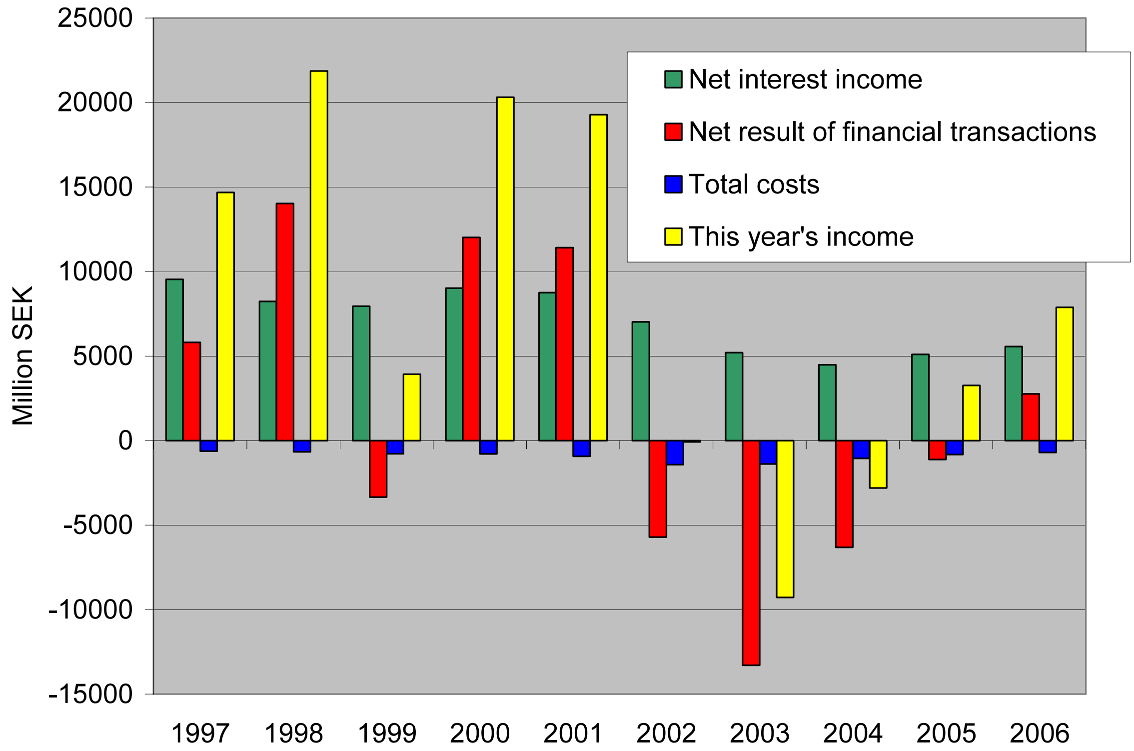
It is difficult to draw any far-reaching parallels from these values. However, the Commission's judgement is that the risk of loss of SEK 10 billion discussed above does not seem too low, considering that we are talking about providing credit to banks that should not have solvency problems and where there is a potential for collateral. In this context is should also be emphasised that the Riksbank did not incur any losses during the banking crisis and that the established division of responsibilities between central government and the Riksbank, under which central government provides support for solvency problems and the Riksbank for liquidity problems, was maintained throughout the crisis.

4.2. Risk in the management of the foreign exchange reserve

The Riksbank's assets consist mainly of the foreign exchange reserve, i.e. investments in interest-bearing securities in foreign currency and gold. The financial risk facing the Riksbank is associated with these assets. The risk associated with these financial assets can be divided into interest rate risk, i.e. the risk that the general interest rate levels change and mean that the securities fall in value, and currency risk, which is the risk that the foreign currencies in which the securities are denominated, change in value in relation to the Swedish krona.

The risk in the foreign exchange reserve results in a relatively large variation in yield for the Riksbank from year to year (see Figure 7). The Riksbank has a relatively stable net interest income and stable costs but the net income from financial transactions varies greatly. It is under this income item that value changes in assets are reported. It is above all exchange rate fluctuations that give rise to the large variation.

***Figure** 7. Profit and loss account items for the Riksbank 1997-2006*



Risk in the foreign exchange reserve is measured by the Riksbank using the prevalent measure of risk, Value-at-Risk[25]. This measure shows how much the Riksbank risks losing with a specific probability over a particular time period.

The probability level used here is 1 percent. Calculated for an annual time horizon the VaR value is approximately SEK 21 billion, i.e. given the current composition of the foreign exchange reserve, the Riksbank risks losing SEK 21 billion or more with a 1 percent probability over one year.

This indicates that currently the foreign exchange reserve entails a significant financial risk for the Riksbank and whether this is justified is debatable. As stated in Chapter 4, due to the current application of the Sveriges Riksbank Act, the size of the foreign exchange reserve is a result of the size of the liabilities side of the Riksbank's balance sheet, not the result of an assessment of how large a foreign exchange reserve the Riksbank needs based on an analysis of foreign exchange policy requirements. Thus, there is good reason to discuss certain basic issues related to the foreign exchange reserve. The first is what, on the whole, is needed from a foreign exchange reserve. The second is whether there are grounds to eliminate currency risk in the foreign exchange reserve. This could be achieved by matching the foreign exchange reserve in such a way that it was financed by borrowing in foreign currency or by hedging the currency risk on derivative markets. The

[25] Value-at-Risk is a measure which, based on earlier price movements in financial assets, calculates how much an asset manager risks losing in SEK, with a given probability level. One of the advantages of VaR is that it calculates a risk value in the form of an amount, which means that it can be used to compare risk between different types of asset in an investment portfolio, for example fixed-income instruments and own capital.

third issue is how large should the foreign exchange reserve be. These issues are discussed below.

4.2.1. The need for a foreign exchange reserve

Judgement of the Commission: The need for a foreign exchange reserve appears to be limited given the present foreign exchange rate regime with a floating exchange rate.

The fundamental purpose of a foreign exchange reserve is to give a central bank the possibility of acting on the foreign exchange market to influence the national exchange rate. By selling foreign currency and buying the domestic currency on the market, the central bank can try to reinforce the exchange rate, or to weaken it by acting in the opposite way.

The need to act on the foreign exchange market exists primarily if foreign exchange policy has the objective of a fixed exchange rate. At present the monetary policy objective of the Riksbank is a target inflation rate. The exchange rate regime is not determined by the Riksbank but by the government. The government has decided that the Swedish krona should float and so there is no exchange rate target. While the exchange rate does affect monetary policy by influencing inflationary pressure in the economy, it is only one of many economic factors which have such an effect. So the exchange rate does not have a unique role in the Riksbank's monetary policy.

The Riksbank has intervened on the foreign exchange market on a few occasions after the switch to a floating exchange rate in 1992. The last time was in 2001 when the Swedish krona weakened relatively sharply and currency interventions were made to counteract this decline. At the time the intervention was seen as a supplement to the normal focus of monetary policy, which is to determine short-term rates.

The analytical basis of the Riksbank's monetary policy, carried out to achieve a target inflation rate with a floating exchange rate, does not identify a need to intervene on the foreign exchange market to affect the exchange rate. There can be grounds to intervene in the foreign exchange market, mainly to signal the direction of monetary policy[26]. Nevertheless, the Riksbank should not need to intervene in the foreign exchange market to the extent that it risks major losses. So it does not appear that a foreign exchange reserve can be justified when a floating exchange rate is being operated. However, a foreign exchange reserve may be required in readiness for a switch to a fixed exchange rate.

Today a fixed exchange rate appears remote from a Swedish viewpoint. There is a broad political consensus that a monetary policy directed towards inflation targeting with a floating exchange rate has been an effective component of economic policy over the past decade. Swedish monetary policy has received good marks in several international assessments, the latest in an evaluation carried out by researchers on behalf of the

[26] Heikensten, L. & Borg, A. (2002), The Riksbank's foreign exchange interventions - preparation, decision and communication, Economic Review 2002/1

Parliamentary Committee on Finance.[27] Target inflation rates with floating exchange rates are being used by an increasing number of central banks throughout the world, while at the same time the wisdom of using a fixed exchange rate as a monetary policy regime is being increasingly questioned. It is still mainly used in emerging countries and developing economies. Denmark is the only established industrialised economy which applies a fixed exchange rate (if one accepts that countries participating in a currency union or smaller countries which use another country's currency cannot be considered to have a fixed exchange rate).

In view of this it appears improbable that Sweden will switch to a fixed exchange rate in the foreseeable future. Sweden is part of the second stage of the EMU but not the third stage. One of the criteria for participation in the third stage is that the national currency must have been stable against the Euro for a certain amount of time before accession to the currency union. If possible this stability is created through participation in the ERM II exchange rate policy cooperation, in which a national currency must not deviate outside a set band around the Euro. Participation in this cooperation means that the target for the exchange rate is fixed, and that consequently there is no need to make currency interventions. However, in all probability accession into ERM II would occur when a political decision on participation in the Euro had already been taken, this means that the time period for ERM II cooperation should be relatively short. Similarly, it should be relatively unlikely that the exchange rate is put to the test during this period in such a way that it would be necessary to intervene extensively in the foreign exchange market.

In the event of Euro membership the ECB requires the central bank to maintain a foreign exchange reserve. However, this does not mean that a foreign exchange reserve is necessary as long as Sweden is outside the Euro, it is fully possible to invest in currency assets prior to membership. But it should be noted that Sweden's membership of the European System of Central Banks (ESCB), means that Sweden as a member of this organisation has undertaken to have sufficient financial resources to be able to discharge ESCB-related tasks. As an example Articles 29 and 30.4 of its statutes state that a member must be prepared to contribute capital and transfer currency assets to the ECB, and in Article 33 the member undertakes to contribute in the event of losses by the ECB. The extent of this is not set.

To summarise, the need for a large foreign exchange reserve appears remote for the Riksbank. However, our analysis of this has not been so comprehensive that it can be completely dismissed. The purpose of the discussion in this section has been to give some perspective of the risk associated with the foreign exchange reserve.

[27] Giavazzi, F. & Mishkin, F. (2006), An Evaluation of Swedish Monetary Policy between 1995 and 2005, 2006/07:RFR1.

4.2.2. Should the foreign exchange reserve carry currency risk or should this risk be neutralised?

Judgement of the Commission: The Riksbank should neutralise currency risk in its management of the foreign exchange reserve by matching current currency risk. Matching can be achieved through currency lending or positions in derivatives, but this choice does not affect the capital need.

As we demonstrated in the previous section the current foreign exchange reserve entails a significant foreign exchange rate risk for the Riksbank, so there are grounds to discuss both the size of the foreign exchange reserve and the financial risk it entails. Because the need for currency intervention seems relatively limited with a floating exchange rate, the following discussion is founded on circumstances arising from a fixed exchange rate.

The Commission's international comparison shows that certain countries choose to have a matched currency position in the foreign exchange reserve, i.e. the currency risk in the foreign exchange reserve has been neutralised. This applies to Denmark for example, one of the few industrialised countries that use a fixed exchange rate policy and therefore have an active need for a foreign exchange reserve. Matching can be achieved by financing the foreign exchange reserve with borrowing in the same currency as the reserve consists of. Alternatively, the currency risk can be hedged through positions in the derivative market. The Danish central bank applies a combination of these two methods.

Neutralising currency risk does not affect the potential to make currency interventions. On the other hand it does affect the central bank's income. When the currency position is open, as it is for the Riksbank today, movement in the exchange rate of the Swedish krona means that the income varies from year to year (as shown in Chapter 4). If the currency risk is neutralised, income is only affected by the interest rate risk that exists in the reserve. Today's large variation in income is a drawback, it introduces risk into the Riksbank's balance sheet, risk that must be managed with capital or in other ways.

However, it is also important to evaluate what the effects are when the Riksbank actually does make currency interventions. So long as the interventions are successful no substantial negative effect on income should occur. In this case the Riksbank succeeds in influencing the exchange rate getting it close to the target exchange rate so the variation should not be significant. Instead the relevant question is what happens if interventions fail and the exchange rate must be floated.

If, as today, the currency position is open, a failed intervention will have the same effect as that arising during the defence of the krona in 1992. When the Riksbank, with the objective of defending the value of the Swedish krona, sells foreign currency and buys large volumes of Swedish krona the result is that the open currency position decreases. As long as the currency position is still positive, in so far as the Riksbank has a net worth of foreign currency assets, the floated foreign exchange rate will mean that the open currency position increases in value, i.e. there will be a positive effect when measured in Swedish krona.

If, on the other hand, the currency position is neutralised from the outset, the Riksbank will obtain a negative currency position if it intervenes. If the Swedish krona is floated this negative currency position will increase in value, i.e. there will be a negative effect.

It is extremely difficult to assess how large this effect could be. It requires an assessment of how large a negative currency position the Riksbank would build up in defence of the krona as well as an assessment of how large the devaluation would be if the defence of the krona was stopped. It is still possible to give some guidance based on experience from the Swedish defence of the krona in 1992, and the experience of the United Kingdom and Denmark from their interventions.

During the defence of the krona in 1992 the Riksbank bought SEK 160 billion.[28] The fixed exchange rate was floated on 19 November 1992. From an initial fall of 20 percent the exchange rate bottomed out after just over a year to a fall of a little over 30 percent. So if the Riksbank had had a neutralised currency position at this point, it would have lost something between SEK 30 – 50 billion (20-30 percent of SEK 160 billion). In comparison the United Kingdom, during its defence of Sterling in the 1992 ERM crisis, changed its currency position by approximately USD 40 billion, i.e. in monetary terms more than Sweden, but in terms of the size of the British economy and currency, considerably less.[29]

The defence of the Swedish krona in 1992 should be seen as a thorough and extensive defence of a fixed exchange rate with a very high key interest rate, 500 percent, compared to other currency crises. Danmarks Nationalbank has published a review of the size of its currency interventions in the years between *1986 and 2003.*[30] This reveals that the maximum intervention in one day was the equivalent of approximately SEK 30 billion and the maximum intervention in one week was the equivalent of SEK 43 billion. The risk of loss at these levels of intervention, assuming an exchange rate depreciation of 20-30 percent, would be in the order of magnitude SEK 6 – 13 billion.

In summary normally there are advantages to neutralising the currency position in the Riksbank's balance sheet, but the disadvantage is that if the Riksbank needs to intervene in the foreign exchange market the risk of loss can be large. The judgement of the Commission is that the Riksbank should have a matched currency position. The reasons for this are as follows.

The discussion on the need for a foreign exchange reserve showed that it would seem improbable that Sweden will switch to a fixed exchange rate in the foreseeable future. The exception is if Sweden enters into ERM II cooperation prior to joining the Euro. This would be for a limited period, in all probability a few years, following a political decision on joining the Euro. It seems unlikely that the fixed exchange rate would be put to the test in such a situation, risking major losses. There is also the possibility of the Riksbank obtaining support from the European Central Bank in such circumstances. Both the size of interventions and the risk of having to float the fixed exchange rate seem limited. If the

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[28] Kokko, A (1999): The Asia crisis: similarities with the Swedish crisis, Ekonomisk Debatt 1999, 27, no. 2
[29] Documentation from the defence of Sterling in Britain is available at the Treasury at http://www.hm-treasury.gov.uk./about/information/foi_disclosures/2005/foi_erm_2005.cfm.
[30] Financial Management at Danmarks Nationalbank, Danmarks Nationalbank 2004

currency position was matched there would be very little risk of the Riksbank incurring losses on a scale equivalent to those incurred during the defence of the krona in 1992.

Should the Swedish government decide to switch to a fixed exchange rate in circumstances other than those discussed here, the Riksbank could change its currency position, i.e. switch from a neutralised to an open currency position. This would reduce the vulnerability to losses in the event of currency interventions. Further facets of the relationship between the political system and the Riksbank with regards to the management of losses from currency interventions are discussed in Chapter 8.

The Commission sees no reason to take a position on whether matching should be achieved through currency lending or positions in derivatives. Probably this choice is mainly influenced by factors related to practicality and efficiency, factors which the Riksbank can be expected to be the best judge of. Neither does this affect the Riksbank's capital need.

There are certain constraints to the potential for matching foreign exchange reserve risk. In part due to undertakings made by the Riksbank to the IMF, and in part by central banks being regulated by international agreements in their trading and position-taking in gold. This leads to some, in this context minor, risk, which will be discussed the Section on Other Risks.

4.2.3. How large should the foreign exchange reserve be?

Judgement of the Commission: The Riksbank should have a neutralised currency position. This would make the size of the foreign exchange reserve of minor importance to the analysis of the Riksbank's capital need. It appears improbable that Sweden will switch to a fixed exchange rate in the foreseeable future, so the risk of loss can be restricted to those interventions which could arise for a short period of time in conjunction with any entry into the Euro. A buffer capital of SEK 5 billion should be sufficient to cover this risk.

The table below shows the size of the Riksbank's foreign exchange reserve today compared to other countries. It specifies the size of the foreign exchange reserve in absolute amounts (Swedish krona) and in relation to GDP. Norway and Denmark have by far the largest foreign exchange reserves in relation to GDP of the countries in the comparison, while Sweden is relatively close to the average. However, Sweden has the largest proportion of its foreign exchange reserve in its balance sheet.

Table 3. *The foreign exchange reserve in a number of selected countries*

	Foreign exchange reserve in SEK billion	Foreign exchange reserve as a % of GDP	Foreign exchange reserve as a % of Balance Sheet	Exchange rate system
Norway	337	15,8%	90%	Floating
Denmark	253	13,5%	54%	Fixed (+/- 2.25 %)
Finland	84	6,0%	50%	Euro system
Germany	773	3,8%	25%	Euro system
Netherlands	166	3,7%	30%	Euro system
United Kingdom	379	2,4%	20%	Floating
Canada*	240	3,4%	1%	Floating
New Zealand*	37	5,6%	60%	Floating
Sweden	195	7,6%	94%	Floating
Average:	**274**	**6,9%**	**47%**	**-**

Source: Annual reports, Eurostat, World Fact Book www.cia.gov 7 Dec 2006
**GDP estimated for 2005*

Currency interventions are made by buying or selling Swedish krona on the foreign exchange market. The intention of holding assets in foreign currency is that these can be exchanged for Swedish krona when the currency trade is made. This is necessary if the currency intervention is to be made on the spot market. In the past twenty to thirty years trading on the foreign exchange market has increasingly been carried out in derivative markets. According to the Riksbank's statistics covering the trade in Swedish krona, total daily turnover was SEK 270 billion a day in 2005, of which SEK 58 billion (21 percent) was on the spot market. So most trade was carried out on derivative markets where currency swaps were mainly used. The daily turnover in these instruments was up to SEK 182 billion. This pattern is in no way unique in the Swedish foreign exchange market, the same is true for other developed markets.

So much of the trade and price development on the foreign exchange markets takes place in the derivative markets. Because of this, central banks need not take action in the spot markets in order to manipulate the foreign exchange rate. Just as for other foreign exchange market actors it is now normal for central banks to use the derivative markets for their currency interventions. According to a 1997 study, 7 out of 14 participating central banks used derivative markets for their currency interventions[31], among them the Riksbank.

In view of this we can discuss whether there is a need for a foreign exchange reserve in the form of nominal currency assets in order for a central bank to be able to conduct currency interventions. One reason that a need might exist after all, is the possibility that derivative markets would not work well in times of turbulence. In the majority of the extensive exchange rate defences of recent times however, the derivative markets have been used, and have been shown to work, even in periods of turbulence. There is no known case in which a central bank in a developed economy has not been able to act in the derivative markets.

[31] BIS (1997) "Implementation and Tactics of Monetary Policy" Bank for International Settlements Conference Papers No. 3, (March) p 332.

The Commission's view that the Riksbank should have a neutralised currency position means however, that the size of the foreign exchange reserve is secondary in the analysis of the Riksbank's capital need. As discussed in the previous section it is the size of intervention which is crucial to any risk of loss. In turn this is not dependent of the size of the foreign exchange reserve in the form of the value of the currency assets in the Riksbank's balance sheet. The Commission is therefore refraining from making a judgement of how large the foreign exchange reserve should be. It would seem more suitable for the Riksbank to make an assessment as to whether it is appropriate to have currency assets on the balance sheet, how large these assets should be, and whether they should be neutralised by borrowing in foreign currency or if this should take place on the derivative markets. None of these assessments has other than marginal impact on the Riksbank's capital need.

In summary the Commission believes that the Riksbank should have a matched foreign exchange reserve, the size of which has no bearing on the Riksbank's capital need. The risk of loss which needs to be taken into account in order to assess the Riksbank's capital need should, in this case, be based on the risk of incurring losses in conjunction with interventions on the foreign exchange market to defend any future fixed exchange rate. As a switch to a fixed exchange rate seems unlikely in the foreseeable future, other than in conjunction with entry into the Euro, the risk of large currency interventions and the risk of major losses associated with them, seems limited. Because of this, the Commission considers that the capital needed by the Riksbank to cover losses associated with management of the foreign exchange reserve is relatively small. Denmark's risk of loss in the interventions reported above, were estimated to be 6-13 billion. In this case interventions went on for an extended period of time. As the Commission does not see this as probable in Sweden, it seems realistic to consider a risk of loss of no greater than approximately SEK 5 billion when evaluating the Riksbank's capital need for the management of the foreign exchange reserve.

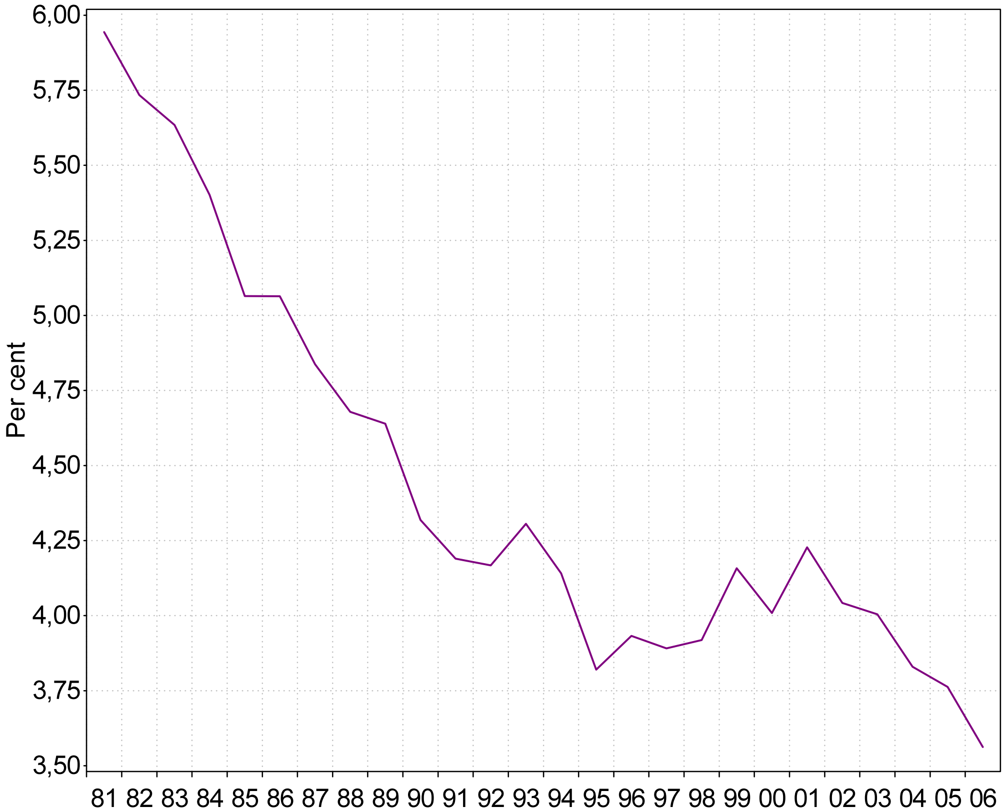
4.3. Reduced currency in circulation

Judgement of the Commission: If the currency in circulation decreases, the Riksbank's earning capacity also decreases. While this risk exists, it is improbable that a sudden and heavy fall in the currency in circulation will occur.

One of the risks identified for the Riksbank is a decrease in the currency in circulation. In contrast to the two previously identified risks, this is not a risk of loss but a risk of reduced earning capacity. It arises because the free financing represented by the currency in circulation could decrease. However, the effect on financial independence would be the same.

What governs the size of the currency in circulation is the public demand for banknotes and coin, which is difficult for the Riksbank to influence. Cash payments have to an ever greater extent been replaced by electronic payment methods, above all card payments. There has been an expectation that this would lead to a reduced demand for cash, so that there would be a reduction in outstanding banknotes and coin.[32] Outstanding banknotes and coin have fallen as a share of Swedish GDP (see Figure 8). However, the change mainly took place prior the 1990's, before the wide acceptance of electronic payments. The Riksbank has estimated that the proportion of commerce paid for with cash decreased from 76 to 58 percent in the 1990's.[33] There was no corresponding reduction in outstanding banknotes and coin. It is uncertain to what extent the increasing proportion of electronic payments in normal commerce will actually lead to reduced currency in circulation, this is because the public demands banknotes for other reasons than to carry out payments.

***Figure 8**. Outstanding banknotes and coin (M0) as a proportion of GDP*



Source: Reuters EcoWin

By using a model to estimate how much cash use can be explained legitimately we can obtain the converse "unexplained" proportion of cash use. This can be seen as a measure of how much cash is required in the shadow economy, primarily untaxed or otherwise criminal activities. The unexplained volume of outstanding cash increased from 3.8 to 6.5 percent of GDP between 1990 and 2004.[34] Taking into account that there is an increased focus on economic criminality, money laundering etc. and thus on the importance of cash to the shadow economy, active measures to hinder the use of cash for such ends are

[32] For a discussion on this, see Nyberg, L & Guibourg, G. (2003): Card payments in Sweden, Sveriges Riksbank Economic Review 2/2003.

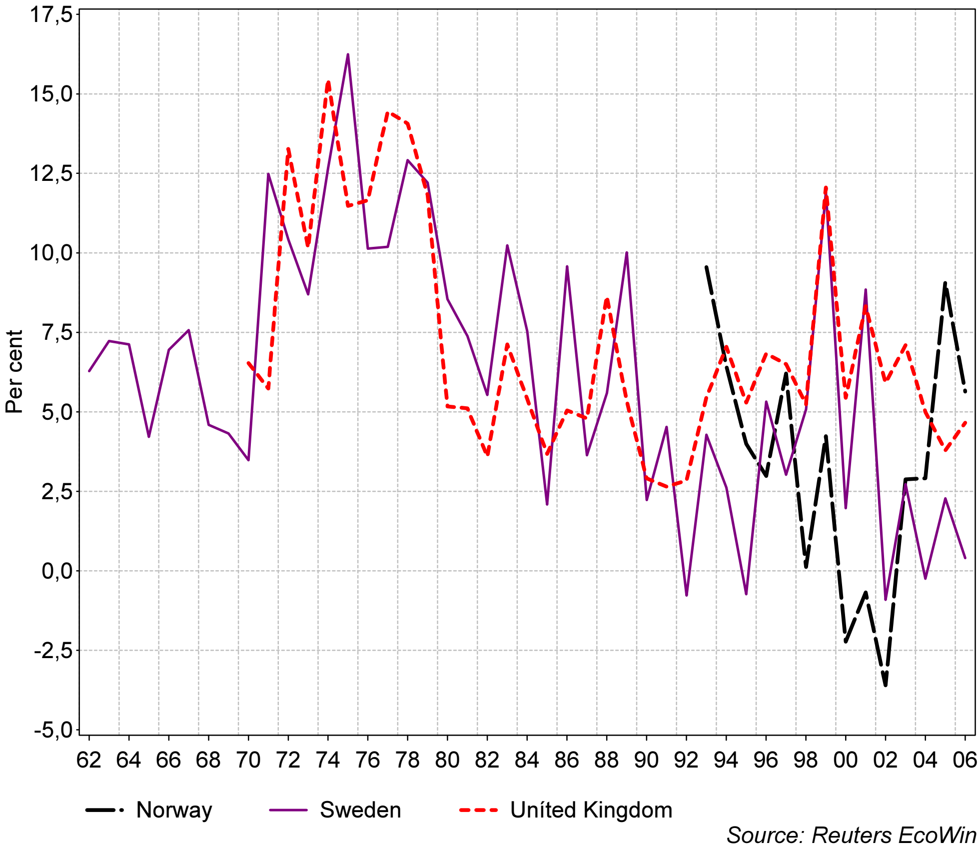
[33] Andersson, M. & Guibourg, G., (2001): The use of cash in the Swedish economy, Sveriges Riksbank, *Economic Review* 2001/4.

[34] Guibourg, G. & Segendorff, B. (2007): The Use of Cash and the Size of the Shadow Economy in Sweden, The Riksbank Working Paper Series No. 204, March 2007.

conceivable. If such measures were taken and proved successful, currency in circulation could be reduced. There could be grounds to pay particular attention to the development of the size of currency in circulation in such cases.

From our perspective it is relevant to look at whether outstanding banknotes and coin may decrease in nominal terms, not as a proportion of GDP. The reason for this is that the fundamental issue facing the Commission is whether currency in circulation could decrease in such a way that the Riksbank's earning capacity from seigniorage would be radically weakened. Figure 9 shows the percentage annual change in currency in circulation for three countries.

Figure 9. *Annual percentage change in currency in circulation for three countries.*



In the 1970's and 1980's currency in circulation increased. This is natural taking into account the high inflation in those decades. In the 1990's the average rate of change decreased across the board, probably in the first instance as a result of the reduction in inflation, but was in most cases positive. Minor negative changes, in the order of magnitude of 1 percent, occurred in three different years in Sweden.

Norway showed a more steady reduction in the rate of currency in circulation at the end of the 1990's, and at the beginning of the 2000's it was negative for several years, at most by almost 4 percent in 2002. The accumulated change in the years 2000-2002 was over 6 percent. It should be noted that there was a greater demand towards the end of 1999, in all probability caused by worries about the millennium bug. One reason for developments in Norway in last part of the 1990's and the beginning of the 2000's was that Norway took active steps to reduce the use of cash, in particular by introducing fees on cash withdrawals. In recent years this development has been reversed and currency in circulation has increased faster in Norway than in the other two countries.

It is, of course, difficult to draw concrete conclusions about the risk of a decrease in currency in circulation from historical developments. However, it can be established that up to now currency in circulation has not shown any negative change from one year to another. There is a fairly large variation in the year to year rate of growth, but this is about differences in a positive rate of growth rather than negative change. In light of this it is difficult to see that the risk of a dramatic fall in currency in circulation is great in the short-term. If there is a change it is more likely to occur gradually, over a number of years.

As shown above own capital and currency in circulation are in part exchangeable as both provide free financing. The currency in circulation is currently substantial, about 112 billion. Consequently if seigniorage is used to finance current operating costs, there is a substantial margin for financial independence, even in the event of a severe reduction in currency in circulation.

4.4. Other risks

The Riksbank also has risks other than that discussed up to now, not of the same importance but still needing discussion. These consist of credit risk other than for emergency liquidity assistance, operational risk and the remaining risk in asset management, which cannot be neutralised in the same way as currency risk in general.

4.4.1. Credit risk in operational activities

Judgement of the Commission: The Riksbank's credit risk in its operational activities is not of a scale that it affects the Riksbank's capital need.

The Riksbank provides credit to banks in its operational activities. This is credit given in the framework of the central payment system which the Riksbank provides, the RIX system, and credit through repo transactions used in order to implement monetary policy.

The RIX system is used to manage payment and liquidity equalisation between the banks. For the system to work, the banks need to have substantial surpluses or deficits in their accounts with the Riksbank for short periods during the day. A deficit means that the Riksbank provides a credit to the bank in question. However, the account is equalised at the end of the day and overnight lending is minimal, only SEK one or two million. All banks in Sweden are connected to RIX, either directly or indirectly via an account with one of the RIX connected banks. The RIX system offers the banks an effective way of managing their cash flows. The banks are allowed to have surpluses and deficits in their RIX accounts. In practice having a deficit in the RIX account means that the bank has received credit from the Riksbank. This credit may be large, tens of billions of krona, but consequently it has a very short maturity.

In order to limit the credit risk inherent in this type of credit, the Riksbank requires the bank to provide collateral in the form of securities with particularly low credit risk[35]. This collateral limits the credit risk in this business significantly. If the collateral is made up of government securities issued by the Swedish central government, or by central governments with an equivalent credit worthiness, the remaining credit risk can be deemed so low as to be negligible in the view of the Commission. Even securities issued by companies are approved as collateral. However, in this case several conditions are imposed which mean that the credit risk can also be deemed very limited.

In the first place the Riksbank only accepts securities with very high credit worthiness. And secondly there is a daily marking to market of the securities. If their value is below 99 percent of the value of the credit, the Riksbank requires further collateral. This means that the Riksbank only carries the risk of a decrease in value in the collateral for one day. Thirdly, the Riksbank will only appropriate the collateral if and when the debtor itself defaults. The probability that the debtor defaults at the same time as the collateral falls in value significantly is extremely small. With regard to its task of evaluating the Riksbank's capital need, the Commission judges the credit risk arising from lending operations in RIX to be negligible.

In its 2006 financial statement, the Riksbank's monetary policy repo transactions amounted to approximately SEK 7 billion. In practice a monetary policy repo works like a collateralised loan. The Riksbank sets the same high credit worthiness requirements for the counterparties and collateral in repo transactions as in lending in the RIX system. The maturity of these transactions is also very short, one week. These factors limit the risk inherent in this type of credit, which is not considered to entail risk on a scale that need be taken into account when evaluating the Riksbank's capital need.

4.4.2. Operational risk

Judgement of the Commission: The Riksbank's operational risk generates a very limited capital need.

According to the Basel II rules, operational risk is defined as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events". In practice this can mean many different types of loss such as that arising from fires in buildings, IT system failures, fraud and negligence. But common to all types of operational risk is that it all arises inevitably from undertaking specific activities. Many other types of risk such as financial risk are part of conscious risk-taking, but not operational risk. Nevertheless, it is possible for an organisation to a degree to affect the scale of the operational risk to which it is exposed. Investing in new IT systems can reduce the risk of IT failure and introducing extra checks on staff can reduce the risk of internal fraud and negligence. Some operational risk can be underwritten. However, it is extremely difficult to quantify the implications of this type of risk reducing measure, and there will always be some residual level of operational risk.

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[35] The securities accepted as collateral are regulated in the Rules and Regulations for RIX laid down by the Riksbank. The latest version of these came into force 1 August 2005.

The scale of operational risk in an organisation depends to a large extent on its operational activities. An example would be that a company that carries on operational activities that could be dangerous for others may run a serious risk of becoming liable to pay damages, or that a company that handles large financial flows risks being defrauded, robbed or otherwise subjected to attempts to steal the company's funds. The Riksbank has several identifiable activities incurring this type of risk. The RIX system entails the handling of large financial flows, as does the financial trade carried on for the management of the foreign exchange reserve. This means exposure to embezzlement by personnel managing these activities. Handling cash incurs the risk of robbery. The RIX system is central to the functionality of the entire payment system and because of this, there is an intense vulnerability to operational stoppages of a technical nature. This means that reliability requirements are also very high. In the first instance operational problems in the RIX system do not constitute a risk of financial losses, but it cannot be precluded that the Riksbank would be liable to pay serious damages if shortcomings in the RIX system lead to participants or their customers incurring large losses.

It is not possible in any meaningful way to more specifically quantify this risk for the Riksbank. Some guidance can be obtained from how the regulation of operational risk is managed for the banking sector. In itself the operational activity of the Riksbank is significantly different to that of a bank, but some risk indicators can still be obtained from it. According to the new capital adequacy rules that came into force globally in 2007, banks must hold capital to cover operational risk. The easiest method of calculating this capital need specifies that a bank must hold capital for operational risk corresponding to 15 percent of turnover (for a bank this is operating income, i.e. net income after interest and provisions, IT costs, credit losses etc.). The Riksbank has had highly variable revenues due to changes in the value of the Swedish krona. More normal levels of revenue, measured in the same way as those of the banks, are around SEK 5 - 10 billion in recent years. So 15 percent of this would give a capital need in the order of magnitude of SEK 1 billion. This is a fairly small amount in relation to the size of the balance sheet.

4.4.3. Other financial risks in asset management.

Judgement of the Commission: The financial risk related to the gold reserve decreases over time but is initially calculated to incur a capital need of SEK 8 billion. Other risks are limited.

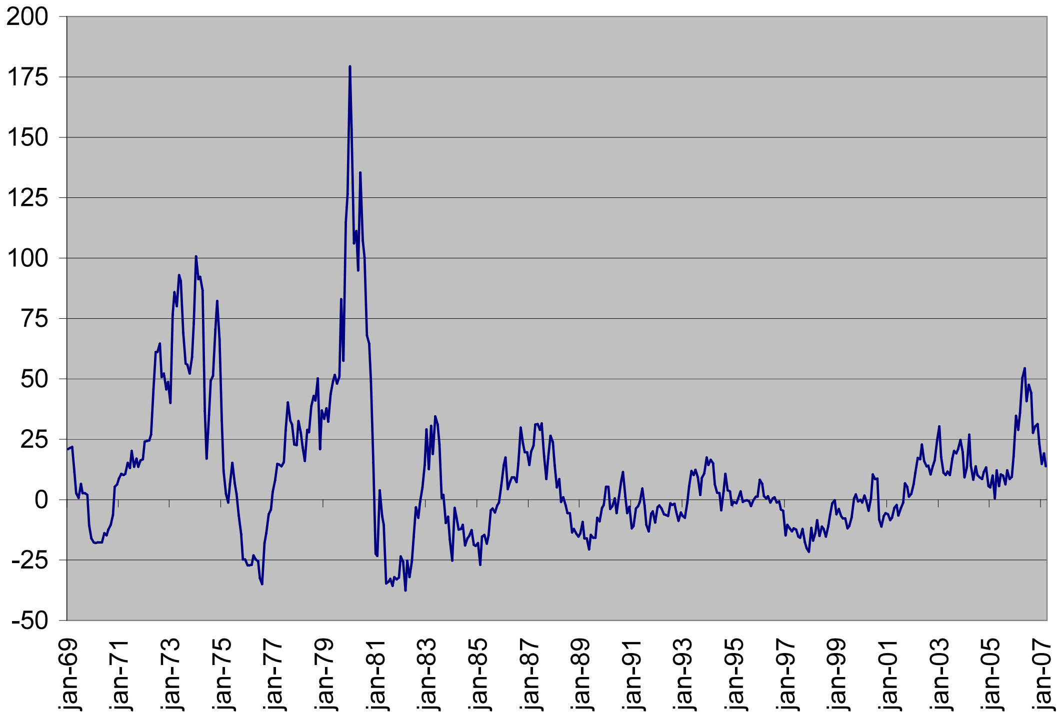
In Section 4.2, we discussed the currency risk that arises because the Riksbank holds a foreign exchange reserve and can be expected to intervene on the foreign exchange market in certain circumstances. The Commission made the judgement that the currency risk posed by this activity should be neutralised. However, it was established that certain risks could not be fully neutralised, these are discussed below. Furthermore, there are other financial risks in asset management, first and foremost interest rate risk, which are dwarfed by the much larger currency risk. Nevertheless they exist, and if the currency risk is neutralised they will become more visible. With the currency risk neutralised the rest of the asset management will need a different focus. There is no point in discussing this on the basis of the current interest rate risk. The Commission's view of the asset management's focus and risk tolerance is discussed in Chapter 6.

The Riksbank's gold reserve amounts to over SEK 20 billion. To a certain extent this is a hangover from the old days, however it can also be seen as a valuable asset in times where other assets are not accepted. Currently the Riksbank considers its holdings in gold to be too large.[36] But gold is not managed in the same way as foreign currency assets. Because central banks hold a significant proportion of the world's gold, their trade on the gold market is potentially very significant for its price. Were the central banks generally to be more interested in selling gold, which they have been recently, there is a risk of the price plummeting in a way that would be unfortunate for the central banks themselves. A number of the world's major central banks have therefore agreed how the gold trade should be carried on by setting out the volumes at which gold can be sold. Until now this agreement has run for five years at a time. The agreement also states that there must be no trade on derivative markets that circumvents the agreed value of gold transactions. For this reason it is not possible to neutralise the value of the gold reserve on derivative markets or to reduce the Riksbank's position in gold at a rate that it chooses itself. Thus the gold position should be seen as remaining open.

The Riksbank calculates a VaR measurement of 99 percent confidence for the gold reserve. The capital need for the risk of loss in line with this measurement amounts to SEK 12.5 billion. This should be seen as an exceptionally large price risk, as it corresponds to a fall in the price of gold of almost 60 percent. The volatility of the price of gold has been high in the past year and, as this volatility to a large extent drives the VaR measurement, there is cause to look at the price from a slightly longer perspective. In the longer term the annual rate of change has also varied considerably (see Figure 10). However, were we to look at the greatest annual price change in the 40 year period reported, instead of the VaR measurement, we would see that this was approximately 35 percent.

[36] According to the 2006 annual report.

__Figure 10__. Development of the price of gold expressed as an annual percentage change



A drop in price of 35 percent would result in a loss of approximately SEK 8 billion. We consider this a more reasonable risk of loss to consider. The Riksbank has build up a substantial reserve in the form of gold price effects booked into the revaluation account. In 2006 this reserve amounted to over SEK 7 billion, which has significance for the management of the gold price risk (this is discussed in more detail in Chapter 6). Nevertheless, the gold price risk must be viewed as a serious risk which cannot be insured against.

At the same time, the problem is getting smaller as the Riksbank is selling gold at the rate at which it is allowed in line with the international agreement that it signed. The current agreement runs for several more years, but it is likely that a new agreement will be signed after that. At the end of 2006 the Riksbank held approximately 160 tons of gold. The current agreement allows the sale of between 10 and 15 tons annually (this is varies year on year). If sales continue for 15 more years and the Riksbank uses its opportunity to sell at the permitted rate, the entire gold reserve would have been sold. Continued sales seem probable, if the Riksbank shares the view of the Commission that it is difficult to see any value in the Riksbank holding gold. This would also reduce capital need over time.

Another undertaking that the Riksbank has no hold over, is its undertaking to the IMF. This consists of three main components. Firstly the Riksbank has financed the IMF by being conferred IMF issued special drawing rights (SDRs). SDRs are like a currency which can be used by the IMF to provide financing. In 2006 the Riksbank's SDR assets amounted to SEK 2.6 billion. An amount corresponding to the SDRs originally conferred by the IMF is reported as a liability; SEK 2.5 billion in the 2006 annual report. The asset item and liability item do not cancel each other completely (see table 4), but they do not fluctuate enough to warrant being viewed as a loss risk with a specific capital need.

Secondly the Riksbank has paid a capital contribution to the IMF, the quota. This receivable is netted in that there is a total capital contribution (which was SEK 24.7 billion in 2006), against which the IMF's Swedish krona account (which at the same date had a negative balance of SEK 22.6 billion) is deducted. The net receivable for this item is therefore SEK 2.1 billion.

The size of this item net is primarily governed by the IMF's activities as a credit provider. When the IMF lends money, funds are taken out of the IMF's account in Swedish krona. Because payment to the IMF is in foreign currency, the Riksbank's currency assets are reduced by an equivalent amount. So in the Riksbank's balance sheet the item Reserve position in the IMF increases while currency assets decrease correspondingly. Thus there is no effect on the profit and loss account or own capital.

When the IMF needs to lend a more substantial amount of money, the item Reserve position in the IMF thus increases. This mainly happens when the IMF acts in conjunction with a major crisis in a country, for instance the Russian crisis. Here the Riksbank has a potential exposure of the entire amount, SEK 24.7 billion. The IMF has no intention of using the entire amount, and has a guideline that no more than 25 percent should be utilised.

Just as in other currency assets there is a currency risk in this position. Just as the other currency assets discussed in Section 4.2, it should be possible to neutralised this using derivatives or borrowing in counterpart currencies.

There is also a credit risk in this position, as the IMF lends to countries with financial problems. However, up to now the IMF has not incurred losses to the degree that this has affected the member states financially. This is probably because the risk when lending to central governments, even those with financial problems, is small, and also that the IMF can bear some capital losses in its own balance sheet. Because central governments cannot be bankrupted, final losses should only arise if the debts are written off, which normally takes place after negotiations between lenders and debtors. The credit risk should therefore be seen as small.

These two types of receivable from the IMF thus have a total net position of SEK 2.2 billion (SEK 2.4 if the Miscellaneous item is added). While this item is small, it can vary with the value of the Swedish krona in relation to other currencies in SDRs, and with how the IMF controls its operational activities (see Table 4).

__Table 4.__ Receivables and liabilities with the IMF in the Riksbank's balance sheet 1999-2006

	2006	2005	2004	2003	2002	2001	2000	1999
Receivables from the IMF								
SDR	2,6	1,4	1,4	1,4	1,6	2,1	2,0	2,7
Reserve position in the IMF	2,1	4,1	8,6	10,6	12,5	10,9	8,4	10,1
Other	0,2	0,2	0,2	0,2	0,3	0,3	0,2	0,2
Liabilities to the IMF								
Counterpart of SDR	2,5	2,8	2,5	2,6	2,9	3,3	2,9	3,1
Total net receivables	2,4	2,9	7,7	9,6	11,5	10,0	7,7	9,9

Thirdly, in addition to the direct funding of the IMF mentioned above, the Riksbank has undertaken to part-finance financial support which the IMF may provide in extraordinary circumstances, in a financial crisis for example. This undertaking can mean that the Riksbank may need to lend a maximum of approximately SEK 13 billion in certain situations.[37] Currently there are no loans made. However, minor specific credit commitments have been made.

When these loans are made, the currency and credit risk inherent in these loans should be seen in the same way as the Reserve position in the IMF. It should be possible to hedge the currency risk and the credit risk should be limited for the reasons set out above.

In summary, the Commission concludes that present exposure to the IMF is not large, that it should not become large given the restrictions on the undertaking, and that the risk of losses should be viewed as limited. Hence no capital need is specifically identified. It should be possible to bear potential losses using the capital for other risks identified by the Commission.

4.4.4. A summary of the other risks

Judgement of the Commission: A maximum capital of SEK 5 billion should cover the Riksbank's other risks.

The Commission has identified other risks in the form of gold price risk, operational risk, along with certain credit risks caused by the Riksbank's undertakings in relation to the IMF. The gold price risk is estimated to generate a SEK 1 billion capital need after taking account of the fact that the revaluation accounts bear some degree of losses. Operational risks should not exceed SEK 1 billion. Risks in relation to the IMF have not been quantified but should be seen as limited. The Commission concludes that a total capital need of SEK 5 billion will cover these other risks.

[37] These pledges were made within the framework of special programs known as the General Arrangement to Borrow (GAB) and New Arrangement to Borrow (NAB).

5. Capital structure in other central banks

This Chapter contains a short summary of the Commission's international comparison. The data is based on a questionnaire which was sent out and answered in the summer of 2006 and on details from the annual reports of central banks. The summary covers the central banks in the following countries: Denmark, Finland, Norway, the Netherlands, the United Kingdom, Germany, Canada and New Zealand. As a comparison the same information is presented for the Riksbank.

The aim of the comparison is to show that there are similarities and differences between the Swedish Riksbank and its foreign equivalents. Above all the comparison shows that the way in which the Riksbank's capital structure has been formed is not the only possible alternative, and that in certain respects there are entirely different ways of organising and funding a central bank's operations, and that this affects the structure of the balance sheet.

5.1. The main tasks of central banks

Observations of the Commission: It is not necessarily the case that the main components of the Riksbank balance sheet are contained in the balance sheets of the central banks of other countries. In the United Kingdom there is a separate balance sheet for currency in circulation and in Canada the foreign exchange reserve is not part of the central bank's balance sheet. Hence, it is fully possible to have a situation where neither the foreign exchange reserve not the currency in circulation are included in the central bank's balance sheet.

In general the main tasks of central banks are quite similar. Basically they have three tasks:

- Maintain price stability
- Encourage financial stability
- Issue banknotes, and sometimes coin[38]

For all central banks maintaining price stability includes setting the repo rate (or the equivalent) in order to keep inflation at a low level. Most central banks are also tasked with keeping a foreign exchange reserve so as to be able to conduct currency interventions. Exceptions are the central banks of the United Kingdom and Canada where the foreign exchange reserve is separated from the central bank. However, these central banks are still deeply involved with the administration and governance of the foreign exchange reserves.

[38] In many countries the national central bank is not responsible for issuing coin. This task lies with a separate mint. This was the case in Sweden until 1986. It goes back to a tradition that allowed the king (government) the right to issue coin.

In encouraging financial stability all the banks can be said to include being able to act as lender of last resort, though how clearly this task is formulated by the central bank varies.

All central banks also have the task of issuing legal tender, that is banknotes. Here the central bank in the United Kingdom has a special structure which means that currency in circulation along with the assets in which this capital has been invested, are reported separately.[39]

Besides these main tasks, certain central banks also have particular tasks such as administering central government debt or central government funds. This applies to such central banks as those of Denmark and Norway.

5.2. National central banks' balance sheets

To make the comparison simple table below contains the most important items in the central banks' balance sheet.

[39] The requirement for currency in circulation to be reported separately stems from legislation from 1844. There are separate balance sheets, the difference between which is that the profit from note issuance goes directly to central government.

Table 4. *Summary of several items in the balance sheets of central banks at the end of 2005.*

	Balance sheet total SEK billion	Share assets in foreign currency and gold	Share currency in circulation	Own capital as a % of balance sheet total	Own capital in SEK billion
Sweden (31/12/05)	209	94 %	53 %	39 %	81
Norway (30/06/06)	390 (excluding pension fund)	90 %	27 %	20 %	78
Denmark (31/12/05)	490	54 %	14 %	13 %	64
Finland (31/12/05)	175	50 %	49 %	28 %	49
Netherlands (31/12/05)	580	30 %	46 %	23 %	133
Germany (31/12/05)	3000	25 %	45 %	16 %	480
United Kingdom* (28/2/06)	340	20 %**	n/a	7 %	24
Canada (31/12/04)	310	1 %**	95 %	0,06%	0,2
New Zealand (30/06/05)	60	60 %	25 %	12 %	7

*The figures reported are related to "banking operations". The separate balance sheet which contains the issuing of banknotes and coin is not reported here.
** The official foreign exchange reserve is not contained in the central bank's balance sheet and is therefore not reported here.

Own capital includes the following items:
Sweden: Own capital, revaluation account, provisions (for example pension liabilities). Differences to amounts reported elsewhere in the inquiry are due in part to this table referring to 2005 and in part because another definition of own capital has been used.
Norway: Own capital (including a revaluation account known as the adjustment fund). Own capital is currently below the statutory target.
Denmark: Own capital (including a revaluation fund and the General Reserves).
Finland: Own capital, revaluation account, provisions
Netherlands: Own capital, revaluation account, provisions
Germany: Own capital, revaluation account, provisions
United Kingdom: Own capital
Canada: Own capital
New Zealand: Own capital

5.3. National central banks' own capital

Observations of the Commission: The size of own capital as a share of the balance sheet total varies significantly between the different central banks. The Riksbank has a high share (39 percent) while others have a very low share (Canada 0.06 percent). These central banks have a slightly different focus but also appear to have a different view of the need for own capital.

The central banks, with the exception of Canada, apply marking to market of assets and liabilities. The Euro-zone countries and the Riksbank follows the reporting rules of the Euro-system which specifies that unrealised gains shall not be recognised as income, but transferred directly to a revaluation account – that is to say not included in the distributable profit either. Unrealised losses shall be taken to the profit and loss account when exceeding previous revaluation gains registered in the corresponding revaluation account.

The Riksbank has a balance sheet total of SEK 201 billion. Own capital corresponds to 39 percent of the balance sheet total.

Norges Bank has a balance sheet total of the equivalent of SEK 390 billion, not including the pension fund. Own capital corresponds to 20 percent of the balance sheet total. This is divided into the adjustment fund (like a revaluation account) and a transfer fund. Currently there is no capital in the transfer fund as the adjustment fund is below its target level.

Danmarks Nationalbank has a balance sheet total of the equivalent of approximately SEK 490 billion. Own capital corresponds to about 13 percent of the balance sheet total. Of this 13 percent, a little over 12 percent is in General Reserves, which is comparable with provisions.

The Bank of Finland has a balance sheet total of the equivalent of SEK 175 billion. Own capital corresponds to 8 percent of this. In addition there are provisions corresponding to over 14 percent and revaluation accounts equivalent to almost 5 percent. Own capital, as discussed here, is therefore equivalent to 28 percent of the balance sheet total.

De Nederlandsche Bank has a balance sheet total of the equivalent of SEK 580 billion. Reported own capital, divided between primary capital and a reserve fund, is equivalent to over 9 percent of the balance sheet total. In addition there is a revaluation account equivalent to over 14 percent, plus negligible provisions. The total capital buffer therefore corresponds to 23 percent of the balance sheet total.

Deutsche Bundesbank has a balance sheet total of the equivalent of approximately SEK 3000 billion. Reported own capital, is divided between primary capital and a reserve fund, and is equivalent to 1.5 percent of the balance sheet total. In addition there is a revaluation accounts corresponding to almost 13 percent and provisions equivalent to 1.5

percent. The total capital buffer therefore corresponds to 16 percent of the balance sheet total.

The Bank of England has a balance sheet total corresponding to SEK 340 billion for its banking operations, i.e. not including the department responsible for issuing banknotes and coin. Own capital corresponds to 7 percent of the balance sheet total, of which over 1.5 percent is in a reserve fund.

The Bank of Canada has a balance sheet total of the equivalent of SEK 310 billion. Own capital corresponds to 0.06 percent of the balance sheet total.

The Reserve Bank of New Zealand has a balance sheet total of the equivalent of SEK 60 billion. Own capital corresponds to 12 percent of the balance sheet total.

5.4. Regulation of the central banks' own capital and profit allocation

Observations of the Commission: It is unusual for central banks to have a statutory level for the size of their own capital, in addition to the relatively small primary capital or the equivalent. This is also the case inside the Euro-zone, which is surprising given the criticism directed at Sweden in the convergence reports. It appears that the extra payments of 2001 and 2002 are the main reason for the requirements made on Sweden because it became clear that there was no statutory regulation of how the Riksbank's profit distribution should be determined. It is not the case that other countries have strict statutory requirements in this area.

For information about the Riksbank, see Chapter 4.

Norges Bank's own capital is regulated by royal decree. It is made up of a transfer fund and an adjustment fund. According to the regulation the adjustment fund should correspond to 5 percent of the bank's receivables in Norwegian securities plus 40 percent of the bank's net foreign exchange reserve. If the capital in the fund exceeds the prescribed amount the excess is transferred back to the profit and loss account. Any surplus from operations is transferred to the transfer fund unless the adjustment fund is less than the prescribed size; if that is the case the surplus is transferred there. There is no limit to how small own capital can be and there is no regulation of what happens if own capital decreases drastically. If the adjustment fund is less than 25 percent of the bank's net foreign exchange reserve the capital may be transferred back from the transfer fund to the adjustment fund until the prescribed size of the fund has been reached, of course this presupposes that there is capital in the transfer fund.

Every year a third of the transfer fund is paid to the Norwegian central government. Currently the adjustment fund is still less than the prescribed size, which is why no capital is being allocated to the transfer fund.

It should be noted that Norges Bank lets exchange rate fluctuations affect results, both realised and unrealised. The size of the adjustment fund is determined on the basis of what is necessary in order to cover several subsequent years of losses with a confidence level of 95 percent.

Danmarks Nationalbank's own capital is only regulated in law in as far as profits must be distributed to central government unless it goes to the reserve fund or general reserve. This also stipulates that net capital should be a certain size, however this amount is no longer relevant as the paragraph was written in 1936. Instead profit distribution is carried out according to the following principles. 30 percent of profit is transferred to the general reserves and 70percent can be distributed to central government. However, this has not always been followed. In 2002 the profit was distributed 20/80 for example.

The Bank of Finland's own capital is not regulated with regards size. The Act on the Bank of Finland states the following:

"The Bank of Finland shall have primary capital and a reserve fund. The reserve fund can be used for increasing the primary capital or for covering losses, ..." Provisions can be made in the annual accounts if necessary for safeguarding the real value of the Bank's funds or for smoothing out variations in profit or loss arising from changes in exchange rates or market values of securities."

Profit allocation is regulated in law as follows:

"Half of the profit, following allocation of the monetary income that has accrued within the European System of Central Banks, shall be transferred to the reserve fund. The remaining profit shall be made available for use in accordance with the needs of the state. The Parliamentary Supervisory Council may decide on use of the profit for other purposes if this is justifiable because of the Bank's financial condition or the size of the reserve fund. Parliament shall decide on the disposal of the profit made available for use in accordance with the needs of the state.
If the Bank's annual accounts show a loss, the loss must be covered out of the reserve fund. If the reserve fund is insufficient to cover part of the loss, the uncovered part of the loss may be left temporarily uncovered. Any profits in subsequent years shall be used first to cover such uncovered losses."

The law also prescribes that the final decision on profit allocation lies with the Parliamentary Supervisory Council, which has the right to deviate from the main rule.

It should also be noted that the Bank of Finland carries out its own calculations of the need for and has drawn up a memorandum (2001) to support the Parliamentary Supervisory Council's decision regarding profit distribution, a decision based on proposals from the bank's Board. The memorandum states that the Bank of Finland needs buffer capital for three reasons:

- to cover interest rate risk and foreign exchange rate risk in the foreign exchange reserve
- to cover any credit losses in emergency liquidity assistance to commercial banks
- to be prepared to take measures under Finland's "Emergency Powers Act"

De Nederlandische Bank's own capital is not regulated by law. Profit allocation is not regulated by law either, but the DNB has an agreement with the Dutch Ministry of Finance about how it should take place. This agreement means that 95 percent of the profit, reduced by realised profit from the sale of gold, is to be paid to central government and the remaining 5 percent transferred to provisions. A loss (excluding realised profit from the sale of gold) is covered in that it reduces the profit for the six subsequent years by an equal amount.

It should also be noted that when the DNB made the agreement on profit distribution with the Dutch Ministry of Finance a statistical simulation was carried out with 1,000 random scenarios based on the necessity that the financial independence of the DNB must not be threatened.

Bundesbank's own capital comprises a base fund and reserve fund, provisions and value adjustments. There is nothing in law about the size of the bank's total own capital.

On the other hand profit allocation is regulated by law. It states that:

- 20 percent of the bank's profit, but at least EUR 250 million, shall be transferred to the reserve fund until it contains EUR 2.5 billion. The remainder of the profit should be allocated to central government.
- The bank has the right to independently decide on provisions (for the risk of losses due to exchange rate fluctuations).

It should also be noted that when the bank's management annually determines the size of provisions they take account of VaR calculations at various confidence intervals. Currently provisions have been set as 7 percent of the acquisition value of the net foreign currency position. This is in addition to the capital in the revaluation account.

The Bank of England's entire profit from the issuing department is paid to central government, and this is regulated by law. The size of the banking operations own capital is not regulated. Profit allocation is regulated by law in that it is stipulated that 25 percent of the profit from banking operations shall be paid to central government, unless the parties agree on another distribution. Currently the distribution is 50 percent.

The Bank of Canada's own capital is regulated by law and has not changed since 1955. Should the bank make a loss, own capital must be built up again by a share of profits being allocated to own capital until it has built up to CDN 30 million. All of the bank's profit goes to the Canadian central government.

It should also be noted that the bank's minimal own funds are based on the bank's current balance sheet structure largely guaranteeing a profit every year. On the debit side is almost only currency in circulation - a non-interest bearing debt. The asset side consists almost completely of Canadian government bonds – a risk-free but interest-bearing asset.

The Reserve Bank of New Zealand's own capital is not regulated by law or in any other way. In a somewhat simplified and abridged form the law states that the government has the right to determine how much of the notional surplus income that must be paid to central government and how much should go back as reserves in the balance sheet. Notional surplus income is defined as the year's realised revenues reduced by the accumulated unrealised losses. The difference between the actual and budgeted operating income is added (the budget is set by the government for five years at a time in a funding agreement). As the size of the allocation is determined the government must take account of the bank's capital need, the opinion of the bank's Board of Directors, and other relevant circumstances.

6. Consideration of alternative capital structures

6.1. The cost of maintaining capital in the Riksbank

Judgement of the Commission: The cost of maintaining capital in the Riksbank is so low that there is no point in being highly restrictive about it. Nevertheless, the Riksbank should not have more capital than necessary for its financial independence.

In the discussion carried out by the Commission so far, there has been an implicit assumption that the Riksbank should not have more capital than is necessary. In the directives this is formulated as “there is no reason for the Riksbank to be overcapitalised”. The Commission’s discussion about the risks to which the Riksbank is exposed has shown that it is difficult to determine the probability of the risks materialising and the size of potential that losses. This means that it is difficult to establish an exact amount for the amount of capital required. So there are grounds for looking at the cost of maintaining capital in the Riksbank. The Commission needs to balance ensuring that in all circumstances the Riksbank will have adequate capital to fund its current costs against not maintaining capital in the Riksbank which could represent an unnecessary cost (or risk) for central government.

The extent to which capital in the Riksbank represents a cost to central government is debatable. One way of looking at this is to see what would happen if a certain amount of capital was paid by the Riksbank to central government. An equivalent amount of central government debt could be repaid and central government interest costs would be reduced. If the Riksbank can administer its asset base to achieve a return that exceeds the interest costs of the Swedish National Debt Office for central government debt, there would be no direct cost for maintaining capital. A higher expected return can be achieved by accepting some level of risk, but there is also a risk that the return will be lower. Whether it is reasonable for the Riksbank to take a higher financial risk in order to achieve higher expected returns is discussed in Section 6.5. To make a relevant comparison of the cost of maintaining capital we should look at what the cost would be if the Riksbank took the same risk as that taken by the Swedish National Debt Office in its debt administration. This would be the same as the Riksbank maintaining an asset portfolio entirely matched with the central government debt.

In this case the cost consists entirely of the transaction expenses of maintaining a portfolio of Swedish government securities or the equivalent interest rate positions. It would not be meaningful to estimate these transaction expenses in more detail. Firstly, they depend on how the Swedish National Debt Office funding costs are matched, for example whether this is done using securities trading and if so what intensity of transactions would be required. Secondly, they depend on how large the volumes would need to be, because many costs are fixed and the economies of scale are large. However, it is clear that the transaction expenses for this sort of administration are low. To give an order of magnitude, a portfolio of SEK 50 billion with a transaction expense of one basis point would result in a cost of SEK 5 million. The transaction expense may very well be higher or lower but they do not constitute large amounts.

One proviso for the discussion thus far has been that central government finances are good, just as they are today. The current size of the Riksbank's own capital amounts to about 5 percent of the central government debt. Although this is not a large proportion of the borrowing, the size of the borrowing requirement can affect the cost of borrowing. Such a situation with central government finance under pressure arose in the middle of the 1990's. In such a situation, the cost for central government of maintaining capital in the Riksbank could become significantly greater. So there could be a cost of maintaining capital in the Riksbank in a situation where the borrowing opportunities are more limited, or borrowing more expensive, due to increased government borrowing. While this situation seems remote now, it is still worth taking into consideration.

In addition to this there are national objectives for central government budget expenditure, public sector savings and the consolidated gross debt of the public sector resulting from the convergence criteria of Euro participation. Currently these do not suggest any reason for reducing borrowing by decreasing the Riksbank's own capital but this could change given other circumstances.

Another way of looking at the situation is from a political perspective. In most cases central government chooses not to transfer capital to particular sectors of central government unless there are special grounds to do this. It would be possible to fund many operations by providing them with capital to administer and letting them live off the returns. But normally Parliament decides on annual funding of the operation through appropriation. This means that the preparation of the central government budget allows an annual review of funding requirements and, through various governance mechanisms, ensures that the central government operations are governed in accordance with political objectives. In those cases where central government allocates funds for administration the operations often have a reason to create a reserve pending losses or an increase in costs. The Swedish Pension Funds are a good example. Another is the Swedish Deposit Guarantee Board fund for paying out money from the deposit guarantee. However, this example is linked to the advance collection of premiums to cover specific obligations, and these premiums are kept separate from the treasury in order to emphasise the existence of a latent obligation. So no real comparison can be made with the operational activities of the Riksbank.

In the judgement of the Commission, the cost of maintaining capital in the Riksbank is so low that there is no reason to be very restrictive in allowing the Riksbank to maintain capital. At the same time there is a cost, and capital should not be provided over and above what is considered necessary with regard to the Riksbank's earnings requirements and ability to handle losses within realistic probability levels.

6.2. Various methods of ensuring the Riksbank's financial independence

The Commission has stated that there are different methods of handling potential losses by the Riksbank. One is to give the bank a cost-free capital large enough to cover probable losses. The other is a recapitalisation rule which would mean that central government would provide capital if losses become too large. The difference between these two alternatives is developed in Section 6.3. However, there are also other ways of handling losses. These consist of variations on the responsibility for the risk of losses being removed from the Riksbank in such a way that the economic risk of losses is borne directly by the central government budget rather than the Riksbank. The conditions and suitability of such alternatives are discussed in the following for each of the significant risks discussed in Chapter 6.

6.2.1. Should losses arising from being the lender of last resort be borne by the Riksbank?

Judgement of the Commission: In light of the current division of roles between central government and the Riksbank, and current practice in emergency liquidity assistance management, the Riksbank should be prepared to bear losses and should have cost-free funding in order to manage this.

In Section 4.1 we discussed the Riksbank's role as a lender of last resort, the probability of losses resulting from this and the size of losses which could arise. This discussion established that the probability of losses is low, mainly because the Riksbank may only give emergency liquidity assistance if a bank is having liquidity problems and that these are not caused by a lack of solvency. At the same time, the likelihood of short time frame in which decisions about emergency liquidity assistance need to be taken, and the difficulty in assessing a bank's solvency, mean that there is a risk that emergency liquidity assistance is provided to a bank which later also proves to have solvency problems.

One reason that the Riksbank should not bear these losses is the division of roles in the event of a crisis in the financial system. In line with this, the Riksbank is responsible for liquidity assistance to solvent banks, while any financial support to banks which have solvency problems comes from the central government budget, and accordingly must be decided on by Parliament. If emergency liquidity assistance provided by the Riksbank proves to have been given to a bank with solvency problems, this means that the Riksbank really should not have provided the assistance in the first place, and assistance should have provided from the central government budget (on condition that it was needed to protect the stability of the financial system). Consequently it would not be unreasonable if losses incurred by the Riksbank in such a situation were reimbursed by central government.

On the other hand, it does seem unreasonable that the Riksbank does not bear the economic consequences of decisions that can be seen as wrong and central government is presented with a fait accompli. It is also the case that the Riksbank would have less incentive to take decisions which would reduce costs for central government. This concerns both the inclination to take decisions about emergency liquidity assistance, and the extent to which the risk of losses is limited by risk reducing measures once emergency liquidity assistance has been granted.

With regard to the inclination to take positive decisions on granting emergency liquidity assistance the Commission considers it unlikely that this incentive effect would be significant. It is clear that the Riksbank may not provide emergency liquidity assistance to banks with solvency problems and it will be very clear afterwards if this has been the case. In such cases the Riksbank's decision-makers will be subjected to distinct criticism, and it would appear improbable that the question of who bears the losses would influence these decision-makers other than marginally in this situation. This assessment is reinforced by the fact that the Riksbank's management does not have any financial motives to differentiate between money belonging to the bank and that belonging to central government.

The circumstances are somewhat different in relation to risk reducing measures, predominantly the type of collateral which the Riksbank requires in order to grant emergency liquidity assistance. There is a large risk that the securities that a bank in a crisis can provide as collateral will not suffice. The Riksbank may need to accept more unusual collateral, for example loan portfolios. To be able to accept this type of collateral, practical and legal preparations must be in place. In this case the Riksbank must prepare itself thoroughly for a highly unlikely event, which is not necessarily an obvious priority. It therefore appears more likely that whoever bears any losses can affect the extent to which the Riksbank invests in this sort of preparedness.

Possibly the division of roles between central government and the Riksbank (that central government is responsible for support to banks with solvency problems and the Riksbank for pure liquidity assistance) may also be clarified in the future. If the proposals related to the public administration of banks in distress[40], submitted by the Swedish Banking Law Committee and currently being drafted by the Government Offices, are introduced, this division of roles will in all likelihood be even clearer. The issue of division of roles between central government and the central bank is also one being discussed in relation to the prudential supervision of the banking system in EU home and host member states.

However, in the view of the Commission, there is currently no reason to advocate a situation in which losses from emergency liquidity assistance are immediately taken on by central government. It is more suitable for the Riksbank to bear the losses, managing them with a capital buffer which protects its financial independence.

[40] Public administration of banks in distress, SOU 2000:66.

6.2.2. Should losses arising from foreign exchange interventions be borne by the Riksbank?

Judgement of the Commission: Because there is only a limited need for a large foreign exchange reserve, and because its financial risks should be neutralised, there is currently no reason to propose a change of responsibilities regarding the losses related to foreign exchange interventions. The Riksbank should continue to be liable for these.

As discussed in Chapter 4, the Riksbank generally only needs to intervene in the foreign exchange market if the foreign exchange policy objective is a fixed exchange rate. If there is a floating exchange rate, reasons for intervention are limited while if interventions are made in spite of this, the risk of losses should also be limited. Because it is the government and not the Riksbank that determines the exchange rate regime, even if the Riksbank determines the actual fixing rate, there would be a certain logic if losses due to currency interventions, which would be more likely to arise in defending a fixed exchange rate, were borne by central government.

One argument that reinforces this logic is that it is predominantly the government that can create the conditions for a stable fixed exchange rate. Fiscal policy is one of the most important means for achieving this, and that lies in the hands of Parliament and the government. The Riksbank risks being forced to defend a fixed exchange rate which it has little opportunity to influence, and bear losses due to a mismanaged economic policy.

It should also be noted that the international comparison shows two countries which actually do manage their foreign exchange reserve in this way – Canada and the United Kingdom. There, the foreign exchange reserve is kept separate from the central bank and its results do not affect the central bank's balance sheet. On the other hand, the central banks do participate in the administration of the foreign exchange reserve. At the same time it should be noted that one of the requirements of membership in the ESCB is that it is the task of the country's central bank to hold and manage the member state's official foreign exchange reserve.

Even if, in the view of the Commission, there is reason to consider moving the foreign exchange reserve out of the Riksbank's balance sheet and instead report it on central government's balance sheet, this would cause both legal and administrative problems. At the same time, as was stated in Chapter 4, the necessity for a substantial foreign exchange reserve to make currency interventions is debatable. It is also unlikely that a fixed exchange rate will be introduced in the foreseeable future. As the need for a capital buffer for this purpose is relatively low, the Commission does not consider such a change justified.

6.2.3. Should seigniorage accrue to the Riksbank?

Judgement of the Commission: The currency in circulation provides a significant earning capacity through its role as cost-free capital. At the same time the currency in circulation is not capital entirely equivalent to other capital. It should therefore be possible to remove currency in circulation from the Riksbank's balance sheet in order to provide central government with the return it generates directly, as is the case in the United Kingdom. Another way of achieving about the same thing is viewing currency in circulation as loan capital, on which the Riksbank pays interest to central government. The Commission takes no view on whether seigniorage should go to the Riksbank or central government, it submits two alternative proposals which handle this issue in different ways.

As we discussed in Chapter 4 there is a risk of a future decrease in currency in circulation which would limit the volume of assets that create the Riksbank's earnings. However, this risk is small, in part because there is a substantial margin between the size of the currency in circulation and the Riksbank´s need to cover its operating costs in the long-term, and, as discussed in Chapter 4, in part because any decrease in the currency in circulation should happen relatively slowly. So in most cases there would be time for Parliament to adapt to an erosion of this earning capacity.

One alternative to having the currency in circulation included in the Riksbank's balance sheet as it is today, would be to separate the item banknotes and coin and consider this as belonging to central government. One advantage of this would be that it would be more transparent to central government what return currency in circulation was actually providing. It is already difficult to explain that the currency in circulation can be considered equivalent to own capital while at the same time it is reported in the same way as a liability in the balance sheet. It is also possible that greater risk could be taken in asset management, achieving a higher expected return than would be appropriate for the Riksbank. One of the countries in the comparison, the United Kingdom, has a currency in circulation which is separated from the central bank, which demonstrates that it is fully possible to do it that way. There the central bank has two balance sheets, one for currency in circulation and the other for "banking operations".

The disadvantage of separation is that the cost-free capital which exists today in the form of currency in circulation, will not be utilised to guarantee long-term cover for the Riksbank's operating costs. Because of this other cost-free capital would be needed to generate long-term earnings, which would give the Riksbank a greater need for own capital than would otherwise be the case. This solution would also have a number of practical consequences, above all because there is a correlation between the volume of currency in circulation and the bank´s accounts with the Riksbank. The banks continuously deposit and withdraw banknotes and coin from the Riksbank and these transactions are made through the banks' accounts. Another consequence would be a greater total capital tie-up in the Riksbank.

An obvious alternative would be to consider currency in circulation as loan capital. In taking the view that currency in circulation is loan capital, provided by central government, the Riksbank should pay interest to central government for this form of finance. This would achieve an equivalent economic effect to a separation of the balance sheet. Currency in circulation is also accounted for as a liability item in the current balance sheet.

The Commission has weighed up the alternatives and finds that there are advantages and disadvantages in having currency in circulation belong to the Riksbank, giving it the right to seigniorage. The Commission therefore takes no view on this issue, but makes one proposal where the currency in circulation remains on the Riksbank's balance sheet and one where seigniorage should accrues to central government through the mechanism of the Riksbank paying interest to central government for this form of borrowing. This is developed further in one of the Commission's two alternative proposals, see also Section 7.

6.2.4. Should the Riksbank bear other risks?

Judgement of the Commission: The scope of other risks is limited so there are no grounds to consider transferring the responsibility for potential losses for the Riksbank.

By its very nature operational risk is difficult to deflect from the Riksbank because, to a great extent, it cannot be specified. Some operational risk is insurable, but not to the extent that this is worth taking into account in the circumstances.

It is difficult to see the need for the gold reserve. However, as discussed in Chapter 4 this cannot be sold immediately. If it is sold in accordance with the international agreements in place, it will reduce in size and the risk associated with it will decrease. Taking into account the significant financial risk it entails, lifting it out of the Riksbank's balance sheet could be considered. However, the Commission chooses not to propose this as it is of no great importance to the Commission's findings. Besides, the gold requires special management for which the Riksbank has the expertise and experience, and the sale of gold is managed in discussions and agreements between central banks, to which other organisations are not necessarily given access.

Sweden's IMF obligations are a result of its choice to participate in the international relationship constituted by the IMF. This is more a political commitment than a financial one, even if it does have financial consequences. There has been a discussion between the government and the Riksbank about how Swedish participation in the IMF should be managed and governed. The Commission sees no reason to go into this matter in detail as the risks entailed in these obligations are relatively small. In the view of the Commission there are no grounds to propose changes either to the responsibility for or the division of the financial consequences of Sweden's IMF obligations.

6.3. Managing losses - recapitalisation rule or capital

Judgement of the Commission: Instead of the Riksbank maintaining capital to cover losses, even unlikely ones, central government could undertake to replace a certain level of capital if such a situation did arise. However, a statutory recapitalisation rule is unnecessary as the cost of maintaining capital in the Riksbank is low and such a rule could lead to issues of principle.

There are different ways of managing losses for an organisation. The most obvious alternative for the Commission was for the Riksbank to have adequate cost-free capital to bear its losses in the same way as has been the case up to now. One alternative is that an undertaking be drawn up requiring central government to replace a certain level of capital if the Riksbank suffered losses. This would mean that the Riksbank need not maintain capital to the same extent as would otherwise have been necessary. Were the Riksbank to suffer major losses central government would contribute capital to allow the Riksbank adequate capital to continue to fund its operating costs. The advantage would be a more efficient use of capital. At the same time the costs of maintaining capital in the Riksbank are low, see the discussion in Section 6.1.

Over and above an efficient use of capital by central government there is another important advantage with a recapitalisation rule. As the Commission’s discussion above has shown, it is difficult to accurately assess the magnitude of losses that the Riksbank risks suffering. Because of this, it is also difficult to assess the Riksbank’s capital need. A recapitalisation rule would mean that central government would replace capital in the Riksbank, irrespective of the size of the loss and its causes. So no assessment of the size of possible losses need be carried out, which also reduces the impact of the Riksbank making significantly greater losses than were considered when determining any capital buffer. One result would also be that a recapitalisation rule would mean that the conditions for making the rules governing the Riksbank’s capitalisation sustainable in the long-term would be better. Should vulnerability increase over time for the Riksbank, due to the introduction of a fixed exchange rate or the reduction in volume of currency in circulation for example, a recapitalisation rule would not need to be changed in the same way as a fixed capital buffer might.

There are also some disadvantages related to issues of principle with a recapitalisation rule. One is that a recapitalisation rule would bind future parliaments to contribute funds. This could be seen as a conflict with the principle that Parliament decides on central government expenditure, which is normally set within the framework of the annual central government budget. At the same time, it is not unusual for central governments to be bound by financial undertakings. One example is the liability to pay damages, to which central government can be bound by law.

One way to reduce the formal problems and issues of principle of a recapitalisation rule, is to make it more flexible. This could be the Riksbank being required to apply for a capital infusion from Parliament.

The Commission has not been able to find an example of a national central bank which enjoys an unconditional pledge on future recapitalisation from its parliaments.

To summarise the Commission believes that, while a recapitalisation rule would have appealing characteristics, there are three conditions that still seem central to it not proposing such a rule. The first is that the risk of losses for the Riksbank is not considered to be great enough to create a large capital need to cover losses. The second is that the cost for central government of maintaining capital in the Riksbank is not large. The third are the issues of principle that it could generate.

6.4. How should the Riksbank's assets be invested?

Judgement of the Commission: With a neutralised foreign exchange reserve, the Riksbank will have different assets to administer than today's foreign currency assets. These assets should be administered in such a way that the financial risk is so low that no cost-free capital need be specifically allocated for risk-taking in asset management. A certain risk tolerance would probably lead to a better return, benefiting central government and, by extension, taxpayers. With the Riksbank's need to be able to meet its obligations with the capital it has, even in the most unlikely situations, the Riksbank's assets should be invested taking careful account of the risk this entails. The objective of guaranteeing the Riksbank's financial independence, which is the Commission's task, does not require the achievement of higher returns in asset management if this is at the price of increased risk.

The Commission believes that the Riksbank's currency risk should be neutralised. While the Commission takes no view on how this neutralisation should be achieved (see Chapter 8 for a discussion of this) this does mean that there is potential for investments other than the current ones. This raises the question of how the assets should be invested.

It is generally recognised that asset managers must attempt to adapt the asset portfolio so that its yield is as good as possible on the basis of their liabilities and risk preference. This is usually called Asset Liability Management (ALM). The Commission has not carried out a detailed ALM analysis which could have provided a more specific focus for the Riksbank's asset management. One reason for this is that the Commission has not seen it as its task to guide the focus of asset management in detail. This should be seen as a task for the Riksbank itself, and it would hardly be appropriate for this to be governed in detail by the legislator.

However, there may be a need to provide some guidance, above all where it is relevant to the size of the cost-free capital the Riksbank needs. The following section should be seen as a general discussion of these issues, which can form the basis of the essential focus of the Riksbank's asset management. However, the Riksbank needs to carry out an in-depth analysis before a more detailed focus for asset management can be determined.

If, using ALM, we were only concerned with the Riksbank's undertaking to fund current operating costs, a matching position would be theoretically best achieved by the Riksbank investing in a convertible promissory note with an infinite maturity. The yield from such a bond would cover the operating costs and it would be unimportant if there were fluctuations in interest rates or inflation that changed the market value of the bond.

However, such bonds do not exist. The fact that the Riksbank may need to realise investments, if, for example, there are losses, or if the volume of currency in circulation decreases, also means that the Riksbank cannot just look for a return from its investments. Variations in the market value of assets must also be taken into account. It is also a fact that modern risk management methods are based on market values, which is why the Commission takes an approach in which the Riksbank's assets are marked to market. This also corresponds with the accounting policies applied by the Riksbank.

In the view of the Commission, the basis for this should be a low risk tolerance in the Riksbank's asset management. The reason for this is that the Riksbank has been given its independence and an opportunity to fund its current operational activities with separate capital with the purpose of, independently and without any other considerations, being able to use monetary policy to control inflation. This unique delegation of political power means that the Riksbank is restricted to carrying out such tasks considered compatible with its long-term independence. From this perspective it seems inappropriate for the Riksbank to act as a general asset manager, using a not insignificant measure of risk tolerance in its approach in attempting to maximise its return for its owner, central government. The Riksbank should, in order to protect its financial independence, have different risk preferences to most other asset managers. This means that the Riksbank should ensure that the probability of losses is minimised, so that financial independence is not threatened. This is different compared to many other asset managers which can often be less risk averse in order to achieve a higher expected return.

The Riksbank should have a high aversion to risk in its asset management not only because of its need for independence but also because the risk of losses is difficult to quantify. There is a small but tangible risk that losses could be greater than those indicators presented in the inquiry. Another way to express this is that when, in financial risk management, a risk is expressed in the form of a capital sum that can be lost, there is still a risk that the outcome will be worse than that indicated by this capital sum (a tail outcome). Value-at-risk is one such measurement we have discussed, and our assessment of possible losses can also be seen as a similar estimate. Should the Riksbank incur losses, it is unlikely that this will occur in a market situation in which the return on high risk financial assets is also low (which in risk management jargon is referred to as "the correlation between risks approaches one in times of crisis").

The problems of tail outcomes apply not only to risks related to the Riksbank's activities. If the Riksbank takes financial risk, there is always the risk that the outcome will be worse than that estimated in the risk management models, i.e. losses are greater than those reflected in the VaR approach. To a certain extent there are newer and more sophisticated risk management models, better at estimating the probability and magnitude of extreme events. But even using such methods there is always the risk of a highly improbable event actually happening, or that the data used in the model does not reflect reality. This risk is difficult to manage for an organisation such as the Riksbank, which should have low risk preferences to guarantee its financial independence.

One example comes from the financial risk management used by financial actors. They often use the price volatility of financial assets from the past year, past hundred days etc., as variables in their models. Volatility varies a great deal over time, and when it suddenly increases, the financial actors experience many more "pass-throughs" in their models than expected, i.e. losses were greater than the VaR value for more days than that indicated by the probability distribution of the model.

Financial actors often use short time series because this is suitable for day-to-day risk management, and they supplement this with various types of stress test to estimate the more extreme and long-term loss risks. For a long-term asset manager with low risk tolerance, there is no reason to use short time series. On the other hand there are seldom time series as long as could be desired and there is always a serious risk that the data upon which the models are based do not reflect the future. The actual probability of a tail outcome may consequently be much greater than that estimated in the models, but this probability is not observable.

There are also reasons not directly connected with the risk of losses with too great a purely financial impact. If the Riksbank takes greater risk in its asset management and makes losses that, while significant, do not threaten its financial position, there may be other consequences. Experience shows that losses in asset management are often seen as a failure and lead to criticism, even when this is a result of conscious risk tolerance. It may appear unnecessary for the Riksbank to expose itself to such a risk. This also risks leading to management focusing on this type of issue instead of carrying out their primary responsibilities.

All in all there are a number of different difficulties and uncertainties related to risk assessment both with regard to the Riksbank's activity-related risks and with regard to any financial risk that the Riksbank could take, that mean that there are grounds to view the Riksbank's financial risk-taking restrictively. In the view of the Commission, this should mean that the Riksbank is not provided with cost-free capital in order to take financial risk.

Taking into account the range of different types of financial instrument in Swedish krona, a low risk in these circumstances probably means investment in Swedish interest-bearing securities, at least for the largest section of the portfolio.

As we discussed in the introduction, there are no grounds for the Commission to put forward a detailed proposal for how the Riksbank should position itself in its asset management. In the view of the Commission, what is important for the capital structure of the Riksbank is that it not be allocated cost-free capital in order to take financial risk. This probably assumes a low risk tolerance in its asset management.

However, there is a particular problem in that the Riksbank determines the shortest-term interest rate, the repo rate, which has a major significance for the development of the entire interest rate curve. With regard to the Riksbank's role in this respect it would appear out of the question for the Riksbank to actively administer fixed-income instruments in Swedish krona. Even if interest rate administration is separated internally, the Riksbank would have difficulty in being able to avoid suspicions that the interest rate administration gained an advantage from the information about the setting of interest rates in any active trade.

Because of that, the Riksbank should have a passive administration of Swedish fixed-income instruments, in which its position in the market is fully transparent and predictable. It would be easiest if the Riksbank did not even buy government securities, and instead invested directly in the Swedish National Debt Office at interest rates corresponding to the applicable rates, and if the position of the interest rate curve (duration) in the Riksbank's asset portfolio was stable and predetermined. However, according to EU rules central banks may not directly fund central government. They only have the right to buy interest-bearing securities on the secondary market, i.e. neither give direct loans nor participate in issues of government bonds. This forces the Riksbank to trade in existing securities in the market.

The Commission does not indicate where the Riksbank should position itself on the interest rate curve in terms of duration. If the Riksbank were to be short on the fixed income market it is not certain that the supply of short-term government securities would be sufficient were the Riksbank to get rid of a large part of the foreign exchange reserve. With a duration closer to the duration of the total central government debt, such a clear shortfall between supply and demand will not arise. On the other hand, there will be a general demand for Swedish government securities. In the light of the currently diminishing supply of government securities, this is something to be taken into account. This is discussed in more detail in Chapter 8 on transitional issues.

At the same time as there are good arguments for low risk in asset management, it must be noted that this does not provide a particularly good return on capital for taxpayers. There is an argument that it would be reasonable if central government worked towards a better return on the relevant funds, and allowed some risk tolerance on the part of the Riksbank with the aim of increasing the expected return. In the opinion of the Commission, asset management with a higher risk tolerance would entail the Riksbank being provided with cost-free capital which could bear some losses in its asset management. The basis of this approach is that high risk assets, for example equities, give a higher expected return, especially in the long-term, and it would be a shame not to make possible a better return for taxpayers when a relatively large amount of capital must be invested somewhere anyway.

However, the Commission considers that advocating more offensive asset management would not be consistent with the terms of reference and objectives of the Commission - proposing a capital structure which guarantees the Riksbank's financial independence. On the other hand, an assessment of how the taxpayers money would best be administered could lead to the Riksbank needing to take more risk in its asset management than has been discussed here.

Thus we can see that the aim of financial independence and the aim of generating a good return for taxpayers are in conflict with each other. For the Commission, which is mainly concerned with creating the conditions for financial independence, it is hard to judge how this conflict of aims should be evaluated. In the view of the Commission, the protection of financial independence should lead to the Riksbank being very restrictive in its risk taking; risks should not be taken unless they are necessary to fulfil the bank's terms of reference. In the opinion of the Commission, financial independence is best promoted by a low risk asset management.

In view of this, the Commission is not proposing that the Riksbank should carry on a more offensive asset management and be allocated cost-free capital for this, although in the longer term this could increase revenue for taxpayers.

6.5. Accounting issues

Judgement of the Commission: With a neutralised foreign exchange reserve and low risk asset management, accounting issues are of little importance to the profit allocation and capital structure of the Riksbank, and therefore do not affect the structure of the proposals.

Up to now the Commission has not dealt closely with accounting issues because the analysis is clearer if specific accounting rules are ignored. This is particularly true when these rules are not useful in explaining what happens economically when financial assets develop over time. Accounting in the Riksbank is governed by the ECB's rules for central banks within the ECBS and in some respects is specific.

Because the Commission's clarification of and proposals related to the capital structure of the Riksbank are broad in so far as only the more significant factors and risks are being discussed, the accounting rules are not of critical importance to the findings of the Commission. However, a couple of factors are worth touching on.

The first concerns profit for the year and how this is allocated. Profit for the year is not an unequivocal concept. In addition to a surplus of current income, generated by interest income from bond coupons etc, over costs, the Riksbank's profit consists of both realised and unrealised value change in the securities it holds. According to the accounting rules, realised profits must be included in the profit and loss account, while unrealised profits must be transferred to the revaluation account. Were the investments in Swedish krona, the surpluses and deficits which could arise in the revaluation accounts would be significantly smaller than they are today. It seems improbable that if the Commission's proposals are implemented that any more significant revaluation accounts of a similar size to today's will be built up.

Gold constitutes an exception. At present the gold reserve contains a substantial surplus, booked in a revaluation account. The market value of this gold, according to the annual report, was approximately SEK 22 billion, at the same time as the surplus in the gold revaluation account was the equivalent of SEK 7.3 billion. For most loss risks identified by the Commission, any losses are reported as a cost and therefore recognised in own capital. However, losses in the gold reserve resulting from value decreases will primarily lead to the revaluation account being written down. Only if losses are greater than the SEK 7.3 billion in the account are the losses recognised in own capital. This means that that part of the loss risk for gold losses that will need to be recognised in reported own capital is less than the SEK 8 billion discussed in Chapter 4. The remaining loss risk, after any losses have been booked in the revaluation account, can amount to about SEK 1 billion.

In the Commission's analysis, profit for the year has not been used as a concept. This can be seen as synonymous with net income. This clarifies that it is the income obtained by the Riksbank which is referred to. As mentioned above, net income contains interest income and realised exchange profit from its portfolio of securities. On the other hand, it does not include unrealised profit, which go straight into the revaluation account, and can be viewed as an accounting provision.

In light of this the Commission believes that accounting issues have no major significance for the proposals it is making.

6.6. The total capital need

Table 5 is a summary giving an estimate of the Riksbank's capital need.

Table 5. *The Commission's assessment of the Riksbank's capital need*

Reason for capital need	Assessment in Section	Capital need
Covering operating costs	3.4.2	SEK 32-43 billion
Covering the cost of banknotes and coin	3.4.2	SEK 8-11 billion
Losses from emergency liquidity assistance	4.1	SEK 10 billion
Losses in the management of the foreign exchange reserve	4.2	SEK 5 billion
Other	4.4	SEK 5 billion
Total capital need, including banknotes and coin		**SEK 60-74 billion**
Total capital need, excluding banknotes and coin		**SEK 52-63 billion**

In the table, the capital need has been totalled for the various types of risk. It could be argued that it is improbable that the losses materialise at the same time, and so it is doubtful whether the capital need should be totalled, at least with regard to the risks. At the same time the estimates are tentative and it is hard to see that diversification effects would better differentiate the total capital need. Nevertheless, as all types of loss should not happen at the same time, the capital need in the table is in the upper region of what could be seen as necessary.

7. The Commission's proposals for capital structure

Proposal of the Commission: The Riksbank's capital structure and profit allocation shall be regulated by law. Two alternative proposals are being given. The choice between them is largely a matter of whether currency in circulation is seen as an adequate alternative to own capital.

We have shown that there are many different arguments affecting the structure of the Riksbank's balance sheet. These arguments have been presented and discussed in previous chapters. In many respects the deliberations that need to be made mean looking at how to balance the advantages and disadvantages. These advantages and disadvantages consist of such difficult factors as the risk of improbable events, how large losses could be in that case, and how confidence in the Riksbank could be affected.

In light of this the Commission has decided not to propose *one* possible suitable balance sheet structure. Instead we are proposing two different balance sheet structures, both based on different perspectives on currency in circulation. In the first alternative, currency in circulation can be considered an adequate alternative to own capital. This means that the Riksbank can continue to use this large amount of capital to secure the funding of its operational activities. Because currency in circulation is greater than that needed by the Riksbank to cover its costs, some of the Riksbank's own capital can be released and repaid to central government. The size of currency in circulation even means that there is a margin between the access to cost-free capital and the capital need which the Commission has identified for the Riksbank. The disadvantages of this proposal are mainly that the Riksbank would be vulnerable if there were a rapid reduction in the amount of currency in circulation and that the Riksbank could be put in the situation of needing to explain that it had negative own capital.

The basis of the second alternative is that currency in circulation cannot be seen as cost-free capital for the Riksbank. In order to make it transparent that the currency in circulation is loan capital the Riksbank should pay interest to central government for this capital. In return the Riksbank must have substantial own capital. This alternative solves the problems caused by a rapid decrease in the volume of currency in circulation. The Riksbank would have a purer, clearer balance sheet with own capital used to fund current operations and potential losses. The disadvantages are that the proposal binds more capital in the Riksbank and that the Riksbank would be more vulnerable in the case of losses larger than those estimated by the Commission.

As we showed in Chapters 4 and 6, in estimating actual amounts the Commission has only been able to give a rough indication of how great the risk of losses would be for the Riksbank. The figures used in the various alternatives are therefore the result of relatively discretionary estimates. These estimates can be changed so that the amounts are different without changing the structure of the argument significantly.

7.1. Alternative 1

Proposal of the Commission: The Riksbank's right to issue banknotes and coin should be used to fund its operational activities. Currency in circulation constitutes cost-free capital which more than covers the needs identified by the Commission. Own capital in the traditional sense has the advantage of being generally accepted proof of financial strength. Own capital should therefore be made up of a statutory basic fund of SEK 10 billion. This would mean that approximately SEK 50 billion could be transferred from the Riksbank to central government.

The basis of this alternative is that it would be an advantage if the Riksbank had access to a large cost-free capital in the form of currency in circulation, which could be used for funding operational activities.

Of course, the basis of this assessment could change were the volume of currency in circulation to change (see 6.3). However, in the opinion of the Commission such a change is a long way off, and will happen in such a way that there will be plenty of time for the political system to react. Besides, there is a significant difference between the current currency in circulation, approximately SEK 112 billion and the cost-free capital required to fund current costs, SEK 60-74 billion. The currency in circulation can be reduced considerably without affecting the potential to fund the Riksbank's obligations.

As a result, if currency in circulation remains as cost-free capital in the Riksbank this should be adequate to fund current costs. However, the risk of losses also needs to be managed. As we discussed before, in strictly economic terms negative capital cannot be proved to be a financial problem for the Riksbank, as long as currency in circulation remains in the Riksbank's balance sheet. In principle own capital is interchangeable with currency in circulation. So it is possible to look at the volume of currency in circulation and see whether it would be sufficient to withstand potential losses caused by risk identified for the Riksbank.

However, the Commission believes that there are advantages in having some own capital in the Riksbank.

The size of this own capital is debatable. In Chapters 4 and 6 there are indications and a summary of the possible extent of losses. As we discussed before the Commission considers that own capital over and above that necessary should not be maintained by the Riksbank, though from a central government finance perspective the cost of maintaining capital in the Riksbank is small. This indicates that there is no reason to reduce the capital so much that confidence in the Riksbank could be called into question. Own capital in its traditional sense also has the advantage of being a generally accepted proof of financial strength, which can be an advantage internationally as well as with the Swedish public. Furthermore there are certain technical advantages with such a system. Thus the Commission believes that the Riksbank should be provided with a relatively small amount of own capital, and proposes that the level of this own capital be SEK 10 billion. This would allow the Riksbank to pay an extra dividend of approximately SEK 50 billion to central government.

In this case the Riksbank would distribute profits which would otherwise lead to its own capital exceeding SEK 10 billion. If own capital was below this level the Riksbank would retain its profits until the level of capital had been restored to SEK 10 billion. The principal of SEK 10 billion should be adjusted for inflation to make it applicable in the long-term.

Because the purpose of statutory regulation is to guarantee financial independence there is only reason to restrict the size of own capital. If for some reason the Riksbank's cost-free capital should be deemed insufficient, it would be appropriate for Parliament to allow the Riksbank retain a greater proportion of its profit, so that its own capital became greater than that indicated here. For example, this could be the case if currency in circulation decreased considerably or if losses greater than those considered by this Commission.

Were the change made now the Riksbank's balance sheet total would amount to SEK 130 billion.

7.2. Alternative 2

Proposal of the Commission: The basis of this alternative is that currency in circulation is not suitable as cost-free capital, as it is difficult to explain in a credible fashion that currency in circulation can bear potential losses and thereby guarantee the Riksbank's financial independence. This alternative means that currency in circulation is considered a debt to central government for which the Riksbank pays interest. So the Riksbank's total requirement for cost-free funding must be covered by own capital. Own capital should therefore be made up of a statutory basic fund of SEK 60 billion.

The basis of this alternative is that currency in circulation is not suitable as cost-free capital. The reason for this is, as discussed previously, that it is difficult to explain clearly and credibly that currency in circulation can bear potential losses. It is also natural that the right to seigniorage which currency in circulation gives rise to is seen as an asset for central government, not for the Riksbank. It is also an advantage that the financial position of the Riksbank is not affected by the demand for banknotes and coin, and that it is not exposed to risk associated with a sudden drop in this demand.

Such an approach means that currency in circulation can be seen as loan capital which central government has contributed to the central bank, and for which it is reasonable for the Riksbank to pay interest. This gives currency in circulation more the character of the liability it is already reported as in the balance sheet.

The interest which the Riksbank must pay for currency in circulation should correspond to a short-term risk-free interest rate in Swedish krona. The reason for this is that paying the interest should not mean that the Riksbank would be forced to take risks in its investments in order to be able to pay this interest. It would be suitable for the interest rate to be the shortest-term risk-free interest rate available, i.e. the repo rate. The Riksbank would thereby be determining the interest rate on its own loan, which causes a certain conflict of interest. However, since the Riksbank will be exposed to Swedish interest rate risk in its asset management according to the Commission's proposal, there is already a conflict of interest since the Riksbank would be able to improve its return by utilising its insider knowledge of the setting of interest rates. This is a problem which is discussed in Chapter 8. While the Riksbank has a different interest rate exposure in this alternative, because there is a debt for which the Riksbank pays interest, this does not change the problem fundamentally. The Riksbank's open interest rate position is not reduced in this alternative, but this does not change the need to handle the conflict of interest, especially as the balance sheet total, and thereby the assets, is greater than in alternative 1.

At the same time it should be emphasised that the Riksbank's management is primarily focussed on the fight against inflation, and that they are judged on their success in managing this task. The incentive for the Riksbank's management to exploit this conflict of interest should largely be non-existent. Hence they have strong reasons for showing that the conflict of interest is being handled.

If currency in circulation is seen as loan capital the Riksbank's total capital need should be covered by its own capital. The summary of the capital need in the previous section indicates a capital need in the order of magnitude of SEK 52-63 billion, when the cost of banknotes and coin is excepted. The reason that this cost is excepted is that is should be deducted from the interest which the Riksbank otherwise would pay, instead of forming a capital need. In addition, the Riksbank will be liable to pay a portion of its seigniorage to the ESCB if Sweden joins the Euro. A deduction should be made for any such payments from the interest the Riksbank pays to central government.

However, all other risks have been added, even though they do not occur at the same time. It can be assumed that there are certain diversification effects, so a somewhat lower capital need seems suitable.

One benefit of this alternative is that the estimate of the Riksbank's need for own capital is relatively close to the level of own capital that the Riksbank currently has today. At the end of 2006 own capital was about SEK 58 billion. The Riksbank therefore needs neither to make extra payments nor receive capital supplements, which can be seen as benefit.

The international comparison which the Commission has carried out also shows that the Riksbank's capitalisation is good when compared with other central banks.

This argument means that the Riksbank should have a level of own capital in the order of magnitude if SEK 50-60 billion. Consequently the Commission considers that SEK 60 billion is an appropriate level of own capital for this alternative.

With regard to profit distribution, all profits that raise own capital above the target level of SEK 60 billion should be distributed.

Because the purpose of statutory regulation is to guarantee financial independence, the size of own capital should be restricted. If for some reason the Riksbank's cost-free capital should be deemed insufficient, it would be appropriate for Parliament to allow the Riksbank retain a greater proportion of its profit, so that its own capital became greater than that indicated here. This could take place if losses were incurred greater than those considered by the Commission.

This level should be index linked and written up in line with inflation. The adjustment for inflation is more important than in alternative 1 because the Riksbank's cost-free capital in this alternative consists solely of own capital. This means that adjustment for inflation here refers to all cost-free capital, while the size of the largest portion of cost-free capital in alternative 1, currency in circulation, is dependent on factors outside the control of Parliament and the Riksbank, so cannot be adjusted for inflation. In this alternative the balance sheet total will be about the same as today, i.e. over SEK 190 billion.

7.3. The Riksbank's asset management

Proposal of the Commission: The task of asset management is made clear in the Sveriges Riksbank Act. The Riksbank manages its assets in order to carry out its policy tasks and to generate a return which can fund its operational activities, thereby creating financial independence. In managing its assets the Riksbank shall aim for a good return while taking account of the risk entailed. In managing its assets the Riksbank must also take account of its position as a central bank. The Executive Board shall establish detailed guidelines for asset management.

The management of the Riksbank's assets is an important task. However, the current wording of the Sveriges Riksbank Act gives no unequivocal guidance for asset management. The provisions of the Sveriges Riksbank Act regarding foreign exchange policy and in terms of monetary policy govern the asset management according to existing law. The lack of general rules for its asset management have probably contributed to the fact that the Riksbank currently invests all funds that do not have a specific purpose (e.g. monetary policy repo transactions and IMF obligations) in the foreign exchange reserve.

The Commission has not been tasked with submitting proposals regarding the focus of the Riksbank's asset management. However, when the currency risk in the foreign exchange reserve is neutralised in accordance with the Commission's proposals, a need will arise to indicate more clearly in the Sveriges Riksbank Act how asset management is to be carried on.

The basic purpose of asset management needs to be specified. It is clear that asset management is first and foremost aimed at allowing the Riksbank to fulfil its terms of reference. Its policy tasks must come first. In addition, the return on the Riksbank's assets forms the basis of its financial independence as we have shown. We therefore propose that the basic purpose of asset management set out in the Sveriges Riksbank Act shall be that the Riksbank's asset holdings are there so that the bank can fulfil its tasks and that they create the conditions for the independent funding of its activities.

The Commission has given an account of the deliberations regarding how the Riksbank's assets should be managed in Section 6.4. The opinion of the Commission is that these assets should be managed in such a way to make the financial risk low enough that no cost-free capital need be specifically allocated for risk in asset management. Greater risk tolerance would probably lead to a better return, benefiting central government and, by extension, taxpayers. But the Riksbank's need to be able to meet its obligations with the capital it has, even in the most unlikely situations, means that the Riksbank's assets should be invested taking careful account of the risk this entails. The objective of guaranteeing the Riksbank's financial independence, the Commission's task, does not require the achievement of higher returns in asset management if this is at the price of increased risk.

The balance between return and risk is a central strategic decision faced by all asset managers. It is difficult to give more tangible guidance to how to make this balance in the broad formulations that characterise legislation. One example can be taken from the rules related to the First - Fourth Swedish National Pension Funds. This expresses the focus in law as follows:

> *"The total level of risk in the investments in the funds shall be low. Fund assets shall, at the selected risk level, be invested so that a long-term high return is achieved."*[41]

The Swedish Pension Funds can invest a substantial proportion of their assets in equities. For example all four of the buffer funds have approximately 60 percent of their portfolios in equities. Equities are normally seen as a high risk investment. The fact that it is possible for the Swedish Pension Funds, despite the legal requirement for low risk, to invest a large proportion of the portfolio in equities, is in part due to the long-term risk perspective and in part due to good risk diversification.

The Commission does not consider it possible in legislation to better define the balance between risk and return. In the view of the Commission no specific cost-free capital should be conferred on the Riksbank for risk-taking in its financial management. Instead a system of internal governance and built in control mechanisms must be created.

In addition, the suitability of defining the Riksbank's asset management in more detail in legislation, is a subject for discussion. As an independent central bank the Riksbank should have relative freedom to formulate its operational activities, within the framework of the terms of reference given to it by Parliament. As was mentioned previously, the Commission has not been tasked with proposing the statutory regulation of the Riksbank's asset management.

In the opinion of the Commission it is sufficient for the legislation to indicate that the Riksbank shall aim for a good return, while taking into account the risk related to asset management. This gives a good basis for a more detailed development of asset management based on ALM as discussed in Section 6.4.

One further aspect which must be considered is the Riksbank's special position. Investments must not be made in such a way that the Riksbank's opinion on the economic situation can be deduced. Neither must the Riksbank take undue advantage of its position or knowledge in its asset management. Nor must there even be a suspicion that the Riksbank is using its position or special knowledge to gain financial advantage. And

[41] Chapter 4, Section 1 of the National Pension Funds Act (2000:192)

investments may not be made in such a way that third parties can, or believe that they can, predict future Riksbank policy. Naturally, asset management must not obstruct the implementation of policy. Generally, the meaning of this requirement is obvious, but difficult considerations may need to be made. The statute must express the need for the Riksbank's position to be taken into account in its asset management. However, it is not meaningful for the statute to try to specify the content of the requirement in more detail.

The relatively open task of asset management means that it is important that it be clear how the asset management guidelines are to be drawn up in detail. The Executive Board should be obliged to draw up guidelines for overall asset management. These guidelines shall be the instrument which in all respects governs how asset management is carried on in the Riksbank. It is therefore of the greatest importance that all relevant perspectives are expressed in these guidelines. The absence of detailed legal regulation of asset management is based on the idea that a system of internally set guidelines can be just as safe but more flexible as an instrument of governance, and thereby effective. The guidelines shall provide comprehensive instructions for asset management. In addition the guidelines shall be drawn up to facilitate external evaluation and governance.

The guidelines must thus highlight governance. This means that the internal supervision of the Riksbank's organisation should be dealt with in the guidelines. This includes issues such as the authority of various functions and staff and also reporting to ancillary and senior managers regarding actions taken. It is incumbent on the Executive Board to create an internal system of governance that is efficient as well as easy for third parties to oversee.

7.4. The concept of primary capital

Proposal of the Commission: The concept primary capital has a new meaning. Primary capital is increased by amounts being transferred from the reserve fund and contingency fund.

According to the Commission's two alternative proposals, the definition of fund assets will change in the Sveriges Riksbank Act. The present division into a primary capital of SEK 1,000 million, a reserve fund of SEK 500 million and a contingency fund, is changed so that the Riksbank in alternative 1 has the right to issue banknotes and coin and has a primary capital of at least SEK 10 billion, and in alternative 2 has a primary capital which shall be at least SEK 60 billion. Thus the concept primary capital has a new meaning in that through the new proposed legislation it will be the only form of own capital in the Riksbank.

The background to this proposal is that the Commission sees no reason to have three different funds, as the size of total own capital will have been set as a certain amount. In the opinion of the Commission to justify several funds they would need to be treated differently in law. For example the consequences of a fund not achieving the correct size which is the case for a limited company. There is nothing in the Commission's proposals that justifies the minimum amount of own capital held by the Riksbank being divided into different funds. The Commission therefore proposes only one form of capital called primary capital.

An increase of primary capital from SEK 1 billion to SEK 10 billion in alternative 1 and SEK 60 billion in alternative 2 will be achieved by transferring amounts to primary capital from the reserve fund and contingency fund.

7.5. The EU treaty and the proposals

Judgement of the Commission: Both proposals fulfil the requirements of EU law on the financial independence of central banks.

One of the reasons for guaranteeing the Riksbank's financial independence has been to fulfil the requirements of Article 108 of the EU treaty which states that the central bank shall be independent. Article 108 is not very specifically formulated, but the interpretations of it expressed in the convergence reports for Sweden state that the central bank must have sufficient financial resources to meet its obligations and that Parliament's allocation of the Riksbank's surplus should be regulated by law. The Commission considers that the requirements in the convergence reports are fulfilled in both of the Commission's proposals.

Alternative 1 says that part of the Riksbank's own capital, approximately SEK 50 billion, will be paid to central government. This means that the Riksbank's financial strength will be decreased, which could be seen as an erosion of the Riksbank's financial independence. The Commission has clearly shown that the Riksbank can continue to meet its obligations, even with the smaller capital proposed, so we consider it unreasonable to view the reduced own capital as a threat to the Riksbank's financial independence.

In certain respects a similar situation arose in Finland in 2003-2004. A number of changes to the Act on the Bank of Finland were proposed, one of which was related to a significant reduction in own capital. The proposal on the repayment of capital was withdrawn, but a rule was left in place stating that the Bank of Finland should distribute its entire profit to central government. In its comments on the proposal, the ECB stated that a repayment of the capital at the same time as there was no safeguard for it, would have threatened the independence of the Bank of Finland.[42] The ECB was also critical about the modified proposal, in that the entire profit should be paid out, because, among other things, there was no safeguard for the realisable value of the capital. In addition there was criticism that the proposed legislation did not guarantee clearly enough that the Bank of Finland could perform its ESCB-related tasks.

The Commission's proposals deal with the relevant issues in the ECB's criticism. In part the level of own capital is confirmed in law and in part its realisable value is safeguarded by being indexed. The Commission's proposals should therefore not run into the same criticism from the ECB as the Finnish proposal. In addition the Riksbank discharges its ESCB-related tasks with the proposed capital structure, in the first instance outside the

[42] Opinion of the European Central Bank of 20 January 2004 (CON/2004/1)

Euro, but also in the event of accession. The Commission therefore considers the proposals to meet the requirements of financial independence in the EU Treaty.

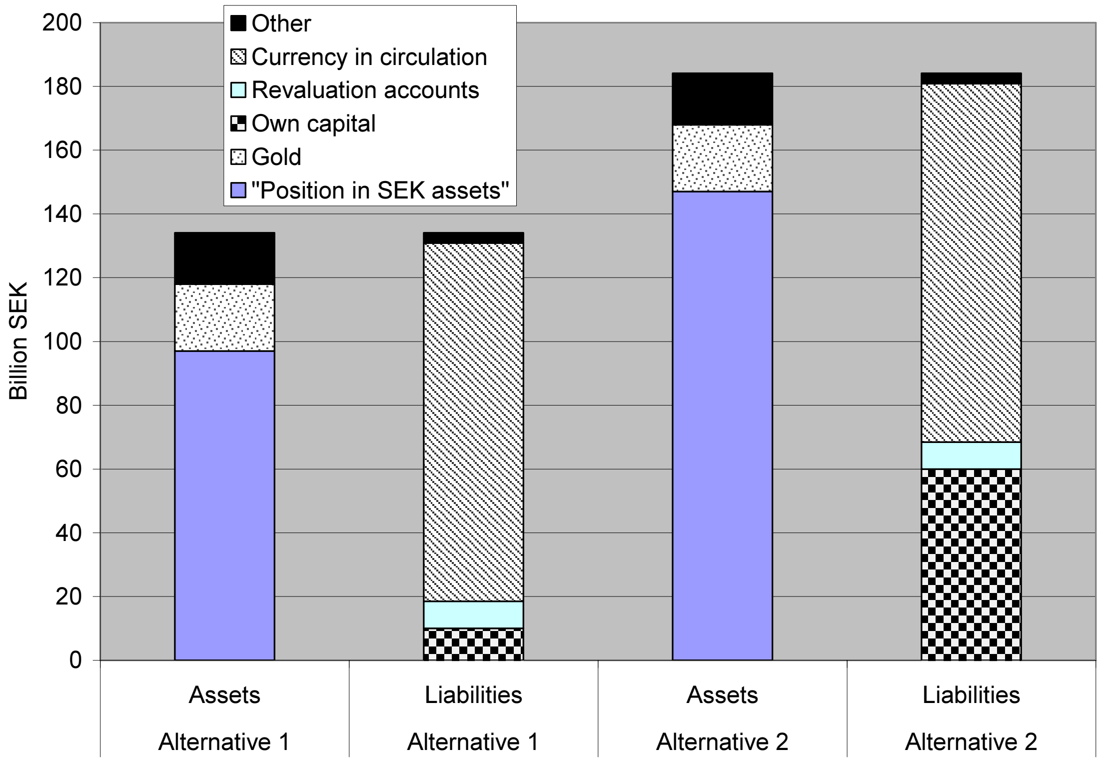
Another aspect of EU law is that there is a general principle that countries should not diverge from the norm in the EU when making changes to legislation. With regard to the size of capital, the international comparison shows that the Riksbank is well capitalised, and the proposals cannot be deemed to cause divergence in respect of this. To a certain extent the proposal to neutralise the currency risk in the foreign exchange reserve is unconventional. However, the Commission does not consider this to be divergence. As we have already discussed, currency interventions in modern financial markets are to a large extent carried out in derivatives. Because the Riksbank will continue to have a large balance sheet and substantial financial strength, there is no obstacle to it making currency interventions if this was required. The Commission cannot see that the proposal would diverge from the norm in the EU.

To summarise, the Commission considers that its proposal fulfils the requirements of EU law on the financial independence of central banks.

7.6. Overall picture of the Riksbank's balance sheet in the two alternatives

Figure 11 contains an illustration of how the Riksbank's balance sheet will look in the two alternatives.

Figure 11. *The Riksbank's balance sheet in the two alternatives.*



8. Transitional issues

This Chapter deals with issues of how the transition from the current balance sheet structure to one of the proposed structures will take place. Firstly there are the consequences of the extraordinary dividend of approximately SEK 50 billion in the Commission's alternative 1. Secondly there are the consequences of the transition from an open currency position in the foreign exchange reserve to a matched one.

Thirdly we need to discuss how the Riksbank should invest in the Swedish fixed income market, in part because the supply of interest-bearing securities is currently decreasing, and in part how the conflict of interest arising from the Riksbank's control of the short-term rates can be managed.

The Commission believes that these transitional issues do not warrant any specific transitional provisions in law. The legislative proposals made by the Commission can be carried out without specifying in detail how the transition from the current balance sheet structure to that proposed by the Commission will take place. The aim of the discussion about transitional issues is to show that the transitional issues arising from the Commission proposals are manageable, not through legislation but by the Riksbank, which has full legal capacity to manage them independently.

8.1. Effects of the extraordinary dividend in alternative 1

Judgement of the Commission: The extraordinary dividend of approximately SEK 50 billion can be divided into several portions in order to avoid any impact on the foreign exchange market caused by the Riksbank selling currency assets. No specific transitional provisions are needed for this. Parliament is able to decide on a suitable rate within the framework of the Commission's proposed legislation.

Alternative 1 imposes special requirements on the transition in that approximately SEK 50 billion must be repaid to central government. SEK 50 billion is a considerable amount. Because the Riksbank's realisable assets consist almost exclusively of assets in foreign currency, these must either be changed into Swedish krona before being paid to central government, or the repayment must be made in foreign currency and then changed by the Swedish National Debt Office. An exchange of this order of magnitude, regardless of whether it is carried out by the Riksbank or the Swedish National Debt Office, risks having a major effect on the foreign exchange market if it is carried out in a short period of time. This means that potentially the entire repayment should not be made on one occasion and instead divided up over several years. Alternatively the Swedish National Debt Office, if commissioned by the government, could neutralise the foreign exchange effects by adjusting loans in foreign currency (see also Section 8.2.1 for a discussion about this).

However, no specific transitional provisions would be needed because of this. Because the Commission's proposed legislation sets the capital in alternative 1 to *at least* SEK 10 billion, Parliament can split this up into several portions. Thus the dividends could be made slowly enough for the sale of foreign currency assets no to affect the exchange rate of the Swedish krona.

One further limiting factor could be that the ERM2 agreement obliges the Riksbank to restrict its transactions in Euros to EUR 750 million a day. However, the need to carry out the transition slowly, so as not to affect the Swedish krona, is probably more limiting than this rule.

8.2. Effects on the foreign exchange market of a change in the management of the foreign exchange reserve

Judgement of the Commission: The transition to a matched foreign exchange reserve should take place slowly, probably over several years, so as not to affect the exchange rate of the Swedish krona. The cost-free capital of SEK 5 billion calculated by the Commission for risk in the foreign exchange reserve is adequate for potential losses during the transitional period. So irrespective of the method the Riksbank decides to use, no specific transitional provisions are required.

With regard to the currency risk it is proposed that the Riksbank switches to a matched foreign exchange reserve. This is an important component in the Commission's assessment of the Riksbank's capital requirement in so far as it affects the need to maintain capital for financial risk-taking. There are problems inherent to a rapid change in the currency position. This raises the question of whether transitional provisions are required to manage the transition to a matched currency position. This is developed in Section 8.2.1.

The Commission has taken no position as to whether a neutralising of the Riksbank's currency position should be carried out with positions in derivatives or through matched borrowing in foreign currency. Furthermore the Commission has not taken a position on whether the Riksbank should have a certain size of foreign exchange reserve, or whether the Riksbank will manage with a very limited volume of foreign currency; to meet the requirements of the ECB for example. The various alternatives have different consequences. Simplifying the alternatives allows us to identify the following possibilities. Naturally they can be combined but to illustrate their consequences it is useful to simplify them.

1. The Riksbank retains its currency assets and borrows an equivalent volume of matched foreign currency.
2. The Riksbank retains its currency assets and hedges the currency risk on the derivative markets.
3. The Riksbank sells its currency assets and has no need to match the currency risk.

Sections 8.2.2 – 4 develop the consequences of these three courses of action.

8.2.1. The need for transitional provisions

Common to the different courses of action is that there will be an increased demand for Swedish krona when the repositioning of the foreign exchange reserve is carried out. If matching is carried out through borrowing in foreign currency the funds borrowed will need to be placed in assets in Swedish krona. If this is carried out through derivative instruments a demand for Swedish krona will arise in the futures market. And if it is carried out through a reduction in the size of the foreign exchange reserve the revenue from the sale of foreign assets will be invested in assets in Swedish krona. So in principle demand for Swedish krona arises in the same way regardless of how this repositioning is achieved.

In total a sum in the order of magnitude SEK 150 billion[43] in foreign currency assets will be converted into a position in Swedish krona. This is a significant redistribution which will result in a major demand for the Swedish krona. It can be seen as a comprehensive currency intervention which will potentially strengthen the Swedish krona. To avoid such an effect, the transition would need to take place over a relatively long period of time.

The Commission has considered whether there are grounds to propose a specific transitional period before the proposals come into force. This would be so the Riksbank could implement the redisposition of the currency risk in the balance sheet at a rate that would cushion the exchange rate from the increased demand for Swedish krona. However, the Commission does not consider this necessary for the following reasons.

It is difficult to accurately assess how great the effect will be on the foreign exchange market. If a very cautious approach is taken the transitional period may need to be several years. However, the Commission has set out a need for cost-free capital corresponding to SEK 5 billion for risk associated with foreign exchange interventions. In the foreseeable future the need for such risk capital seems negligible. Partly because nothing in the current focus of monetary policy indicates that the Riksbank would want to carry out interventions on the foreign exchange market. And partly because the probability of a switch to a fixed exchange rate in the foreseeable future is practically non-existent when one takes into account the lack of political discussion about entering the EMU in the next few years. In addition there is cost-free capital for other risks that could be used to absorb losses arising from changes in the exchange rate. The Commission´s grounds for allocating a cost-free capital for currency interventions are above all that its proposals must be applicable over a long period, and in the long-term the transition to a fixed exchange rate must be taken into account, if only in terms of accession to the EMU.

Thus it should be acceptable to view the currency risk as bearable during the transition from an open to a matched currency position. The currency position will decrease continuously and with it the currency risk remaining in the balance sheet.

[43] At the end of 2006 net currency assets, i.e. with deductions for repo transactions on the liabilities side of the balance sheet, and with the gold reserve excepted, amounted to SEK 148 billion.

Not setting a specific transitional period also has the advantage that the Riksbank will have greater freedom to structure the transition in such a way that the effects on the market of this transition are as small as possible.

Because transitional provisions are deemed unnecessary for the redisposition of the foreign exchange reserve, there is no reason to go into the implementation of the redisposition in greater detail. The purpose of the discussion in the following sections is solely to show that there are several alternative methods of implementing it, and that it is fully possible to carry out the change, so long as it does not happen too rapidly.

8.2.2. Direct borrowing on foreign markets

One possibility for the Riksbank to neutralise its currency position is to borrow equivalent funds in foreign currency in such a way that the assets in foreign currency are directly matched with the corresponding loans in the same currency. To a certain extent Danmarks Nationalbank has borrowing in foreign currency on its balance sheet, although it has an additional task to those discussed for the Riksbank, in that it must administer the entire Danish central government's overseas borrowing.

The Riksbank can borrow foreign currency, either by issuing securities or through direct loans. Which is more suitable is determined by balancing different factors, such as what type of instrument generates the lowest interest rates, how great the transaction costs are etc. The Commission sees no reason to go into this question in more detail, apart from the discussion related to the Swedish National Debt Office borrowing in Section 8.3.

8.2.3. Hedging the foreign exchange reserve on derivative markets

Because the derivative markets in the currency pairs that the Riksbank would need to hedge (i.e. the Swedish krona against the Euro, Sterling, and the American, Canadian and Australian dollars - all currently currency risks in the foreign exchange reserve) are liquid, there should be no major practical problems or costs in entering derivative contracts to match the currency risk. To a certain extent the Riksbank already adjusts the currency risk in its portfolio using positions in derivatives, rather than just using the spot markets.

Should the Riksbank choose to enter into derivative contracts to hedge a major part of its currency assets, the outstanding positions against the derivative counterparties would be substantial. Because of this the Riksbank must have a strict control of the counterparty risk, which means having agreements on collateral with all counterparties for example. With good risk management this counterparty risk is fully manageable. In this case there is no reason for the Riksbank to maintain a specific cost-free capital for counterparty risk of a magnitude that would make it worth considering within the framework of the work of this Commission.

8.2.4. Sale of the foreign exchange reserve

If the foreign exchange reserve is sold the revenue will be used to purchase Swedish interest-bearing securities. The supply effect on the price should be limited as these are assets in liquid currencies. Largest are the Euro assets at over EUR 10 billion, which it should be possible to sell without any significant effect on the price if this is carried out over a period of time. It would be most advantageous if the Swedish National Debt Office and the Riksbank could swap assets, i.e. if the Swedish National Debt Office could issue paper that the Riksbank exchanged for currency assets. However, taking into account the EU prohibition against direct government borrowing from central banks, it is not possible to conduct such a swap in the opinion of the Commission.

Thus the Riksbank needs to invest the revenue from sales of foreign currency assets in the secondary market for Swedish interest-bearing securities. Besides the potential impact on the Swedish krona's exchange rate when the foreign currency assets are converted into to Swedish krona, the increased demand for interest-bearing securities must be taken into account.

One further limiting factor is that according to EU rules for the acquisition of government securities by central banks, the net acquisition of Swedish government securities may not exceed 0.1 percent of GDP per quarter. This means that government securities to a value of SEK 10 billion can be acquired every year. If the Riksbank implemented neutralisation only by selling foreign assets and by purchasing Swedish government securities the neutralisation would take a long time, about 10 years in alternative 1 and 15 years in alternative 2. This indicates that this alternative needs to be combined with one of the other alternatives so that the transitional period is not too long.

The consequences of this alternative are some transaction costs and a lack of currency assets to sell on the spot market if currency interventions need to be undertaken. If there are no currency assets any interventions must be made in the derivative markets, which of course is still the established procedure.

As stated above the ECB also sets requirements for central banks within the ESCB on maintaining foreign exchange reserves of a specific size. So this is also a restriction on how much of the foreign exchange reserve can be sold off.

8.3. The Riksbank as investor in the fixed income market

Judgement of the Commission: A switch to asset management in Swedish krona means that the Riksbank must manage the conflict of interest in both setting the interest rate and being an investor. Furthermore, this transition must take into account the supply of Swedish interest-bearing securities and the impact on market prices.

8.3.1. Managing issues of supply and demand in the fixed income market

In both of the Commission's proposals the Riksbank will become a major investor in low risk assets in Swedish krona, first and foremost interest-bearing securities. In the first and third courses of action above, the revenue from borrowing in foreign currency, or from the sale of currency assets, will be invested directly in the Swedish fixed income market. In the second course of action there is no direct investment in interest-bearing securities, the position in Swedish krona will jointly consist of holdings in foreign assets and an offset position in derivatives.

The manner in which redisposition takes place is of no critical importance. However, it is clear that the Riksbank will cause a substantial demand for Swedish government securities, a demand corresponding to approximately SEK 150 billion. In March 2007 the total stock of outstanding government bonds and treasury bills amounted to SEK 990 billion. The current strong central government finances and the privatisations of state-owned companies planned at the time of writing, are reducing the supply of government securities. There is a discussion today about whether the supply of government bonds is beginning to be too small for the needs of investors. In the Commission's proposals this effect risks being mixed up with the high demand for assets in Swedish krona which the Riksbank obtains.

In Section 8.1.1 we said that the change to a new balance sheet structure should take place slowly so that the exchange rate of the Swedish krona would not be affected. It is at least as important that the Riksbank does not switch to a position in Swedish krona faster than the market can absorb the increased demand for government securities without seriously impacting interest rate levels. So this also backs a slow and flexible transition. In this context the Riksbank also has the opportunity to adjust its transition to any major changes in the supply of government securities, for example braking the transition in periods when there are major influxes into the central government budget, so that the Riksbank does not boost the demand shock.

While the conditions of supply and demand are important for a transition they should not be seen as an obstacle to it. There are, notwithstanding, countries that have a much smaller central government debt than Sweden, and these also have government securities markets that work, though not as liquid as the Swedish market, and perhaps not with such long maturities. At the same time there are market mechanisms that mean that the interest rate should not be stabilised too far below a price which is reasonable in relation to other assets, for example Euro interest rates for corresponding amounts. In light of this, the transition should be seen as manageable, but it may need to be carried out slowly so that the impact on price is minimised.

One possibility would be for central government through the Swedish National Debt Office to try to neutralise the impact so that central government's aggregated balance sheet (i.e. including the Riksbank) will remain unchanged. Currently the Riksbank has foreign currency assets equivalent to SEK 150 billion while the Swedish National Debt Office has foreign currency debt of approximately SEK 260 billion, i.e. they have a joint foreign currency debt of about SEK 110 billion. Loans in foreign currency could be converted to Swedish krona securities at the same tempo as the Riksbank reduced its open currency position. The advantage of this would be that the Riksbank's increased demand for assets in Swedish krona would be met by the Swedish National Debt Office, with a neutralising effect on interest rates. A corresponding effect would also arise in the foreign exchange market so that the pressure on the Swedish krona would decrease and the "currency intervention" discussed above would be neutralised.

From a central government finance perspective it should be the aggregated net foreign currency position that is important. If the Swedish National Debt Office is tasked to cooperate with the Riksbank to neutralise the impact of the reduced currency position, it should be possible to make the transition much quicker than has been outlined out above.

According to the government's current guidelines for the administration of the central government debt the currency debt should also be reduced to 15 percent, approximating SEK 190 billion given the current size of the central government debt. Thus the Swedish National Debt Office currency borrowing must be reduced by about SEK 70 billion according to decisions already taken. This could neutralise the effect of change to the Riksbank's currency position, both in the event of the extraordinary dividend according to alternative 1 and a redisposition of the Riksbank's currency position. However, because the adjustment in the Swedish National Debt Office has already started the change may already have been largely carried out by the time a decision is made on the Commission's proposals. The Commission cannot say how any such coordination could be adjusted chronologically. The aim has only been to call attention to the possibility of adjustment.

There are also points to take into account regarding how central government governance is to be organised if this sort of coordination is to be carried out. With regard to any extraordinary dividend in alternative 1, it is Parliament which must take this decision. The central government debt administration guidelines are decided by the government, and the Swedish National Debt Office implements any changes. With regards a redisposition of the foreign exchange reserve it is the Riksbank that carries this out independently. So there needs to be coordination between Parliament, the government, the Riksbank and the Swedish National Debt Office.

Currently the Riksbank has a relatively high interest rate risk in currency assets. The objective set by its executive board for the Riksbank's currency assets is currently an average modified duration of 4.0. This Commission has chosen not to directly specify how large an interest rate risk the Riksbank should have in its portfolio. What is important from the perspective of this Commission is that the Riksbank is not exposed to interest rate risk to the extent that it must be provided with a separate buffer capital to cover it. The redistribution of interest rate risk which may be required should not cause any demand issues regarding market interest rates.

8.3.2. Conflicts of interest for the Riksbank as an actor in the fixed income market

In addition to the impact on market interest rates we need to explain how the Riksbank can act as an investor in the fixed income market at the same time as it determines interest rates, a state of affairs that could be used to make profits on the fixed income market.

This conflict of interest arises and must be dealt with regardless of whether the Riksbank trades directly in Swedish interest-bearing securities, or if it converts foreign assets into a position in Swedish krona using positions in derivatives (see also 6.4).

Two main methods of managing this conflict of interest can be identified. One is to ensure that there are very strict Chinese walls between fixed income trading and monetary policy. Potentially this can only be adequately credible if the administration is placed outside the Riksbank. Another way would be to have strict mechanical rules for what the Riksbank should buy. However, this exposes the Riksbank to the risk of being squeezed by the market (the market knows that it must buy certain instruments at certain times).

The Commission sees no reason to settle in more detail how this conflict of interest should be managed. The changes to legislation proposed by the Commission state that the Riksbank may invest in fixed interest assets, but at the same time it is clear that monetary policy comes first. The Commission believes that the Riksbank has every reason to ensure that there is no suspicion that the conflict of interest is being exploited, thereby risking the credibility of monetary policy being called into question. In the view of the Commission there are no grounds for specifying in statute how conflict of interest should be managed.

9. Consequences for central government finance

The Commission's proposals have certain effects on central government finance. These effects depend on the extent to which central government borrowing through the Swedish National Debt Office is adjusted in accordance with the Commission's proposals and the rate at which the redisposition of the foreign exchange reserve takes place. Both of these aspects are kept open in the Commission's proposals because neither is of critical importance for the legislation regarding the Riksbank's capital structure.

This Chapter first describes how the Riksbank's transfers to the treasury will be affected by the proposals. A second section discusses the effects on central government finance from a broader perspective, and here any adjustment of central government borrowing becomes important. Both descriptions assume an immediate neutralisation of the currency position. While unrealistic, this assumption works well in the relevant context, as it is the long-term changes in central government finance, after the proposal has been completely implemented, that are of interest.

9.1. The Riksbank´s transfers to central government

Judgement of the Commission: In alternative 1 there is a one-off payment to central government of approximately SEK 50 billion, along with a forecast annual transfer to central government of over SEK 3 billion. In alternative 2 the balance sheet is unchanged and the forecast annual transfer to central government amounts to over SEK 5 billion.

After its transfer to the treasury for the 2006 financial result, the Riksbank's own capital amounted to SEK 58,246 million. Calculations that have been made by the Commission are based on this reported value, rounded down to SEK 58 billion. The Commission has made its calculations as if the changes were to be made immediately – during 2007.

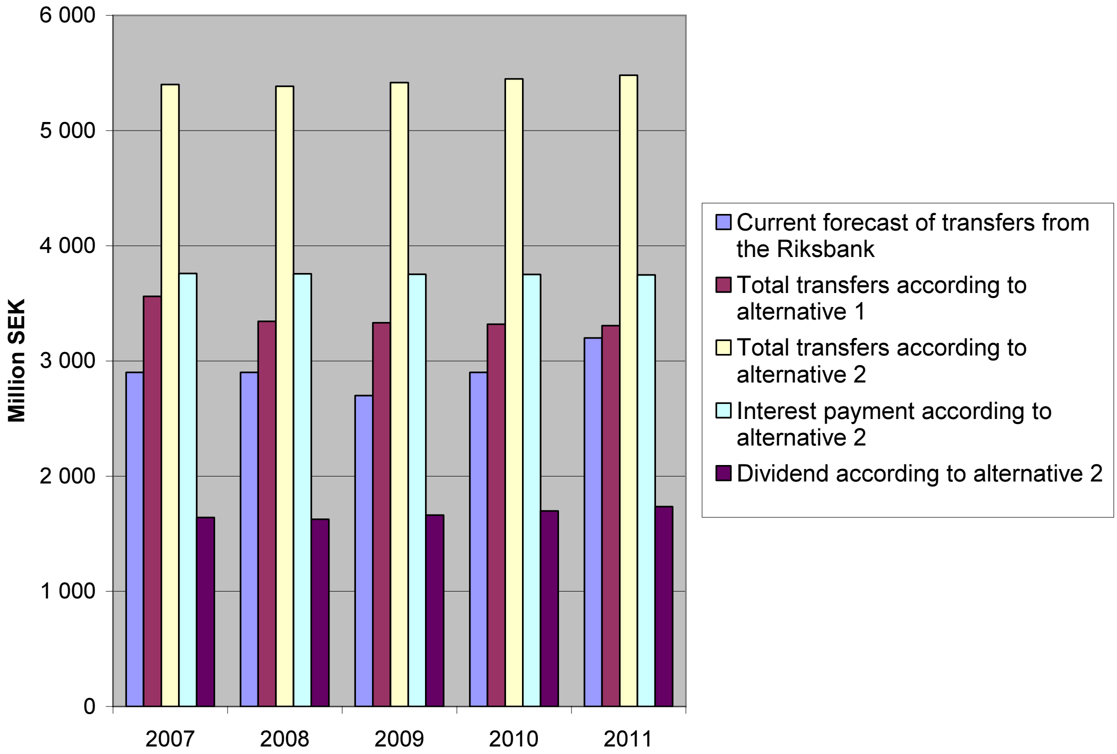
One fundamental difference between alternative 1 and alternative 2 is that alternative 1 proposes a one-off dividend which reduces the Riksbank's own capital to SEK 10 billion. Based on the 2006 financial statement a one-off payment would amount to around SEK 50 billion (SEK 48 billion to be more exact).

Thus alternative 1 leaves a balance sheet forming a much smaller basis than alternative 2 for the profits that central government can expect from the Riksbank (this is illustrated in Figure 11 in Section 7.4). In alternative 1 the balance sheet amounts to SEK 134 billion while in alternative 2 it amounts to SEK 184 billion[44].

[44] For this calculation we have assumed that own capital will be SEK 10 and 60 billion respectively for the two alternatives, gold will be sold at the same rate and to the same value as in 2006 and that other balance sheet items (currency in circulation, other assets, revaluation account and other liabilities) will be unchanged over the year.

In alternative 1 the yield bearing position in Swedish krona will amount to SEK 97 billion, while in alternative 2 it will be SEK 147 billion. This gives rise to differences in the expected transfers (see Figure 12).

Figure 12*. Transfers from the Riksbank to the treasury using the current forecast and the two alternatives.*



Note: These calculations are based on the current Swedish Ministry of Finance forecast for transfers, and for the two alternatives on an expected return of 4 percent and an expected repo rate of 3.5 percent.

The current forecast for the transfer is about SEK 3 billion per year, about SEK 3 billion for alternative 1 and over SEK 5 billion for alternative 2. What makes the current forecast lower is that it implies an interest rate level lower than the 4 percent basis of these calculations, and also that it contains expectations regarding rising long-term interest rates which lead to negative changes in value. If the assumptions were the same, the difference between alternative 2 and the current principle for transfers would be marginal. The difference between alternatives 1 and 2 is due to the interest-bearing position in Swedish krona being lower in alternative 1. In addition to this there is naturally a significant difference in the extra payment of SEK 48 billion contained in alternative 1, which is taken as having been made immediately. However, from a purely financial perspective the two proposals are generally identical.

9.2. Size of central government debt

Judgement of the Commission: The Commission's alternative 1 reduces central government debt by SEK 48 billion, or 1.7 percent of GDP. Alternative 2 does not affect the size of central government debt.

The previous section showed that the treasury with the Commission's proposal can expect to receive an annual dividend from the Riksbank of a level that is equivalent to that of today. For alternative 1 this can be in the order of magnitude SEK 1 billion and for alternative 2 in the order of magnitude SEK 3 billion. In alternative 1 there is an added transfer of SEK 48 billion which is made immediately on transition to the new capital structure. Because this reduces the interest costs of central government debt by approximately the same amount the total impact on central government finance is the same.

One consequence of the capital being transferred from the Riksbank is that central government debt decreases. The central government debt is usually reported in two ways; either in the form of the Swedish National Debt Office's borrowing[45] or as the gross consolidated public sector debt. The latter is the calculation of debt used in EU Commission calculations for meeting the Euro participation criteria. The main difference is that the consolidated gross debt also contains public sector debt on the credit market and the premium pension system claims on the Swedish National Debt Office (central government), and also deductions are made for the holdings of the public sector and Swedish Pension Funds in government securities and public authority debt.

According to the spring budget at the end of 2006 central government debt amounted to SEK 1,220 billion (43.0 percent of GDP) and the consolidated gross debt was SEK 1,331 billion (46.9 percent). A repayment of SEK 48 billion means that central government debt will fall to 41.3 percent of GDP and the consolidated gross debt to 45.2 percent of GDP, provided that the repayment was made at the end of 2006. In the coming years central government debt is expected to fall which means that these proportions will change in the future. However, this reduction in central government debt will approximate 1.7 percent of GDP.

With the Commission's alternative 2 the size of central government debt is not affected either in the short-term or long-term. The annual dividend will be greater but central government will pay more in interest because the central government debt is greater than in alternative 1.

[45] When central government debt is reported in the Spring Budget Bill, a deduction is made for the state authorities' holdings in government securities from the amount that the Swedish National Debt Office has borrowed. It is this level of central government debt used here as well.

9.3. The exchange-rate exposure of central government finance

Judgement of the Commission: The aggregated exposure of central government finance to changes in the exchange rate will be changed by the proposal. The size of this change will depend on central government's management of its aggregated currency position, i.e. the extent to which the Swedish National Debt Office currency debt is adjusted when the Riksbank neutralises its currency assets.

Central government finance is also affected by the aggregated currency exposure to which the central government finance is exposed. Currently the Swedish National Debt Office currency borrowing and the Riksbank's currency assets neutralise each other to a certain extent. When the Swedish krona strengthens the value of the Riksbank's currency assets falls, but at the same time the value (in Swedish krona) of the currency debt of the Swedish National Debt Office also falls. From a budget perspective the transfers from the Riksbank decrease, at the same time as the costs of the currency swap also decrease. This matching effect is far from perfect today, because the different currency compositions of the Swedish National Debt Office's foreign borrowing and the Riksbank's currency assets, and also because transfers from the Riksbank are governed by specific rules. However, at an outline level it is relevant to take the effect into account.

As discussed in Chapter 8 the Riksbank's currency assets amount to approximately SEK 150 billion[46] and the Swedish National Debt Office´s currency debt to about SEK 260 billion, which means a net position of SEK 110 billion. Of course central government has other currency positions in its aggregated balance sheet, but these are disregarded here.

But the Commission's proposal regarding a neutralisation of the currency position in the Riksbank increases central government's open currency exposure from SEK 110 to 260 billion. As discussed this effect can be neutralised if central government wishes it. If it does not, total central government finance will be more exposed to variations in the exchange rate.

An appropriate view on aggregated central government currency exposure is outside the terms of reference of this Commission, and is something that must be taken into account when the government provides guidelines for the administration of public debt. The purpose of this discussion is to point out these consequences.

[46] Gold excluded and with deductions for repo transactions on the debit side.

10. Statutory comments

10.1. Alternative 1

Proposals for the wording of and commentaries on legislation:

The reasons behind the proposals have been developed in Section 7.1.

Chapter 10, Fund assets, allocation of profit, budget and discharge from liability

Section 1 The financial independence of the Riksbank is guaranteed by it having the right to issue banknotes and coins, and in addition having primary capital amounting to at least SEK 10 billion.

This paragraph expresses the Commission's underlying views on how the Riksbank's financial independence is to be achieved. The Chapter's heading has been amended in accordance with this.

The concept primary capital has a different meaning than before, this is developed in Section 7.4. Previously primary capital was set as a nominal amount. The Commission's proposal allows primary capital to be a varying amount.

The ECB's convergence reports have commented that there are no regulations that exclusively govern how the transfer of funds from the Riksbank to central government shall take place. The provisions in this paragraph and the other regulations in the chapter now meet the ECB requirements regarding capital strength and protection against the transfer of funds.

Section 2 The requisite amount of primary capital pursuant to Section 1 shall be adjusted upwards annually by a factor corresponding to the change in the consumer price index, calculated as the ratio between the consumer price index for the month of October in the year before the current financial year and the consumer price index for the month of October 1992.

The costs of financing the operation of the Riksbank can be expected to rise in line with general price trends. The amount of primary capital should therefore be adjusted upwards in accordance with this and linked to the trend of the consumer price index. The wording of this provision makes clear that it is the original amount of primary capital which is to be adjusted upwards year by year and not the actual primary capital in a specific year. If the consumer price index decreases it does not mean that the requisite amount of primary capital is reduced.

Section 3 Should primary capital be less than that set out in Sections 1 and 2 no transfer to central government may take place.

The provision in this paragraph makes clear that the Riksbank's capital strength must be built up as quickly as possible after losses which have affected the amount of primary capital pursuant to Sections 1 and 2. This means that it is the adjusted amount of primary capital pursuant to Section 2 which determines whether profit distribution may take place. The same result should be achieved by Section 4, but this provision makes clear this prohibition against distribution.

Section 4 The profit for the year shall be allocated as follows.

1. Provision shall be made to the primary capital so that it amounts to that contained in Sections 1 and 2.
2. That remaining after any provision pursuant to point 1 may be distributed to central government.

These provisions specify how profit for the year is to be allocated. As stated in Section 2, the requisite amount of primary capital each year is adjusted upwards in relation to the increase in the consumer price index. The first point specifies that provision shall be made so that primary capital is the requisite amount pursuant to Section 2. This means that if in previous years it has not been possible to make sufficient provision, then this must be corrected in the current year.

When provision has been made pursuant to the first point, the remainder of the profit can be distributed to central government. The primary rule is that the entire profit is distributed to central government, but Parliament can decide that only part of the profit be distributed, for example if it believes that the Riksbank's financial position should be strengthened or if it is considered unsuitable for the entire extraordinary dividend made possible in this alternative to be allocated. Parliament can decide that only part of the profit be distributed, regardless of whether this has been proposed by the General Council or not.

Pursuant to Sections 3 and 4, in the event that the Riksbank makes a loss neither provision to primary capital nor distribution shall take place.

Section 5 The Riksbank's Profit and Loss Account and Balance Sheet are approved by the Riksdag, which also determines the allocation of the Riksbank's profit. The Riksdag determines whether the General Council shall be discharged from liability for its activities and the Executive Board for its management of the Riksbank. Discharge from liability may only be denied if there are reasons to make claims of financial liability against a member of the General Council or the Executive Board, or if the member should be prosecuted for criminal actions in connection with his assignment or employment.

The first sentence specifies that it is Parliament that establishes the Riksbank's profit and loss and balance sheets, and by doing so decides the extent to which provision is made to primary capital. In making such a decision Parliament applies sections 1 – 4 §§. Furthermore it is Parliament that decides how the Riksbank's profit is to be allocated. The profit can either be distributed entirely to central government or all or part of it can be left in the Riksbank. The provisions on freedom from responsibility are unchanged.

Current Section 1a becomes 6, 2 becomes 7, 3 becomes 8, 5 becomes 9.

10.2. Alternative 2

Proposals for the wording of and commentaries on legislation:

An account of the reasons behind the proposals has been given in Section 7.2.

> **Chapter 10, Fund assets, contribution, allocation of profit, budget and discharge from liability**
>
> *Section 1 The Riksbank shall have a primary capital amounting to at least SEK 60 billion.*

This paragraph expresses the Commission's underlying views on how the Riksbank's independence is to be achieved. The Chapter's heading has been amended in accordance with this.

The concept primary capital has a different meaning than before, this is developed in Section 7.4. Previously primary capital was set as a nominal amount. The Commission's proposal allows primary capital to be a varying amount.

The ECB's convergence reports have commented that there are no regulations that exclusively govern how the transfer of funds from the Riksbank to central government shall take place. The provisions in this paragraph and the other regulations in the chapter now meet the ECB requirements regarding capital strength and protection against the transfer of funds.

> *Section 2 The requisite amount of primary capital pursuant to Section 1 shall be adjusted upwards annually by a factor corresponding to the change in the consumer price index, calculated as the ratio between the consumer price index for the month of October in the year before the current financial year and the consumer price index for the month of October 1992.*

The costs of financing the operation of the Riksbank can be expected to rise in line with general price trends. The amount of primary capital should therefore be adjusted upwards in accordance with this and linked to the trend of the consumer price index. The wording of this provision makes clear that it is the original amount of primary capital which is to be adjusted upwards year by year and not the actual primary capital in a specific year. If the consumer price index decreases it does not mean that the requisite amount of primary capital is reduced.

Section 3 Each year the Riksbank shall pay a contribution to central government calculated in accordance with an interest rate corresponding to the repo rate on the nominal amount of currency in circulation.

This provision makes clear that the liability item corresponding to currency in circulation constitutes loan capital. This is primarily manifested in that the Riksbank must pay an annual contribution corresponding to the repo rate for currency in circulation. It is not appropriate in the statute to indicate what technical method will be used to calculate the contribution in more detail. It should be assumed that this calculation will be made using the most exact methods available.

Section 4 Should primary capital be less than that set out in Sections 1 and 2 no transfer to central government may take place.

The provision in this paragraph makes clear that the Riksbank's capital strength must be built up as quickly as possible after losses which have affected the amount of primary capital pursuant to Sections 1 and 2. This means that it is the adjusted amount of primary capital pursuant to Section 2 which determines whether distribution may take place. The same result should be achieved by Section 4, but this provision makes clear this prohibition against distribution.

Section 5 The profit for the year shall be allocated as follows.

1. Provision shall be made to the primary capital so that it amounts to that contained in Sections 1 and 2.
2. That remaining after any provision pursuant to point 1 may be distributed to central government.

These provisions specify how profit for the year is to be allocated. As stated in Section 2, the requisite amount of primary capital each year is adjusted upwards with regard to the increase in the consumer price index. The first point specifies that provision shall be made so that primary capital is the requisite amount pursuant to Section 2. This means that if in previous years it has not been possible to make sufficient provision, then this must be corrected in the current year.

When provision has been made pursuant to the first point, the remainder of the profit can be distributed to central government. The primary rule is that the entire profit is distributed to central government, but Parliament can decide that only part of the profit be distributed, if it believes that the Riksbank's financial position should be strengthened. Parliament can decide that only part of the profit be distributed, regardless of whether this has been proposed by the General Council or not. Pursuant to Sections 3 and 4, in the event that the Riksbank makes a loss neither provision to primary capital nor distribution shall take place.

Section 6 The Riksbank's Profit and Loss Account and Balance Sheet are approved by the Riksdag, which also determines the allocation of the Riksbank's profit. The Riksdag determines whether the General Council shall be discharged from liability for its activities and the Executive Board for its management of the Riksbank. Discharge from liability may only be denied if there are reasons to make claims of financial liability against a member of the General Council or the Executive Board, or if the member should be prosecuted for criminal actions in connection with his assignment or employment.

The first sentence specifies that it is Parliament that approves the Riksbank's profit and loss and balance sheets, and by doing so decides the extent to which provision is made to primary capital. This takes place in the same way as stipulated in current legislation, after a proposal by the General Council of the Riksbank, which follows from the new Section 9. In making such a decision Parliament applies sections 1 – 5 §§. Furthermore it is Parliament that decides how the Riksbank's profit is to be allocated. The profit can either be distributed entirely to central government or all or part of it can be left in the Riksbank. The provisions on freedom from responsibility are unchanged.

Current Section 1a becomes 7, 2 becomes 8, 3 becomes 9, 5 becomes 10.

10.3. Asset management

With regard to the rules on how the Riksbank manages its assets, we propose that they be inserted in Chapter 8 of the Sveriges Riksbank Act. These rules are common to both alternatives.

Chapter 8, Asset management and other tasks

An account of the reasons behind the proposals has been given in Section 7.3.

Section 1 The Riksbank holds assets in order to be able to carry on its tasks pursuant to this Act and in order to be able to finance its operational activities independently.

The first part of the paragraph shows that the Riksbank holds assets in order to carry out its policy related tasks, being able to carry out monetary policy repo transactions and provide emergency liquidity assistance for example. The second part shows that holding assets, and the return generated by these assets, forms the basis of financial independence.

Section 2 The Riksbank's assets shall, taking into account the various purposes of the asset holdings, be managed so that a good return is achieved while at the same time the risk inherent in this management is taken into account. This management shall also take into consideration the Riksbank's position as a central bank.

An account of the proposal has been given in Section 7.3. This provision aims to indicate the framework for asset management. This is relatively broad and only indicates that a good return should be sought, and that risk must be taken into account. The reason that the purposes of management should be taken into account is that it is not always possible for the Riksbank to be guided by an assessment of return potential in relation to risks. An example is if the Riksbank provides emergency liquidity assistance, which does not give a particularly good return, at the same time as it is associated with serious risk. Another example is IMF undertakings which are not motivated by considerations regarding the potential financial return and risk.

The reasons why the Riksbank's special position must be taken into account have been accounted for in Section 7.3.

> *Section 3 The Executive Board shall establish guidelines for the management of financial assets.*

This provision obliges the Executive Board to draw up guidelines for overall asset management.

Current Section 1 becomes 4, 2 becomes 5, 3 becomes 6, 4 becomes 7, 5 becomes 8, 6 becomes 9.

Opinion

Opinion of the experts Åke Hjalmarsson and Marie Norman

We agree with the important considerations and the proposals in general. On one point we consider the proposed legislation unsuitable. This applies to how the balance between return and risk is to be made in the Riksbank's asset management.

The Commission's proposals mean that the Riksbank has a significant amount of cost-free capital at its disposal. The purpose of this capital is to give the Riksbank financial independence.

In Section *6.4 How should the Riksbank's assets be invested?* the Commission considers how the Riksbank's assets are to be managed when there are assets other than those in foreign currency. The Commission states that these assets should be administered in such a way that the financial risk is so low that no cost-free capital need be specifically allocated for risk-taking in asset management. In addition, it states that the Riksbank should have a high aversion to risk in its asset management and low risk preferences to guarantee its financial independence.

In the *Summary* the Commission sums up its opinion that the Riksbank's assets should be invested at low risk.

It should also be pointed out that in Section *3.4.5 Capital need for current operating costs* the Commission calculates the Riksbank's capital need based on a real return of an average 1.5 to 2.0 percent being achieved. We consider this to be an expected return compatible with low risk management.

We understand that the Commission's opinion is that the Riksbank's assets should be managed at a low risk. We are of the same opinion but we feel that this fundamental view is not clearly expressed in the Commission's proposed legislation. With regards to asset management the Commission has the following proposal.

> ***Chapter 8***
>
> ***Section 2*** *The Riksbank's assets shall, taking into account the various purposes of the asset holdings, be managed so that a good return is achieved while at the same time the risk inherent in this management is taken into account. This management shall also take into consideration the Riksbank's position as a central bank.*

The wording proposed by the Commission means that there is almost no guidance as to how the balance between a good return and risk is to be achieved. We feel that the statute should better reflect the Commission's considerations. We also feel that it is self-evident that the Riksbank's monetary policy task must have priority over its asset management. It is too weak to say that the Riksbank's position as a central bank shall be taken into consideration.

In view of this we propose the following.

> ***Chapter 8***
>
> ***Section 2*** *The management of the Riksbank's assets shall be carried out taking into account the Riksbank's position as a central bank.*
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> *The assets shall, taking into account the various purposes of holding assets, be managed with low risk.*

Annex 1. Commission directive (dir. 2006:50)

Cabinet decision 27 April 2006

Summary of the terms of reference

A special Investigator shall investigate issues related to the Riksbank's balance sheet structure, capital structure and its profit allocation. The Special Investigator shall submit proposals for the statutory regulation of the principles for allocating the Riksbank's financial result. These proposals shall be founded on an analysis of:

- the amount of own capital needed by the Riksbank to fulfil its tasks
- the profit allocation and balance sheet systems applied by a selection of other central banks both in and outside the EU
- The future balance sheet structure, capital structure and profit allocation of the Riksbank
- the effects on both the Riksbank and the Treasury of different profit allocation systems.

The Investigator shall report at the latest on 30 April 2007.

Background

The Riksbank's independent position

The Riksbank is an authority answering to Parliament and independently responsible for monetary policy and other tasks related to participation in the European System of Central Banks (ESCB), such as carrying out foreign exchange transactions, maintaining and administering a foreign exchange reserve and encouraging a secure and effective payment system. The objective of the Riksbank's activities is to maintain price stability.

The formal and actual autonomy of the Riksbank was strengthened by the amendments made to the Sveriges Riksbank Act (1988:1385) in 1989 and 1999. The latter amendments were made as a result of Sweden undertaking to increase the Riksbank's independence with accession to the European Union (EU) and the Riksbank's participation in the ESCB. The provisions regarding the independence of central banks in the ESCB (which covers the national central banks of all EU countries, regardless of whether the country has accepted the Euro as its currency or not) can be found in article 108 in the EC Treaty and article 7 in the Statute of the European System of Central Banks and of the European Central Bank. In brief the amendments were the following (prop.1997/98:40 p. 48 f):

- A statutory objective for monetary policy was introduced; maintaining price stability (functional independence).
- A prohibition on giving the Riksbank instructions on monetary policy issues, and also, according to the preparatory work on the act, other ESCB related issues, was introduced (institutional independence).
- Monetary policy decision-makers were given long mandates. They are covered by strict rules of disqualification and can only be dismissed for reasons set out in the ESCB statute (personal independence).

Another aspect of independence is financial independence, i.e. that the Riksbank shall be able to fulfil their obligations without being dependent on appropriations from Parliament. In the above legislation the government and Parliament considered that the Riksbank already had a high degree of financial independence, which is why no rules were introduced with regard to this (prop. 1997/98:40 p. 49).

The Riksbank's current accounting policies

The Riksbank's revenues are principally interest income and the net income from financial transactions. In 2005 interest income amounted to SEK 5.4 billion (and interest costs to SEK 0.3 billion). The net income from financial transactions that year was negative, SEK -1.1 billion. Because the financial result is to a great extent determined by changes in foreign currency exchange rates, it varies considerably from year to year. The net income from financial transactions includes a price effect (i.e. realised profits and losses from securities transactions and unrealised securities losses), a foreign exchange effect (realised profits and losses from foreign exchange transactions and unrealised exchange rate losses) and a gold valuation effect (realised profits and losses from transactions with gold and unrealised gold price losses). Other revenues consist of fees, commissions and dividends received and are insignificant in the circumstances. Hence unrealised profit is not included in the Riksbank's financial result in its annual report. Instead they are entered in a revaluation account in the balance sheet. The Riksbank's administrative costs and the cost of producing banknotes and coin are deducted from the net interest income. In 2005 the Riksbank made a profit of SEK 3.3 billion (compared with a loss of SEK 2.8 billion in 2004).

Current profit allocation principles

Pursuant to Chapter 10, section 3, second paragraph of the Sveriges Riksbank Act, each year, before 15 February, the Executive Board shall submit an Annual Report to Parliament, the Swedish National Audit Office and the General Council. The General Council shall make proposals to the Riksdag and the Swedish National Audit Office on the allocation of the profit of the Riksbank. Parliament shall then, pursuant to Chapter 10, section 4 of the Sveriges Riksbank Act settle on a profit allocation.

The principles of the allocation of the Riksbank's profit are at present not regulated by law. However, the guidelines for profit allocation on objective grounds were set by the General Council of the Riksbank in 1988 and were approved by Parliament in the following year (Report 1988/89:FiU27). According to these guidelines the Riksbank marked all its assets and liabilities, apart from gold, to market, which meant that the financial result in any particular year could be greatly affected by interest and exchange rate fluctuations. In order to achieve stability in its transfers to the Treasury the past five years' average financial result before allocation to general reserves were used to calculate profit allocation. An increase or devaluation in the value of the Swedish krona would not be allowed to affect the financial result as these effects were be equalised using the contingency fund.

These guidelines were applied in this form up to and including the financial statement for 1992. After the Swedish krona was floated the General Council of the Riksbank adjusted the guidelines so that transfers to the Treasury would be made up of the five past years' average financial result before allocation to general reserves excluding the effects of exchange rate fluctuations. In the 1998 financial statement the guidelines were adjusted in one further regard. The Riksbank's holdings in gold were marked to market and their unrealised appreciation was treated in practice as a foreign exchange rate effect.

Consequently, after the latest revision the basis for calculating transfers to the Treasury was the past five years' average financial result, including realised and unrealised price effects on securities holdings, before allocation to general reserves, after the deduction of exchange rate effects and gold valuation effects (Report 2001/02:FiU23).

In the allocation of the financial result an amount equivalent to 80 percent of the above basis for calculation is transferred to the Treasury. This means that the present accounting policies include unrealised profits in the basis for calculation and thus the financial result as well. An amount equivalent to 10 percent of the same basis for calculation shall then be set aside to the contingency fund, provided the remainder of the financial result is at least this amount. If this is not the case the provision to the contingency fund is limited to an amount equivalent to the remainder of the financial result after a deduction for the transfer to the Treasury. That remaining of the financial result after these two allocations to general reserves shall be set aside to the balancing account.

Application of profit allocation guidelines

The profit allocation guidelines approved by Parliament were applied consistently from 1989 to the financial year 1999. However, for the financial year 2000 the General Council of the Riksbank proposed that an amount of SEK 20 billion be transferred to the Treasury over and above the regular transfer for that year. The proposed extra transfer was based on the General Council's assessment of how large the Riksbank's own capital should be. In evaluating the General Council's proposal for profit allocation, the Parliamentary Committee on Finance agreed that it would be possible to make the extra transfer to the Treasury. The Committee emphasized that it was a logical for the Riksbank to have an amount of own capital large enough for the bank to be able to fulfil its monetary policy and foreign exchange policy commitments credibly and independently. And also that the own capital should guarantee stable transfers and allow the Riksbank to cope with sizeable fluctuations in its financial results. The Committee made the judgement that the Riksbank had a good capital strength balance both from an international perspective and in the light of its monetary policy and foreign exchange policy commitments. In addition, credit risk in the Riksbank's operational activities was considered lower than it had been ten years previously. In view of this the Committee felt that there was scope for a further extraordinary transfer to central government the next year. The Committee therefore proposed that the General Council of the Riksbank should submit a proposal for the final level of this extra transfer (Report 2000/01:FiU23 p. 28). However, this decision was not unanimous.

In the financial year 2001 the General Council later judged that there was scope for SEK 20 billion to be utilised for an extra transfer to the Treasury over and above the transfer made in accordance with the profit allocation criteria. The Parliamentary Committee on Finance shared the General Council's opinion and maintained that after this transfer the Riksbank would have achieved a well balanced long-term consolidation level. Taking this into account there would be no need to consider further extraordinary transfers in the future. The Committee also felt that there was no current need to call into question the applicable profit allocation principles, and that they should continue the be applied (Report 2001/02:FiU23 p. 29-30). For the financial year 2002/03 the General Council of the Riksbank therefore proposed that the annual profit allocation should follow the current principles (Prop. 2002/03:RB2), which was supported by the Parliamentary Committee on Finance (Report 2002/03:FiU23 p. 25).

Sources of the Riksbank's profit

The Riksbank's assets provide a return. The Sveriges Riksbank Act does not contain provisions regarding how the bank's assets are managed, but the Riksbank manages its assets so that its return is as good as possible. The Riksbank's monetary policy, foreign exchange policy and other tasks mean that its potential for investing assets to maximise profit is limited.

The return from assets comes mainly from securities administration. The Riksbank holds assets in Swedish krona in order to carry out the monetary policy operations necessary to control the interest rate level. The Riksbank also holds assets in foreign currency in order to maintain its ability to take foreign exchange policy measures. Much of the Riksbank's profit originates from the management of the assets held in foreign currency because these are many times greater than assets in Swedish krona.

The amount of the Riksbank's revenue generating assets is determined by how large the bank's own capital and other liabilities are. Essentially the Riksbank's other liabilities consist of currency in circulation. At the end of 2005 the Riksbank's own capital was SEK 56.8 billion and liabilities SEK 151.8 billion (of which banknotes and coin amounted to SEK 111.1 billion) and its unrealised profits booked in the revaluation account were SEK 23.7 billion.

National central banks often have substantial seigniorage income, i.e. revenue from the issuing of banknotes and coin. Seigniorage arises because those holding banknotes and coin - on the debit side of the Riksbank's balance sheet - do not receive interest, while the assets held by the Riksbank do not give a return. Theoretically seigniorage could be called the return from the assets corresponding to currency in circulation.

However, a central bank's debit side consists of more items than just banknotes and coin, primarily own capital. Because the Riksbank has not in advance linked certain assets to the item banknotes and coin, it is not possible to directly calculate how large seigniorage is. The truest method to calculating seigniorage is by multiplying the proportion of the balance sheet total made up by the stock of banknotes and coin by the realised return on all assets. In this case the seigniorage for 2005 would be SEK 2.8 billion.

As long as banknotes and coin are used as a means of payment the Riksbank will have substantial revenue, this is because the assets corresponding to the liability item for banknotes and coin will provide a return. Should the demand for banknotes and coin decrease in the future because the use of other forms of payment, e.g. various types of debit cards or other payment services, increases – which cannot be ruled out – this will mean that the Riksbank revenue will be less.

Proposals of the General Council of the Riksbank for the structure of the Riksbank's own capital

In the spring of 2002 the General Council of the Riksbank submitted a report on the Riksbank's own capital. This was submitted in conjunction with the proposal regarding the allocation of the 2001 financial result (2001/02:RB2). In the memorandum the Executive Board proposed that in future the own capital in the balance sheet should be divided into several funds. One fund guaranteeing the Riksbank sufficient revenue to meet the bank's normally operational costs, excluding the cost of printing banknotes and coin. One fund for guaranteeing the Riksbank's ability to cover losses in its operation, primarily related to providing emergency liquidity assistance in the event of instability in the financial system. And also reservations to meet ongoing unrealised value changes, based on their marking to market, of the Riksbank's assets. The profit remaining after provisions for unrealised profits, and after guaranteeing the realisable value of the Riksbank's provisions, would then, in the view of the Executive Board, be distributable. In addition, it was proposed that the provisions related to reservations should be introduced into the Sveriges Riksbank Act. It was also proposed that a provision, preventing the Riksbank's profit being allocated in such a way that risked overriding the bank's ability to independently carry out its statutory duties, be inserted into the same Act.

The need for a Commission of Inquiry

Convergence reports

How well Sweden meets the requirements of the EC treaty and ESCB Statute on the independence of central banks is followed up every other year in the convergence reports. These are compiled by the Commission and the European Central Bank (ECB). This requirement is binding for all member states, regardless of whether the country is a member of the currency union or not.

In the convergence report for 1998 the European Monetary Institute (EMI) pointed out that Sweden should consider introducing a “safeguard clause” to govern profit distribution from the Riksbank. The purpose of such a provision would be to protect the Riksbank’s financial independence so as not to hinder its ESCB related work. However the EMI expected this shortcoming to be resolved with a preliminary draft ruling within the framework of the ongoing revision of the Sveriges Riksbank Act.

During the overhaul of the Sveriges Riksbank Act in 1997 the government felt that profit allocation had, after the 1989 parliamentary resolution, had an objective basis and anticipated that this would continue to be the case. Hence the government considered that there was no reason to introduce a provision guaranteeing that Parliament, when determining the allocation of the Riksbank’s profit, would take account of the Riksbank’s ability to fulfil its ESCB related tasks, as have been proposed by the EMI, (Prop. 1997/98:40 p. 64).

In the convergence report for 2000 neither the Commission not the ECB mentioned financial independence as an issue. However, in the convergence reports for 2002 and 2004 financial independence was again taken up by both the Commission and the ECB.

In the 2002 convergence report the Commission wrote that developments in 2001 and 2002 in Sweden had made evident the consequences of the absence of detailed legislation on profit allocation and extraordinary payments to the Treasury. The absence of legislation ensuring that the Riksbank retained the financial means necessary for the implementation of all ESCB-related tasks was particularly highlighted. The ECB and Commission considered that this absence of legislation was incompatible with the principle of financial independence.

The ECB likewise pointed out that in the light of recent developments, i.e. the extraordinary payments from the Riksbank to central government of a total of SEK 40 billion, it was necessary to legislate on the Riksbank's profit allocation. According to the ECB such legislation should contain clear rules about the decision making framework in order to ensure the Riksbank’s financial independence.

Both the Commission and ECB tool up the issue of the Riksbank’s financial independence again in the 2004 convergence report.

The Commission noted that Swedish legislation was still in conflict with the EC treaty with regards to the Riksbank’s financial independence etc. The ECB maintained that “with regard to the financial independence of the Riksbank, certain legal rules concerning the Riksbank’s financial accounts and the regime for profit allocation will require to be further adapted” and that the “present arrangements on profit distribution are incompatible with the Treaty and the ESCB Statute”. The ECB stated that “the statutory framework should contain clear provisions as to the limitations applicable to such decisions in order to safeguard Sveriges Riksbank’s financial independence.”

Proposal of the General Council of the Riksbank

The General Council of the Riksbank submitted in its proposal to Parliament 2004/05:RB2 that the amended accounting policies used by the Riksbank would make possible the transition to a model for profit allocation in which the Riksbank’s own capital would be linked with the bank’s various tasks in a much more transparent way than was the case at present.

Terms of reference

Entry into the EU has meant that Sweden has undertaken to meet the requirements set out in the EC Treaty and ESCB Statute. A special Investigator shall evaluate whether changes to legislation are necessary to ensure that the legislation covering the Riksbank's financial independence agree with these requirements. If a change to the legislation is deemed necessary the Investigator shall study and analyse the Riksbank's balance sheet structure, capital structure and its profit allocation in more detail, drawing up proposals for the statutory regulation of the principles related to the allocation of the Riksbank's profit.

How much own capital is needed by the Riksbank to fulfil its task?

The requirement for financial independence means that the Riksbank should have assets that generate a return sufficient to fund its operational activities to a reasonable level. Because these assets may decrease in the future due to a reduced use of banknotes and coin, the Riksbank's own capital must be sufficient to guarantee the necessary return.

The Riksbank's task – to encourage a reliable and effective payment system – also includes its role as lender of last resort. I this role the Riksbank must be able to grant solvent credit institutions, which are in an acute liquidity crisis, credit on special terms, i.e. emergency liquidity assistance, or provide security so that the institution can borrow money on the market. Because, in the event of a liquidity crisis, it is difficult to decide if the institution will eventually be able to repay this loan, the risk of losses in the provision of emergency liquidity assistance is great.

The assets that the Riksbank manages normally generate a positive return. However, asset management is associated with the risk of losses in some years. Because the greater part of the debit side in the Riksbank's balance sheet is either made up of currency in circulation or own capital, and most of its assets are in the gold reserve and foreign exchange reserve, in principle the entire exposure to risk in the Riksbank's asset management is unmatched. This means that losses in ongoing management, when asset prices change, are not matched by a corresponding change in liabilities, which means that such losses must be balanced against the Riksbank's own capital.

The Investigator must analyse which balance sheet structure would be best suited to the Riksbank's operation and how large an own capital the Riksbank needs to fulfil its tasks and maintain financial independence from its principal, and also how the own capital is to be adapted to changed conditions in the Swedish economy over time.

The profit allocation and balance sheet systems applied by other central banks within and outside the EU

The Investigator must analyse and survey the profit allocation and balance sheet systems applied by a selection of other central banks within and outside the EU. The aim is to collect the experience and ideas of other countries.

The future capital structure and profit allocation of the Riksbank

In order to ensure that the Riksbank can maintain its financial independence from Parliament, it must have resources at its disposal sufficient for it to be able to carry out its tasks in a satisfactory way. The Riksbank must be able to autonomously carry on is operational activities and fulfil its obligations without needing to request a capital infusion from Parliament. On the other hand, there is no reason for the Riksbank to be overcapitalised.

The Investigator must draw up a regulatory framework which means that the Riksbank remains financially independent from Parliament and that it has sufficient own capital to fulfil its obligations and functions. The legislative proposal must contain principles for the allocation of the Riksbank's financial result. The rules shall prevent an unjustified build up of capital in the Riksbank. The Investigator shall set an appropriate level for own capital and propose a profit allocation rule which ensures that this level is maintained and that its realisable value is safeguarded.

The profit allocation rule shall be straightforward, and in as far as possible, shall minimise the scope for the arbitrary handling of future surpluses in the Riksbank's operation.

The Investigator may need to consider whether the proposals related to the balance sheet structure and capital structure require changes to the rules governing the Riksbank's asset management.

The effects on the Riksbank and the Treasury of different profit allocation systems

The Investigator must calculate the aggregated impact of different possible profit allocation systems.

The current system must be elucidated, regarding the rolling five year calculations of the basis for profit allocation etc.

The Investigator must explain the consequences for central government revenue and the effect on public sector savings.

Any transitional issues between the present and potential profit allocation systems must be explained. If transitional issues are identified, proposals for resolving them must be presented.

Investigation work

The Investigator must consult with the Riksbank.

If the proposals have economic consequences, these must be reported.

The Investigator shall report at the latest on 30 April 2007.