

# Monetary Policy in Finland

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# Foreword

The money market in Finland has operated as a free market since the lifting of regulations on interest rates and capital flows during the latter part of the 1980s. This fundamental change brought significant changes in the way the Bank of Finland can and does conduct monetary policy. After the markka was floated in 1992, the principle instruments of monetary policy have remained in tact, but the ultimate objective of monetary policy has been defined more precisely as a specific inflation target.

In this book we have attempted to cover in a comprehensive manner the way the Bank of Finland operates in general as well as the objectives and conduct of monetary policy. In addition, we discuss the Bank of Finland's role in the money market and provide an introduction to the key concepts regarding the money supply. We also examine the changes that have occurred in the environment in which the central bank operates and ponder the future challenges that will result from those changes.

The book includes an explanation of the current institutional framework for monetary policy and of the general principles governing open market operations. On the other hand, the book does not discuss the objectives, instruments or effects of monetary policy from a historical perspective.

Helsinki, November 1994

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# 1 The Bank of Finland's functions

The Bank of Finland was founded in 1811. In 1919, following Finnish Independence, its standing as the country's central bank was confirmed; according to the Constitution, the Bank operates "under the guarantee and care of Parliament". This means that it operates independently of the Government both legally and financially. The Bank of Finland's operations are based on a special law. Like most other central banks, the Bank is responsible for certain central banking functions: it acts as monetary authority, foreign exchange authority, bankers' bank, central government bank, economic policy decision-maker and statistical authority.

Under the Currency Act, the Bank of Finland has the sole power to issue banknotes. The notes are printed by a Bank-owned company called Setec Oy. The Bank of Finland also issues the coins struck by the State-owned Mint of Finland.

In its capacity as foreign exchange authority, the Bank of Finland handles the investment of the country's foreign exchange reserves and quotes daily on the exchange rate for the markka against the major foreign currencies.

Exchange control has been dismantled in Finland, and the Bank of Finland cannot influence foreign capital movements by means of regulations or guidelines. However, the Bank is empowered to regulate foreign capital movements as necessary in times of crisis. The foreign exchange regulations still in place are merely guidelines for providing information for balance of payments purposes and for monitoring the foreign risks of financial institutions.

According to the Act on the Bank of Finland, "The object of the Bank of Finland is to maintain a stable and secure monetary system and to assist and facilitate the circulation of money in Finland." Because of the growing competition and risks on financial markets today, there is a more acute need to monitor the different risks attached to banking. Financial markets and participants are overseen by the Financial Supervision Authority, which has operated since 1993 in connection with the Bank of Finland but has its own decision-making organization.

Acting in its bankers' bank role, the Bank of Finland helps to ensure the banks' liquidity and provides various banking and payment system services. This being the case, it provides other banks with temporary financing when needed.

In line with established practice, the Bank of Finland provides central bank credit to the government only under exceptional

circumstances and for short periods, though current law does not formally prohibit it. And, contrary to the practice in many other countries, the central bank does not handle the government's monetary transactions, which are the province of the State Treasury and Postipankki Ltd.

The Bank of Finland's most important function is to plan and implement monetary policy. This requires extensive research and analysis, as well as statistics on the financial markets, and the Bank is largely responsible for all of these.

This publication takes a close look at recent changes in financial markets and at the goals, instruments, potential and decision-making mechanisms of monetary policy. It also looks at the challenges that lie ahead.

The book is divided into five chapters. Chapter 1 gives a general introduction. Chapter 2 explains how the Bank of Finland as a participant in the financial markets is linked through its balance sheet to other banks, the public and foreign countries, and what the key concepts are in connection with the money supply. Chapter 3 examines the changes in financial markets that have had an impact on the Bank's operating environment and outlines the main stages of currency and interest rate deregulation as well as the changes that have taken place in the central bank financing system.

Chapter 4, the most important chapter, first looks at the objectives and implementation of monetary policy within the context of both the fixed and floating exchange rate regimes, and then examines the basic tools of monetary policy: the exchange rate system, the liquidity system and banks' central bank financing, the minimum reserve system and the base rate. Next, we discuss the Bank of Finland's operations in both the domestic money market and the foreign exchange market, as well as its monetary policy-making and information policy.

Chapter 5 considers the effects of European integration on the Bank of Finland.

The appendix provides information on financial relations between the Bank of Finland and other banks.



## 2 The Bank of Finland's role in financial markets

In addition to its other tasks, the Bank of Finland is a participant in the financial markets. Thus, its central bank functions are reflected in its balance sheet, as are changes in the financial markets. The following takes a look at the Bank's balance sheet and some key concepts connected with the supply of money.

### 2.1 The Bank's balance sheet

The Bank of Finland's ties with foreign countries and with the different domestic sectors are reflected in its assets and liabilities. The balance sheet items in Table 1 have been grouped to show the Bank's assets and liabilities vis-à-vis foreign entities, financial institutions, corporations and the public sector. There are also separate main items for notes and coin in circulation, capital accounts, other assets and other liabilities. Because financial relations between the Bank of Finland and other banks play a crucial role in open market and intervention policy, the Bank of Finland's assets and liabilities vis-à-vis financial institutions are given in more detail than the other items. The most important off-balance-sheet item is the Bank's forward currency position, which is of prime importance in connection with its foreign exchange interventions.

The Bank of Finland's foreign exchange reserves comprise its gold and foreign currency claims. When its forward currency claims are added and its forward currency liabilities deducted, we get the Bank's 'broad' foreign exchange reserves. The Bank balance sheet also shows other foreign claims and liabilities. The former comprise Finland's markka subscription to the International Monetary Fund (IMF) and the latter a markka account of the same magnitude with the Fund and the Bank's special drawing rights (SDRs).

In terms of monetary policy the most important balance sheet items, apart from foreign exchange reserves, are assets and liabilities vis-à-vis financial institutions and certificates of deposit (CDs) issued by the Bank of Finland. Because the Bank of Finland has sold its own CDs only to banks, this item, too, is often included in the financial relations between the banks and the central bank. Assets and liabilities vis-à-vis corporations and the public sector are no longer particularly important in the context of monetary policy.

Table 1.

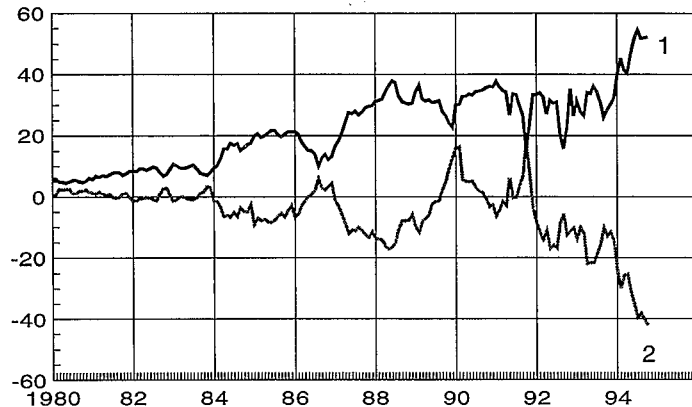
**Bank of Finland's balance sheet,  
31 August 1994, million FIM**

<b>Assets</b>	
Gold and foreign currency claims	53 058
Other foreign claims	5 113
Claims on financial institutions	5 677
Liquidity credits	—
Certificates of deposit	4 170
Securities with repurchase commitments	387
Term credits	—
Other	1 119
Claims on the public sector	1 817
Claims on corporations	3 198
Other assets	4 890
Capitalized expenditures	1 400
<b>Total</b>	<b>75 153</b>
<b>Liabilities</b>	
Foreign currency liabilities	196
Other foreign liabilities	6 167
Notes and coin in circulation	13 922
Certificates of deposit	35 040
Liabilities to financial institutions	8 854
Call money deposits	2 252
Term deposits	—
Minimum reserve deposits	6 602
Liabilities to the public sector	70
Liabilities to corporations	1 720
Other liabilities	96
Valuation account and reserves	3 324
Capital accounts	5 764
<b>Total</b>	<b>75 153</b>

On the balance sheet, the foreign exchange reserves and the banks' central bank position, ie their net debt to the Bank of Finland (including Bank of Finland CDs), usually change by equal amounts but in opposite directions (Chart 1). When, for instance, the Bank buys foreign currencies, its foreign exchange reserves increase. When the authorized banks sell foreign currencies for markkaa, the Bank's net claims on them decrease; in other words, their central bank position eases. If the Bank of Finland were to conduct its money market operations solely by means of direct buying and selling of government debt, the resulting changes in foreign exchange reserves would be reflected in the Bank's net claims on the public sector.

Chart 1.

**Bank of Finland's net foreign claims and claims on financial institutions, billion FIM**



- 1 Net foreign claims
- 2 Net claims on financial institutions

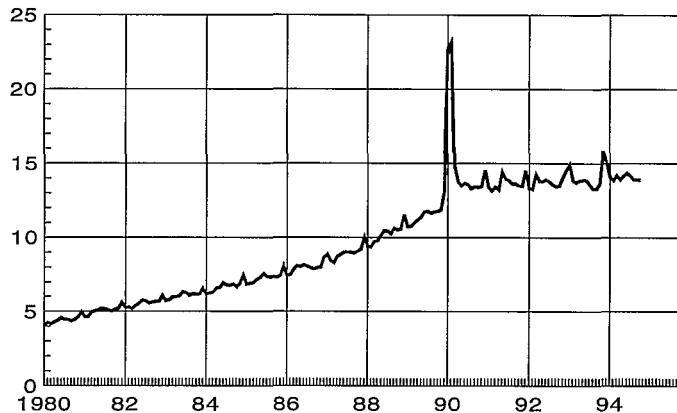
The financial relations between Finnish banks and the central bank are reflected in several different asset and liability items. The Bank of Finland's claims on financial institutions comprise liquidity credits, CDs purchased from the banks, securities purchased under repurchase agreements (repos), term credits, bonds and other claims. The Bank of Finland's liabilities to financial institutions comprise call money deposits, term deposits and minimum reserve deposits.

The amount of autonomous central bank financing each bank obtains depends on its liquidity credits and call money deposits, the difference between the two being the bank's liquidity position at the Bank of Finland. An individual bank entitled to central bank financing can influence its liquidity position, but the banks' overall liquidity position is a 'residual' item on the Bank of Finland's balance sheet, which reflects fluctuations in all the other items. On the other hand, the Bank of Finland can try to minimize fluctuations in the banks' combined liquidity position through its money market operations.

Notes and coin in circulation is a major liability item on the Bank's balance sheet, though it is not of major importance for monetary policy. The amount of currency in circulation tends to be very stable (Chart 2). Short-term fluctuations are caused mainly by seasonal factors; around the end of the year, for instance, Christmas shopping and tax refunds tend to expand the amount of currency held by the public. In summer, too, the amount of notes and coin in circulation increases temporarily. Compared with many other countries,

however, Finns tend to hold a small amount of currency, relative to GDP. This is because of Finland's highly developed payment system, which is based on inter-account transfers. The growing popularity of payment cards etc. will further reduce the importance of currency in the economy as a whole. Because currency in circulation is a form of interest-free funding, it is a key factor in the interest margin and is thus an important factor in the Bank of Finland's financing of operating costs.

Chart 2. Notes and coin in circulation, billion FIM



## 2.2 Money supply and demand, and monetary aggregates

In the late 1970s and early 1980s, many countries began to conduct monetary policy based on the restraint of growth in the money stock. In Finland, the stock of money in the economy has never played a major role in planning monetary policy, though for a long time lending was regulated through the control of interest rates. Monetary policy here has focused on interest rates, exchange rates and the balance of payments. In the 1980s, with a fixed exchange rate and the freeing of capital movements, trying to control the stock of money would not have made much sense, as the central bank could only affect the sources of central bank money and its division between Finnish and foreign components.

Now that the markka is floating, however, setting a target for the money stock is a possible intermediate objective for the central bank. In February 1993, when the Bank of Finland chose price stability as the ultimate objective of monetary policy, the money stock was cited as one of the indicators that would be used to gauge monetary policy. The money stock and the volume of lending are both important monetary policy indicators, whatever the exchange rate system, as they quickly reflect any changes taking place in the financial markets or real economy.

There is no single definition of the total amount of money (monetary aggregate) circulating in the economy. Money does not mean simply legal tender, ie notes and coin. These represent only a small fraction of the measurable stock of money, most of which is created by the banking system. Besides currency, liquid deposits, such as cheque and transaction accounts, can be considered money because the banks promise to convert them into notes and coin. Other short-term and easily converted bank deposits can also be counted as money.

The Bank of Finland uses three monetary aggregates: M1, M2 and M3. The narrow aggregate (M1) includes currency held by the public and all deposits that can be immediately used as means of payment. The broad money aggregate (M2) comprises M1 plus term deposits of the public. The broadest aggregate (M3) comprises M2 plus bank CDs held by the public. The broader the concept, the more important the money becomes as an asset and the more difficult it is to distinguish it from other assets.

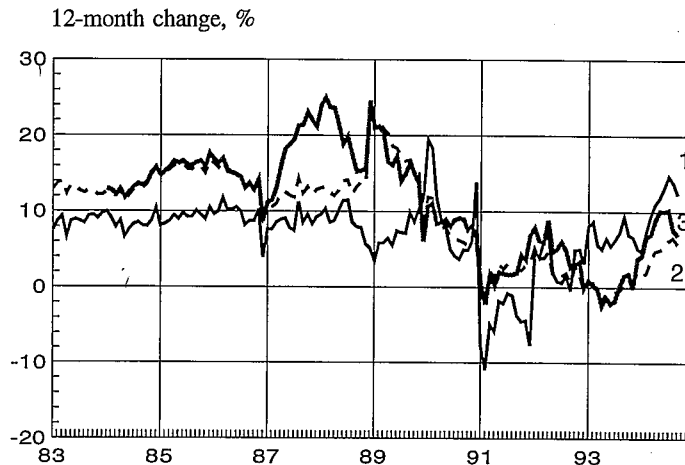
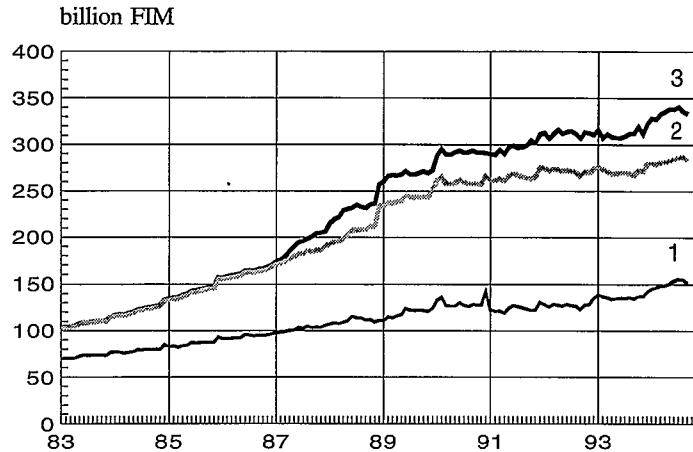
Chart 3 shows the long-term trend in monetary aggregates. Table 2 gives the monetary aggregates according to the Finnish definitions.

Table 2. **Finland's monetary aggregates,  
31 August 1994, billion FIM**

Currency in circulation	13.9
- currency held by banks	3.7
<hr/>	
= Currency held by the public	10.2
+ cheque and giro deposits of the public	46.3
+ other transaction deposits of the public	98.3
<hr/>	
= Narrow money (M1)	154.8
+ time deposits of the public	108.7
+ other markka deposits	23.3
<hr/>	
= Broad money (M2)	286.8
+ bank CDs held by the public	49.2
<hr/>	
= Broadest monetary aggregate (M3)	336.0

Chart 3.

### Monetary aggregates



- 1 M1
- 2 M2
- 3 M3

Bank deposits are what is called 'representative' money. This is a product of the banking system, because banks are able to increase the money supply, ie the amount of money in the economy. The process involved is described as 'money creation': the banks increase the money supply by accepting deposits and granting loans against them. This is called 'credit expansion'.

The money supply process nonetheless starts ultimately with the central bank. This process can be examined by analysing the money

multiplier. By influencing bank reserves, the central bank can (at least in theory) regulate the money supply and thereby the credit expansion process.

If the banks were to retain all the deposits made with them as reserves, they would be unable to increase the money supply in the economy. Just how much the banks can effectively increase the money stock depends on how much currency the public wants to hold (currency ratio), how much money the banks want to keep in reserve (reserve ratio) and changes in the monetary base (supply of central bank money).

In Finland bank reserves include currency held by the banks (CB) and their call money deposits (free reserves) at the Bank of Finland (FR). Free reserves is a net concept that refers to the entire freely disposable monetary base held by the banks (excess reserves), minus liquidity credits from the Bank of Finland (borrowed reserves). The monetary base held by banks, that is, their reserves (R), also includes banks' minimum reserve deposits at the Bank of Finland, or required reserves (RR). Total reserves (R) can then be expressed as follows:

$$R = CB + FR + RR.$$

The amount of 'base money' ie monetary base (B) is the sum of currency held by the public (CP) and banks' total reserves (R), as follows:

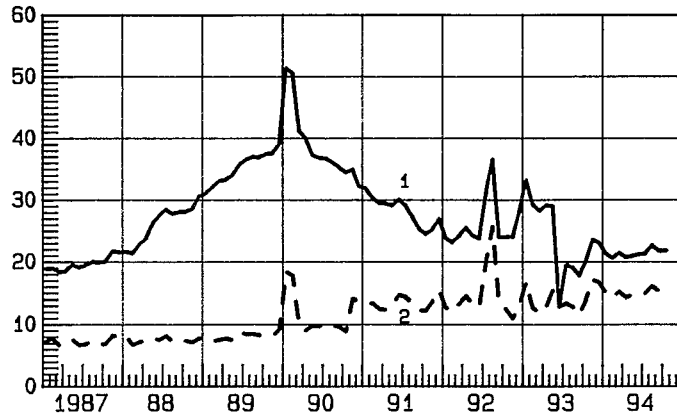
$$B = CP + R.$$

The Bank of Finland influences the sum of the banks' free reserves through its liquidity system and market operations. The amount of required reserves can be influenced by changing either the minimum reserve base or the reserve requirement.

The banks' minimum reserve deposits at the Bank of Finland do not as such affect their liquidity and are not counted as readily available liquidity. Therefore, it is not obvious that they should be included in bank reserves and in the monetary base. If the Bank of Finland tightens its monetary policy and raises the banks' minimum reserve requirement, the monetary base grows. To eliminate this problem, an adjusted monetary base is often used, employing an assumed constant reserve requirement. On the other hand, the minimum reserve deposits can also be released to add to the monetary base, reducing the amount deposited; they thus act like other elements in the monetary base in multiplier analysis.

Chart 4.

**Monetary base, billion FIM**



- 1 Monetary base
- 2 Alternative monetary base

Chart 5.

**Adjusted monetary base, billion FIM**

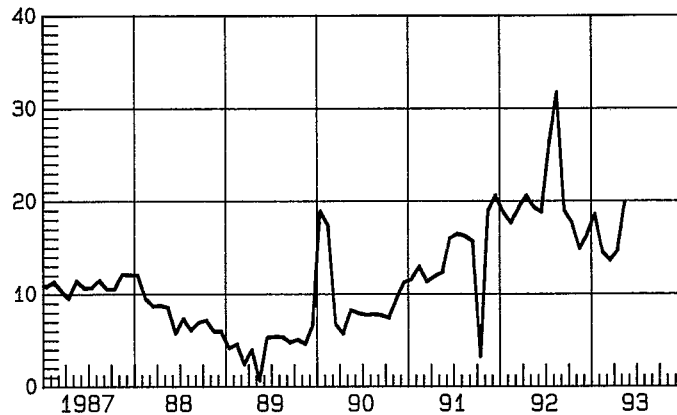
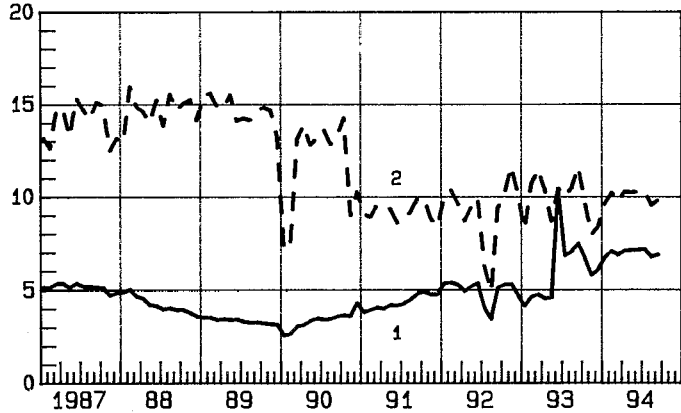


Chart 4 shows the monetary base and the alternative monetary base (monetary base minus cash reserves). In Chart 5, the monetary base is adjusted. Chart 6 shows the multipliers for narrow money. If the multiplier is about 5, this means that if all other factors remained unchanged a FIM 1 billion increase in the monetary base would increase the narrow money stock by FIM 5 billion. The multiplier using the alternative monetary base is about double this, though in recent years the difference has diminished considerably. The cash reserve requirement has the most powerful impact on the monetary base and the money multiplier. The multiplier has shown considerable variation; halving or doubling within short periods of time.



Chart 6.

### Money multipliers



- 1 M1/Monetary base
- 2 M1/Alternative monetary base

The temporary increase in the monetary base at the beginning of 1990 was a result of the bank strike. At the end of 1991, liquidity was tightened because of pressure on the exchange rate, reflected as a temporary decline in the monetary base. In 1992, by contrast, the monetary base expanded temporarily just before the markka was allowed to float.

## 3 Financial markets

### 3.1 Changes in financial markets

#### 3.1.1 Financial markets become internationalized and controls on capital movements are lifted

For about half a century, from the 1930s up to the mid-1980s, financial markets in Finland were highly regulated and underdeveloped. Extensive governmental controls were the rule. Monetary policy, too, was largely implemented by administrative means.

Pressure to allow the Finnish financial markets to become more market-oriented began to build up already in the 1970s. Interest rates took on increasing importance in equilibrating the markets, as the significance of credit controls diminished. Behind this process were the changes taking place in the international environment and in the domestic financial markets, which were reflected in the behaviour patterns of both foreign and domestic economic agents.

The changes that took place on Finnish financial markets largely echoed international trends. They not only furthered the development of the domestic financial markets, but also helped them open up to and integrate with international markets. Such integration had, after all, been a dominant feature of foreign trade for a long time.

Several factors have promoted the integration of international financial and capital markets over the last couple of decades. When international currency markets changed over from fixed to floating rates in the early 1970s, exchange and interest rate risks increased. The need to hedge against these risks led to innovations and new market instruments. These included interest rate and currency swaps, options and new corporate loan arrangements, all of which spread rapidly.

The further internationalization of markets was prompted by imbalances in countries' current accounts resulting from the oil crises, the international debt crisis, public sector deficits in several countries, the disparity between national inflation rates, further progress in integration between EC (later EU) countries, and the continuing expansion of world trade. Advances in information technology allowed for rapid data transfer between markets. Other influential factors were a general loosening of controls and new forms of taxation on international markets, the rapid internationalization of banks and companies and the dismantling of currency controls in the industrial countries.

Developments on international financial markets had both a direct and an indirect impact on Finland. Events abroad contributed to the pressure for change, but pressure also came to a large extent from the domestic market. Growing awareness of cost and return in both domestic and foreign financing did much to speed the process. As opportunities for market players to borrow from the source of their choice improved, so too did their awareness of the factors at work in the process. Rapid fluctuations in interest and exchange rates on international markets meant that much more attention had to be paid to managing financial risks in Finland also. Rising real interest rates beginning in the late 1970s had already made the market more aware of cost and return. The good liquidity situation of Finnish companies at the end of the 1970s also prompted the growth of unregulated short-term financial markets. As domestic markets became better suited to development and competition, Finnish companies and banks were further encouraged to go international.

In the mid-1980s, the Bank of Finland began to amend its regulations concerning exchange control. The steps it took in this period were often prompted by the fact that controls had lost their significance because of the way domestic financial markets were evolving and because of the development of new financial instruments. The Bank's key aims in changing the currency regulations were to ensure that Finnish banks and companies had the same opportunities for competing as foreign entities and to improve the efficiency of the financial markets.

Table 3. **Dismantling of exchange control in Finland**

1980	Bank of Finland withdraws from forward markets and banks authorized to deal in foreign exchange are allowed to freely cover all forward positions with a commercial background.
1985	The foreign exchange banks are allowed to use currency options to a limited extent.
1986	Industrial enterprises and shipping companies are allowed to take out long-term loans abroad. Controls on credit to finance foreign trade are eased.
1987	Long-term foreign borrowing by other corporations is deregulated.
1988	Long-term foreign borrowing by local authorities and companies with majority local authority ownership is deregulated. Direct foreign investment by corporations (incl. finance companies) is deregulated.
1989	Currency regulations are eased, except for households and short-term capital movements.
1990	Households are permitted to invest abroad.
1991	Short-term capital movements are deregulated. Households are allowed to borrow money abroad.

The most important changes are listed in Table 3. The process was gradual to start with, in order to give domestic financial institutions time to adjust to the more competitive conditions.

A new foreign exchange law came into force at the beginning of 1991; in 1993, its validity was extended up to the end of 1995. The main principle of the law is that all foreign exchange transactions are allowed, unless the Bank of Finland specifically subjects them to permission. The foreign exchange regulations nonetheless continue a) to require that the Bank of Finland be provided with data on currency transactions for statistical purposes and b) to allow currency controls to be introduced on whatever scale considered necessary to safeguard the country's external liquidity and stable development of the monetary system.

### 3.1.2 Emergence of market interest rates and interest rate deregulation

The transformation of domestic financial markets to a market-driven system is considered to have got under way in the mid-1970s, when the Bank of Finland set up a call money market and made the call money rate the reference rate for various short-term commitments. The banks were then able to balance out their liquidity on the call credit market, and this provided the impetus for the emergence of a deregulated short-term money market.

The changes that took place in the foreign exchange forward market in the 1980s played an important role in the development of these deregulated markets and in the formation of interest rates. Up to 1980, the Bank of Finland covered all forward contracts between foreign exchange banks and companies. In that year, however, the Bank withdrew from the forward market and granted the foreign exchange banks the right to use foreign credit to cover the exchange risks involved in forward contracts. This resulted in much greater activity on the forward market, which acted as a channel for short-term capital movements. At the same time, a computed, market-based 'Eurorate' for the Finnish markka emerged, reflecting capital movements and monetary policy expectations, ie expectations regarding the call money rate.

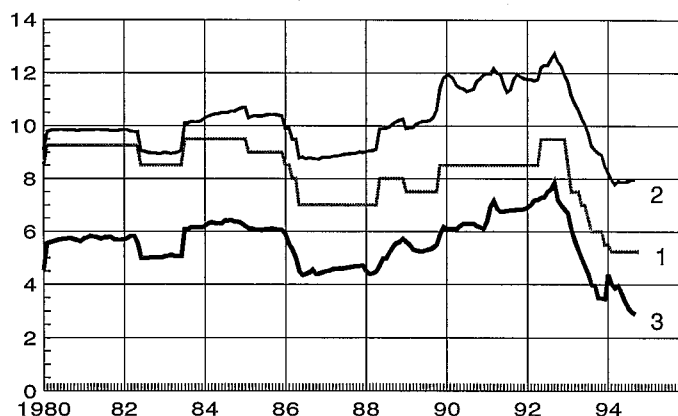
Alongside the call money rates and the Eurorate for the markka, a system of regulated interest rates still existed, but this too began to be dismantled in the early 1980s. Regulations applied equally to bank borrowing (deposits) and lending, the base rate being the most important reference rate for the rates still regulated. The regulation

took the form of fixing upper limits for the average rate charged by the banks on markka lending and for the rates charged on individual loans. Changes in these upper limits were largely tied to changes in the base rate. In the case of deposits, regulation mostly derived from the law on the tax relief of deposits and bonds (tax relief law) (Chart 7). Interest on deposits was tax-exempt under an agreement between the banks on the rates paid on different types of accounts; these rates were tied to the Bank of Finland base rate. Another important source of financing outside the banking sector — the 'lending back' of employers' pension contributions by the pension insurance companies — was also subject to interest rate controls.

The Bank of Finland played an active role in dismantling controls on domestic financial markets. The process started in May 1983, with the average rate on bank lending; the Bank of Finland then permitted the banks to pass on part of the cost of their market-based funding, ie market money, into their lending rates. The lifting of these controls continued in 1983 and 1984, and finally in August 1986 the Bank of Finland removed all regulation of the average lending rate.

Besides dismantling controls on the average lending rate, the Bank of Finland was also easing its controls on higher lending rates. Already in the early 1970s the maximum lending rate was raised relative to the base rate. Further increases came in 1982 and 1983. Eventually, upper limits on bank lending rates were removed altogether, at the beginning of 1986.

Chart 7. **Base rate and average commercial bank deposit and lending rates, %**



- 1 Base rate
- 2 Average lending rate
- 3 Average deposit rate

The Bank of Finland has also limited the way bank lending rates are tied to other rates. Up to 1987, most of the banks' markka-denominated loans, except for acceptance credit, were tied to the base rate. Most loans granted by insurance companies, the government and local authorities were in practice similarly tied. The banks' interest rate risks began to increase when the proportion of their total funding accounted for by short-term market funding began to grow. These risks were realized to some extent in autumn 1986, when speculation in foreign currencies caused short-term market rates to soar. This increased the need to adopt market reference rates in bank lending also.

At the end of 1986, as controls on lending rates were dismantled and the money market developed, the Bank of Finland allowed the banks to grant loans tied to a market reference rate. As yet, however, this was not permitted in the case of loans with a maturity of over 5 years or housing loans. However, in the early stage, banks made little use of market rates.

Use of reference rates increased dramatically in May 1987, when the Bank of Finland started quoting daily HELIBORs (Helsinki interbank offered rates). (There are six of these rates, with maturities of 1, 2, 3, 6, 9 and 12 months. They are calculated at 13.00 each business day, using the bids for CDs of the five biggest commercial banks.) At the same time, the Bank allowed the interest rate on loans with a maturity of over five years to be tied to a market reference rate.

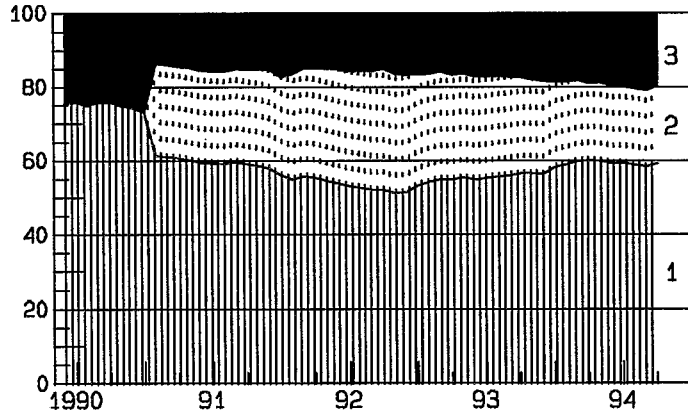
At the beginning of 1988, the Bank of Finland started to give monthly quotations on longer-term reference rates (3 and 5 years), for which the risk is based on bonds issued by the banks. Like the HELIBORs, they rely on the quotations of the five biggest commercial banks and can be used as reference rates, for example, on housing loans.

At the end of 1989, the Bank of Finland again supplemented its guidelines on reference rates. As of the beginning of 1990, each bank or banking group could adopt its own prime rate as a reference rate for all its lending and deposits. In the 1990s, therefore, the Bank of Finland's reference rates have lost most of their practical significance.

Use of market reference rates expanded greatly in the late 1980s, but even in early 1988, over 90 per cent of all bank markka-denominated lending was either at a fixed rate (acceptances) or tied to the base rate. It was 1992 before over half of all bank lending was tied to a market or prime rate (Chart 29).

Chart 8.

**Bank deposits by tax treatment, %**



- 1 Tax-exempt
- 2 Subject to withholding tax
- 3 Other

'Regulation' of interest rates paid on deposits continued even after lending rate controls had been dismantled, in connection with the tax relief law. The first move towards interbank competition over deposit rates came in the early 1980s, with the introduction of a capital income deduction. This increased public interest in putting savings into securities. The banks also started offering a growing range of taxable investment accounts, side by side with their tax-exempt deposit options. The amendment of the tax relief law as of the beginning of 1989 added fuel to interbank competition for deposits, as the interest rate on the highest rate tax-exempt deposit then fell two percentage points relative to the base rate. The real breakthrough in this competition only came in early 1991, however, when the interest withholding tax came into force. A substantial proportion (about a quarter) of all deposits were shifted during 1991 to accounts subject to the withholding tax. This process was encouraged by the low withholding tax rate (10 per cent) and the exceptionally large differential between market rates and the tax-exempt deposit rates (Chart 8).

The dismantling of interest rate controls meant that monetary policy was increasingly pursued by means of market rates. Administered rates like the base rate and guidelines and recommendations related to lending declined rapidly in importance during the 1980s.

### 3.1.3 Formation of the money market

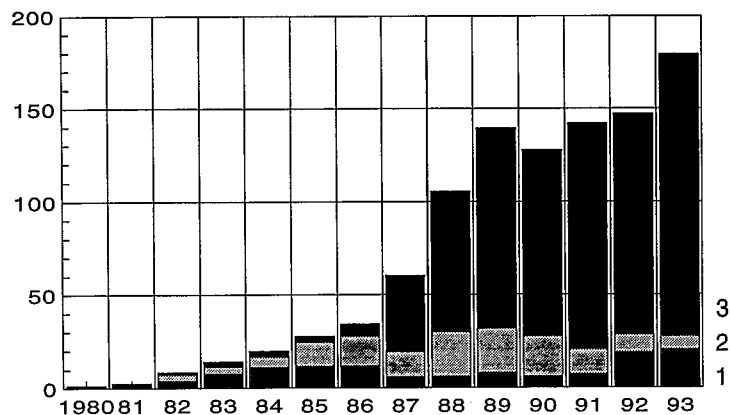
Up to the mid-1980s, the market for short-term financial instruments was very underdeveloped. Most short-term market money took the form of banks' off-balance-sheet fiduciary investments or on-balance-sheet funding in the form of promissory notes. As neither of these instruments was transferable, there was no secondary market for this money. The first transferable money market instruments — bank CDs — were issued in 1982, when the Ministry of Finance permitted the banks to start using them. The actual amount of these instruments remained minimal, however, until the end of 1986. This was partly because the Ministry regulated the maximum amount in circulation in the case of each individual bank. The government also issued short-term Treasury bills which were transferable, like CDs. But because central government finances were fairly well in balance, the amount of these debt instruments was rather small throughout the 1980s, so they did not provide a basis for expansion of the money market.

The market for short-term (under one year) financial instruments — ie the money market — started to expand very rapidly in early 1987. There were several factors at work here. First, liquidity conditions for companies and the banks improved because of the economic upswing and the deregulation of foreign capital imports. Second, because of the overhaul of the central bank financing system, the short-term interbank market was gradually becoming more highly organized. Third, the Bank of Finland exempted bank CDs from the cash reserve requirement as of the beginning of 1987. As the business world concentrated all its short-term investments in CDs and the Finnish interbank market started to use mainly CDs in money market transactions, this particular instrument rapidly became the key instrument on the money market. Also in 1987, the Bank of Finland started to control the liquidity of the banking system by buying and selling CDs on the interbank market (Chart 9).

In the late 1980s, negotiable instruments had already replaced nearly all the 'old' market money instruments. Other negotiable instruments apart from CDs included Treasury bills, commercial paper and local authority paper. The first commercial paper was issued in 1986. This comprised mainly issues of large companies and bank subsidiaries. Similarly, the first local authority paper was issued in 1987. Though local government indebtedness increased in the early years of the 1990s, the volume of local paper has remained small. In contrast, the amount of Treasury bills rose sharply in the early 1990s, and the Treasury bill is becoming a leading money market instrument, along with the CD. It is possible that Treasury bills will become the single most important money market instrument.



Chart 9.

**Money market instruments, billion FIM**

- 1 Special bank deposits (excl. CDs)
- 2 Fiduciary investments (incl. repo sales)
- 3 Marketable instruments (Bank of Finland and bank CDs, commercial paper, Treasury bills, local authority paper)

This rapid expansion of the money market was followed by the emergence of the 'derivatives' market. The forward rate agreement (FRA) market launched in 1988 grew particularly fast. On this market, it was possible to hedge against the interest risk attached to fluctuations in the 3-month HELIBOR. In 1991, a market for interest rate swaps got under way, which also permitted the swapping variable-rate contracts (tied to the 6-month HELIBOR) for fixed-rate contracts.

The development of the money markets was obstructed by the banks' serious financial problems of the early 1990s. At the end of the 1980s, interbank money market dealings were based on identical price quoting of each other's CDs. As the banks' financial and liquidity situations began to differ, however, unified pricing gave way. The banks and other companies involved in the money market began to expect a higher yield from CDs issued by the banks with the most serious financial and liquidity problems. This applied particularly to Skopbank and certain savings banks. Partly for this reason, the growth in the volume of CDs in circulation came to a halt in the early 1990s.

### 3.1.4 Evolution of the capital markets

The capital markets, ie markets for long-term securities, comprise the stock market and the bond market, and the derivatives markets based on these instruments. New securities are issued on the primary market, and in the secondary market investors sell the instruments to each other.

Like the money market, Finland's capital markets were relatively undeveloped up to the mid-1980s. Tax-exempt bonds issued by the government and the mortgage banks held centre stage. In 1980, bank deposits accounted for 80 per cent and securities for about 20 per cent of all financial instruments. The development of the market for long-term financing had been held back by the lack of legislation, the government's minimal need for credit, the bank-centred orientation of finance and distortions created by the tax system.

In the latter half of the 1980s, interest and foreign exchange controls began to be dismantled, and the money markets started to develop. Household wealth and real disposable income increased, along with liquid corporate assets. Competition between the banks heightened as share prices soared and the real estate market boomed, pointing financial markets in a new direction. Tax reforms were passed to ensure equitable taxation for different investment vehicles. Deductions for capital income were extended in the 1980s, and the taxation of sales profits was amended at the beginning of 1989. The competitive edge enjoyed by tax-exempt bank deposits as an investment vehicle diminished, and investors turned more and more to securities and taxable deposits. At the same time, direct financing from the public became more competitive as a mode of corporate finance, and the preparation of new legislation on the securities markets got under way. A unit trust (mutual fund) law came into force in September 1987, but the core legislation — ie laws on the securities market and on securities broking — did not come into force until August 1989. A law on the book-entry system was passed in August 1991.

The unit trust law made it possible to set up funds composed of securities investments. The purpose of the securities market law was to reduce investors' risk; the law focused particular attention on the obligation to publish information in connection with both new issues and the secondary market. The law on securities broking made broking subject to licence and set minimum requirements for broking firms, while the book-entry system and the Helsinki Stock Exchange computerized trading system improved the technical aspects of the market.

In the 1980s, bank funding changed significantly: the proportion accounted for by foreign debt capital increased, while that accounted for by deposits decreased. The popularity of bonds increased, particularly with the onset of the interest withholding tax in 1991: the stock of taxable public issues of banks and private mortgage institutions grew by more than 60 per cent.

Chart 10. **Turnover of shares and subscription rights, billion FIM**

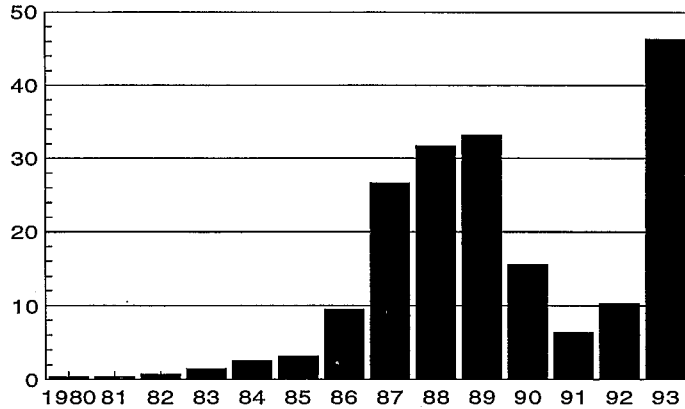
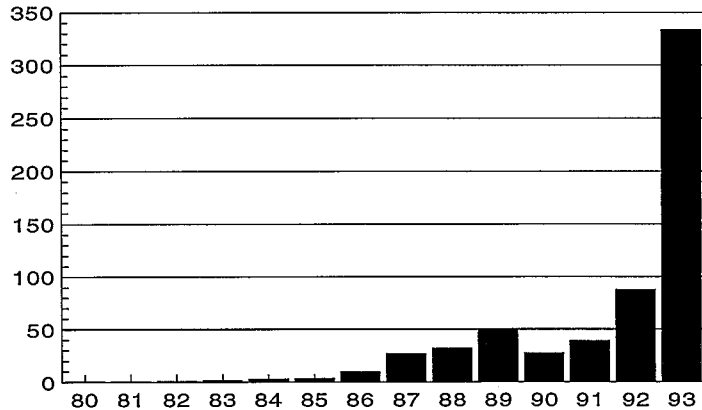


Chart 11. **Turnover of bonds, billion FIM**



The stock market has a long tradition in Finland, beginning with the foundation of the Helsinki Stock Exchange in 1912. In the 1980s, the importance of financing through the stock market increased from a few per cent to well over one fifth of the corporate net financing requirement. By 1988, the market capitalization of shares quoted on the Stock Exchange had grown to 30 per cent of GDP as compared to about 4 per cent in the early 1980s. The improvement in the operating environment and favourable economic developments brought a rapid increase in the value of shares. The favourable trend ended in the early 1990s, however, when the recession caused share prices to crash and plunged the banks into crisis.

The stock market has revived since the markka was allowed to float, in September 1992, and the role played by foreign investments on the Helsinki Stock Exchange grew substantially once the division of shares into non-restricted and restricted (with respect to foreign ownership) shares was abolished at the beginning of 1992. Unit trusts investing mainly in shares have grown in popularity. New issues shrank practically to zero in 1990–1992, but revived again in 1993, achieving the record levels of the late 1980s.

The market for share-based derivatives was the first market to develop for derivatives based on long-term instruments. Trading in standardized option, forward and futures contracts began in Finland in November 1987. The holder of an option contract is entitled, but not obliged, to conclude the deal at the price and on the date set down in the contract. Forward contracts are agreements on the conditions for future deals concerning financial instruments. Negotiable standardized forward contracts for which there are secondary markets are called futures. Earlier, liquidity conditions and price formation in the stock market would not have sustained an effective derivatives market. Active and short-term trading and the need to hedge against risk have also contributed to the growth of the derivatives market. A law on standardized option and forward contracts came into force in November 1989. Finnish markets characteristically focus on derivatives tied to share indices.

The private sector, which had run heavily into debt in the 1980s, has since managed to reduce its indebtedness. On the other hand, central government indebtedness has increased appreciably, and in the 1990s the rising need for government borrowing has shifted the emphasis in capital markets from shares to bonds. Between the early 1980s and 1991, the bond market grew from a scant 5 per cent of GDP to just under 25 per cent. The rapid progress made in the long-term government debt market was enhanced by allowing all markka-denominated bonds to be sold abroad as from the beginning of January 1991 and by taking various steps to improve the structure and functioning of the market.

The most essential measure was a primary dealer system for key (benchmark) government bonds: a financial institution signs a contract that guarantees it the right to participate in benchmark bond issues, with the obligation to maintain a secondary market for them. The monthly turnover of primary dealers' benchmark bond deals had grown to just under FIM 50 billion by the beginning of 1994. In 1993, well over FIM 60 billion worth of markka-denominated bonds were issued; in the mid-1980s the figure was one third lower. The

proportion of all issues accounted for by the central government was close to 60 per cent.

A bond-based derivatives market got under way in February 1994 with standardized bond forwards. The government debt market and auxiliary markets based on it had been overshadowed by other developments that took place in the financial markets in the 1980s. In the present decade, the emphasis has shifted back to promoting the functioning of the long-term government debt market.

### 3.1.5 Changes in how financial institutions operate

After the regulatory system was dismantled, the Finnish financial markets became closely linked with international markets, the money market developed, and the capital markets expanded substantially. This deregulation of financial markets also caused a radical change in the operations of financial institutions.

The change found expression in many ways: first, both on- and off-balance-sheet commitments increased substantially in the 1980s, as banks expanded into new markets and began to use new financial instruments increasingly in both their funding and application of funds. Secondly, the foreign currency-denominated domestic operations and actual international operations of Finnish banks expanded considerably, while foreign banks began to offer more services in Finland. Thirdly, banks and banking groups began to operate as consolidated companies. The parent bank and its subsidiaries — finance companies, subsidiary banks and mortgage banks — constituted a single entity offering integrated financial services. The different parts of the consolidated group were used effectively in financial mediation in order to cut costs and expand services, particularly during the phase of gradual deregulation.

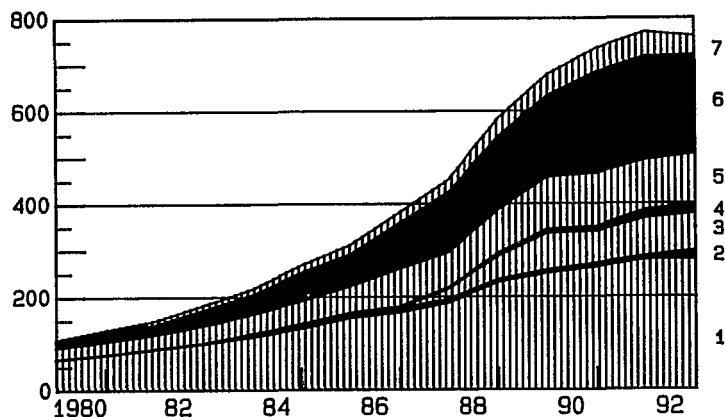
Though bank balance sheet totals rose quite slowly in the early 1980s, finance company operations were expanding fast. The demand for credit that had built up while interest rates were still regulated was released in a rapid increase in finance company lending and expansion of the bond market. The banks channelled their market investments through the unregulated finance companies either as market money or bonds. Once interest rate controls were dismantled, however, the growth of finance company balance sheets slowed down.

Bank balance sheets started expanding more rapidly after the mid-1980s, when controls on lending rates were lifted and foreign financing operations were largely deregulated. Total assets more than doubled between end-1985 and end-1992. This rapid expansion

process radically altered the structure of bank funding and application of funds. On the funding side, the most conspicuous feature was that foreign funding and money market funding both grew, while conventional deposits of the public declined (Chart 12). With respect to the application of funds, foreign currency loans and foreign instruments took a larger share, at the expense of markka-denominated credit. The banks also expanded their own investment operations, a fact that was reflected in rising investment asset and inventory figures and an increase in 'other financial assets'. Not only did markka-denominated deposits and lending decline relative to the total balance sheet, but the structure of these items also changed, as controls were dismantled. The stocks of traditional tax-exempt deposits and loans tied to the base rate both declined in relative terms.

The operations of the mortgage banks did not change as much as those of other credit institutions. As they specialized in risk-free and low-risk lending, their operating environment did not begin to change until 1989, when the law on tax relief for deposits and government bonds was amended. Once they could no longer issue low-interest tax-exempt bonds, the mortgage banks lost an important edge over the other financial institutions.

Chart 12. Structure of deposit bank liabilities, billion FIM



- 1 Deposits of the public
- 2 Non-negotiable unregulated deposits
- 3 Certificates of deposit
- 4 Bonds
- 5 Other domestic liabilities
- 6 Foreign liabilities
- 7 Valuation items, reserves, equity capital

Banks' off-balance-sheet items grew even faster than their balance sheets. Besides traditional bank guarantees and contracts connected with the provision of financing, the banks also began to make interest rate and currency swap agreements and futures contracts, and to buy and sell options. Use of these instruments was a part of the expansion of domestic and international operations denominated in foreign currencies and in money market activities. The growth in off-balance-sheet instruments derived from both the banks' need to manage their on-balance-sheet currency, interest and other risks and from the needs of their customers.

The internationalization of financial institutions found reflection not only in the rapid increase in foreign liabilities and claims but also in the growing presence of Finnish banks abroad and foreign banks in Finland. Though Finnish banks had acquired their first holdings in foreign banks back in 1964, they did not open offices of their own until the 1980s, when 11 branches (the first in 1984), 13 subsidiary banks, six associated banks and 25 representative offices were set up. Initially, these foreign units mainly served Finnish companies in their international operations. Later, they became completely international, doing business at times outside their circle of Finnish clientele. Judged by their balance sheets, these operations became quite extensive; for instance, the proportion of the consolidated balance sheet total accounted for by the balance sheet total of the foreign units, weighted by their 'Finnish share', was about 25 per cent.

Foreign banks first became established in Finland in 1982, though they had been allowed to open representative offices before that. From 1991 onwards, the law has allowed the opening of branches in Finland, and with one exception the subsidiaries set up earlier as limited-liability companies have been converted into branch offices. In balance-sheet terms, the operations of foreign banks have been modest at best, though their share of the market in off-balance-sheet instruments is much larger (eg 10–15 per cent of all money and foreign currency market contracts).

Because of all these changes in the way financial institutions operated, the risks they faced increased dramatically. The dismantling of credit controls meant the banks had greater freedom to expand their lending, but at the same time growing use of market interest rates and the dismantling of interest rate controls added to the risks. The exchange rate risks actually grew very little, as large open currency positions against the markka were not allowed. Even so, expanding bank operations in foreign currencies greatly increased their customers' exchange rate risk. Liquidity risk also increased substantially in the market-driven environment. While strict regulation was in force,

liquidity risk had been reflected mainly in central bank financing. With their money market funding and short-term foreign funding expanding, banks' liquidity risk increased appreciably.

Growing risks and greater market orientation accentuated the importance of bank balance sheet management, also in the view of supervisory officials. As a result, the Banking Supervision Office (under the auspices of the Ministry of Finance) and the Bank of Finland's own risk monitoring operation were combined in the autumn of 1993, forming the new Financial Supervision Authority in association with the Bank of Finland.

### 3.2 Reform of the central bank financing system

Another important milestone in financial markets in the 1980s, along with the dismantling of interest rate controls and the emergence of the money markets, was the shift to greater market orientation of the banks' central bank financing system. Central bank financing was gradually transformed from a system of individual bank quotas to a central bank call money market and then to the present process, in which the amount of central bank financing is regulated by means of money and foreign exchange market operations.

Up until the early 1980s, the key instrument of monetary policy was strict control of the amounts and terms for central bank credit granted to banks entitled to central bank financing. The amount of such credit was regulated through individual bank quotas tied to the base rate and bank-specific 'overdraft' rights. The banks had to pay penalty interest on their borrowings in excess of quota. Thus, the graduated scale of interest rates applied to the banks' debts to the Bank of Finland and the Bank's quota policy were prime tools of monetary policy.

This system was supplemented in 1979 by a cash reserve deposit arrangement, based on an agreement between the Bank of Finland and the banks. Under this arrangement, the banks were required to make cash reserve deposits in the central bank on which the rate of interest was tied to the base rate. The amount of these deposits depended on the cash reserve base, which was determined according to the banks' funding and the cash reserve requirement set by the Bank of Finland.

From 1975 onwards, monetary policy was also conducted through the Bank of Finland's call money market (referred to as the 'call money window' beginning in 1989). This market was initially set up in support of other tools of monetary policy and to give the banks a better chance to even out their liquidity differences. The banks entitled



to central bank financing could be either depositors or borrowers on the call money market. As the name indicates, the maturity of call money credits and deposits was one day (in the case of weekends and holidays, the next banking day). Gradually, however, the Bank of Finland revised its central bank financing system, expanding the call money market so as to replace credit quotas at the base rate, quota overdraft rights and bond repo transactions. Since the beginning of 1984, the banks' central bank financing has been provided solely through the call money market. With time, the call money interest rate has grown in importance as a tool of monetary policy.

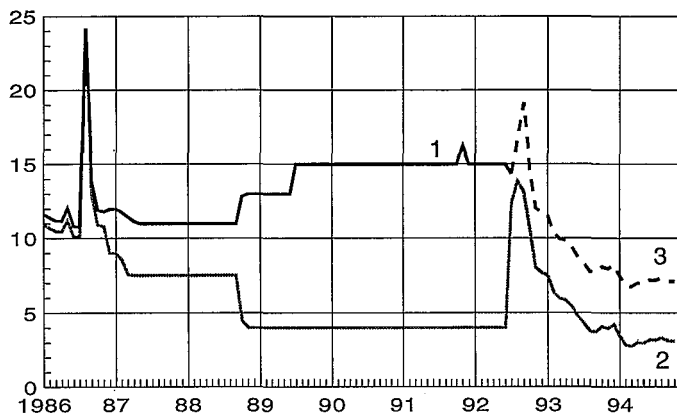
The call money system came under particularly heavy fire in the August of 1986, when the external value of the markka became the object of speculation and the Bank of Finland's foreign exchange reserves declined sharply. To counter the speculation and halt the outflow of foreign currency, the Bank of Finland hiked the call money credit rate to as much as 40 per cent, after which calm was restored. However, the storm had demonstrated the weakness of the call money market, and a start was made on making the central bank financing system more market-oriented, with monetary control being exercised through central bank open market operations rather than by means of the call money rates. Another aim was to extend the average maturity of the banks' debt to the Bank of Finland in order to reduce their interest rate risk.

The reform of the central bank financing system began in early December 1986. The banks were then offered not only call money credit but also three-month fixed-rate loans. The interest rates on and amounts of these loans were decided daily on the basis of tenders by the banks. In February 1987, the Bank of Finland also started accepting three-month fixed-rate deposits as well as call money deposits, with the aim of reducing money market liquidity. As in the case of credit, the deposit interest rates and amounts were decided on the basis of tenders from the deposit banks.

When these three-month options came into use, the Bank also drove a large wedge between its credit and deposit interest rates (Chart 13). The aim here was to encourage the emergence of an interbank market. In winter 1986–87, the call money credit rate was gradually reduced to 11 per cent, and the call money deposit rate to 7.5 per cent. As a result, the balancing out of liquidity between the banks rapidly shifted from the call money market to the interbank market. From April 1987 onwards, the right to use call money credit was gradually reduced by fixing individual bank quotas for the amount of call money credit available without an extra interest charge. On anything over the fixed limit, the banks had to pay penalty interest at 19 per cent.

Chart 13.

## Call money rates and liquidity credit rate, %



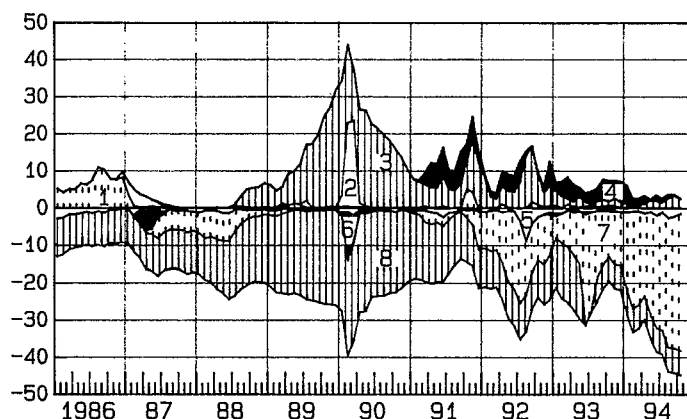
- 1 Call money credit rate
- 2 Call money deposit rate
- 3 Liquidity credit rate

In October 1988 the differential between the call money rates was increased still further. The credit rate was raised to 13 per cent and the deposit rate cut to 4 per cent. The next change came in June 1989, when the quotas for call money credit free from penalty interest were removed and the penalty rate abolished. At the same time, the cost of call money credit was increased by hiking the interest rate to 15 per cent. From November 1989 onwards, the banks had to pay double the rate of interest on call money credit if their call money position (call money deposits less call money credits) was negative, calculated as a five-day average. These changes have ensured that the call money market is no longer used as a permanent source of central bank financing.

As a result of the process just outlined, relations between the Bank of Finland and the banks have changed (Chart 14). In spring and summer of 1987, amid rapid expansion in the CD market, the Bank of Finland abolished three-month central bank credits and deposits, at the same time adopting CD trading as the means of controlling banks' liquidity. As a result, dealing in CDs became the most important tool of monetary policy. In March 1989, because the minimum maturity of CDs was one month, the Bank of Finland also started using account credits and deposits of under one month as an additional tool of monetary policy. However, little use was made of these instruments, especially during the bank strike in spring 1990, when the banks needed more temporary financing than usual and the task of balancing out the liquidity of the banking system passed to the central bank.

Chart 14.

### Financial relations between the Bank of Finland and the banks, billion FIM



- 1 Call money credits (liquidity credits as of 3 July 1992)
- 2 Term credits
- 3 Bank CDs held by the Bank of Finland
- 4 Repo credits
- 5 Call money deposits
- 6 Term deposits
- 7 Bank of Finland CDs held by banks
- 8 Minimum reserve deposits (cash reserve deposits before 1 July 1993).

In April 1990, the banks and the Bank of Finland agreed on an overhaul of the cash reserve agreement. The cash reserve base was reduced by eliminating unregulated deposits and net foreign debt. The interest rate on cash reserve deposits was tied to the three-month HELIBOR, instead of the base rate. The view taken at the time was that the cash reserve system would have less significance as a tool of monetary policy, affecting mainly income distribution between the banks and the Bank of Finland. This was the belief despite the fact that in spring 1989 a supplementary agreement valid up to the end of 1990 had been added to the current cash reserve agreement. Under this agreement, the Bank of Finland collected additional zero-interest deposits from the individual banks and banking groups. The purpose of the additional deposit requirement was to halt the growth in bank lending.

From the beginning of 1991 onwards securities repurchase (repo) agreements were adopted in money market trading between the Bank of Finland and the banks. This new procedure supplemented the earlier operations, which relied mainly on direct transactions in CDs. Under a repo agreement, a bank entitled to central bank financing can sell the

Bank of Finland securities from its own portfolio in order to obtain funding. The repurchase date and price of the securities concerned are agreed on with the selling bank when the deal is concluded.

In part, the introduction of repo transactions reflected the Bank of Finland's desire to limit the risk attached to central bank financing and to extend the range of securities used. The fact that Finnish money markets and Bank of Finland open market operations rely on bank CDs — ie private sector debt — is unusual from an international perspective. The securities involved in repo deals have generally been other banks' CDs.

As early as December 1989, the Bank of Finland announced that banks entitled to central bank financing were obliged to provide the necessary collateral for its claims on them, that is, the banks' till-money, term and call money credits as well as CDs held by the Bank of Finland. From January 1990 onwards, each bank had to secure these by providing the Bank of Finland with a blank collateral acceptance. The Bank of Finland also monitored trends in its total claims on banks entitled to central bank credit, and as necessary required them to provide further information on their liquidity situation.

At the beginning of 1991, the Bank of Finland's monitoring of the volume and collateral backing for its claims was overhauled. As a general precondition for the use of central bank financing, the banks had to provide the Bank of Finland with the required collateral. The blank collateral acceptance was abandoned as being impractical, and the Bank of Finland's claims on the banks at a given time were covered primarily by the banks' cash reserve deposits. A separate set-off agreement was made with the banks, by which the Bank of Finland was given the right to cancel a bank's cash reserve deposits and other claims on the Bank of Finland effective immediately. If these were insufficient to cover the Bank's claims, the bank concerned was required to put up the necessary collateral immediately.

In July 1992, the call money credit and deposit system was replaced by a new liquidity system. A seven-day liquidity credit took the place of call money credit, and the interest on credits and deposits was tied to current money market rates, through the Bank of Finland's tender rate. The call money deposit rate was raised to one percentage point below the tender rate; the liquidity credit rate was set at one percentage point above the tender rate.

Changing from overnight credit to longer maturities, and bringing the call money deposit rate closer to the market rate were both further moves to restrict the use of central bank financing and to encourage the banks to balance out their liquidity positions among themselves.

Another aim was to reduce the fluctuations in the overnight interest rate on the interbank market. The general trend in all central bank reserve systems is to increase the amount of the banks' free reserves in order to reduce their liquidity risk and interest rate variability. This has been done both by limiting borrowing from reserves (liquidity credit) and by paying interest on excess reserves (call money deposits).

The banks' current accounts in the Bank of Finland's interbank funds transfer (BOF) system are used to transfer funds between banks and to clear payments. Payment transactions between the Bank of Finland and the banks are connected with the latter's central bank financing and currency maintenance. Developing such payment and clearance systems is viewed as a key function of the central bank. In currency maintenance, much attention is given to ensuring the security of large payments and managing systemic risks. It is essential for the effective operation of the central bank financing system that the central bank be able to monitor the combined liquidity of the banking system and that bank-specific liquidity also be monitored.

In the 1980s, as money and currency market regulation was eased, there was an appreciable increase in interbank money market and foreign currency transactions. BOF system account transactions grew both in value and in volume, because the cover for interbank money market and foreign currency transactions is handled via the current accounts at the Bank of Finland. Because of the many changes taking place, up-to-date monitoring of these accounts became increasingly important to the banks. In 1988, a technical system was adopted to simplify banks' cash management and make it more effective; this allowed the banks to monitor their current account balances at the Bank of Finland in real time.

Payment transaction clearing observes the terms of an agreement between the Bank of Finland and the banks under which the cover for interbank payment transactions, ie fund transfers, is handled through the Bank of Finland's BOF system, debiting one bank's account and crediting another's. The BOF system was revised in March 1991. The banks were then provided with a real-time work station link with the BOF system, allowing them to handle directly payments to other BOF account holders. The BOF system is also linked to the Helsinki Stock Exchange and the Helsinki Money Market Center. In addition, banks' foreign markka payments are cleared and their post giro accounts zeroed through the BOF system.

In spring 1993, the Bank of Finland held negotiations with the banks on replacing the cash reserve system with a new 'minimum reserve' arrangement. These negotiations failed to produce any results, and consequently a law was passed (effective 1 July) that replaced the

cash reserve system with a minimum reserve system. At the same time, the till-money credit system through which the Bank of Finland financed deposit banks' till money and which had been in force for nearly 13 years, was also dismantled. Since then, the holding of cash by the banks has again entailed a normal marginal cost which provides incentive to minimize the holdings.

The amount of the minimum reserve requirement is never more than 5 per cent of the mandatory reserve holder's liabilities. The aim of the system is to give the Bank of Finland more effective monetary policy tools. No interest is paid on minimum reserve deposits, so the cost to a bank rises and falls with the level of interest rates. The system thus helps stabilize the money and credit supply and automatically increases the effectiveness of monetary policy, even when the percentage requirement remains unchanged.

In December 1993, the central bank's requirements for collateral on banks' liquidity credits and intra-day overdrafts were given precision. Full collateral was stipulated for liquidity credit, though this could also be covered by a liquidity repo deal to the same amount. The objective here was to balance out the banks' intra-day fluctuations and reduce unsecured indebtedness to the central bank, thus preventing payment disturbances from arising.

The Bank of Finland's risk connected with central bank financing was also reduced in respect of the banks' intra-day indebtedness. Limits were laid down for intra-day overdrafts, for which adequate collateral in accordance with the Bank of Finland's instructions was required. If necessary, a bank's intra-day credit limit can be raised temporarily, for which there is a separate charge set by the Bank of Finland.

If a bank does not supply adequate collateral for its liquidity credit and intra-day overdrafts, it is placed under special supervision. Extra interest at 5 per cent per annum is charged on the collateral shortfall for the entire credit period.

## 4 Objectives and implementation of monetary policy

The overriding objective of economic policy, as well as of monetary policy, is to ensure the stable development of the economy and a maximal standard of living. To attain this objective, the central bank strives to influence the development of the financial markets and the economy using those instruments that it has at its disposal. In Finland, these instruments were traditionally monetary policy and foreign exchange policy, depending on the market in which the policy was employed. The aim of monetary policy was to influence interest rates and the supply of money and credit; foreign exchange policy focused on capital movements and foreign exchange rates. Following the deregulation of financial markets, this rigid division into monetary and foreign exchange policy is no longer expedient. For example, the Bank of Finland's foreign exchange dealings not only affect exchange rates but also bank liquidity and thus money market interest rates.

Chart 15a. **Impact channels of monetary policy**

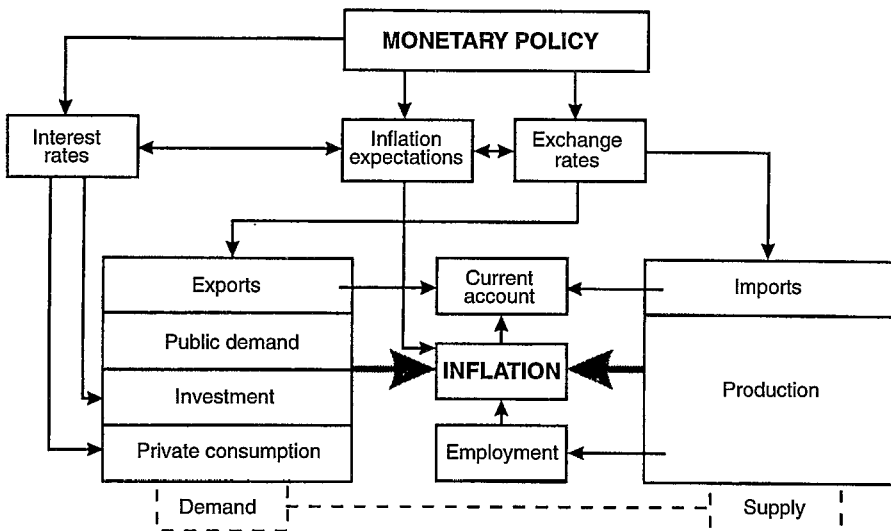
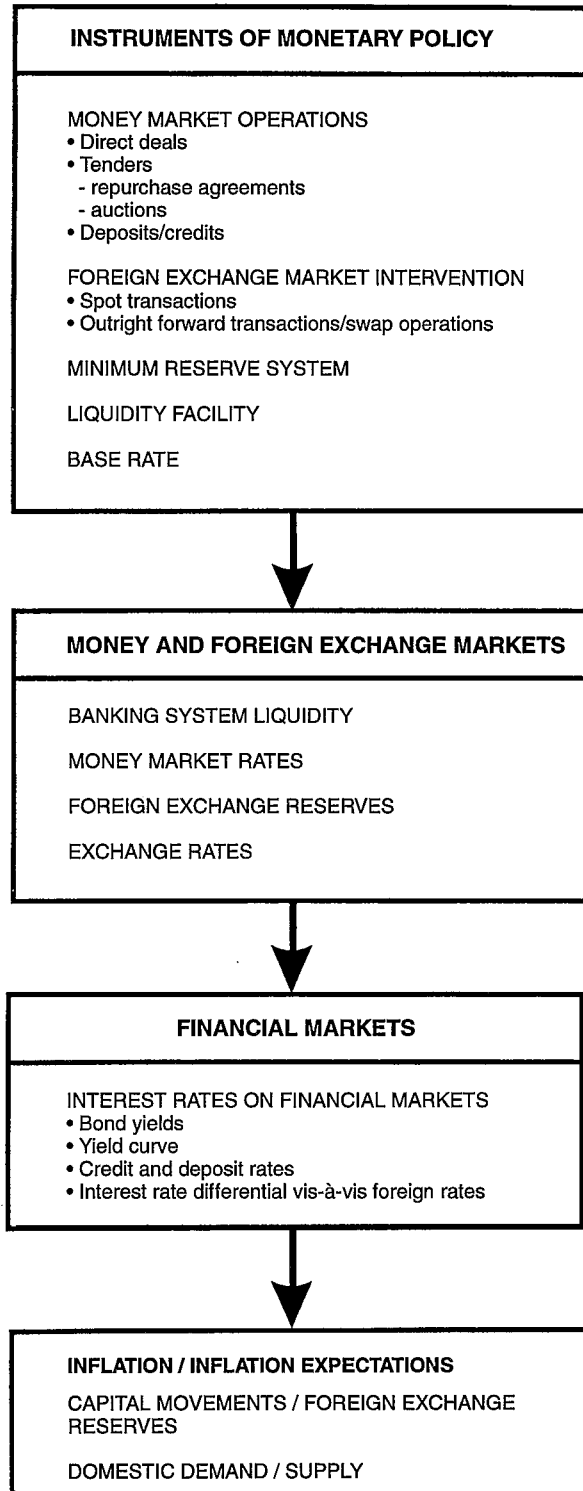


Chart 15b.

## Transmission of monetary policy





The instruments of monetary policy can be divided into systems, ie basic institutional set-ups, and actual policy instruments. Systems, which create the framework for the use of policy instruments, include the following: the exchange rate regime, the regulation of capital movements, the liquidity system, the minimum reserve system and other financing schemes between the banks and the central bank. Money and foreign exchange market operations, the base rate, the minimum reserve requirement, the liquidity system rates and the maturity of liquidity credits are policy instruments. The systems are outlined in sections 4.3.1–4.3.4 and the policy instruments and their use in sections 4.4.1–4.4.2.

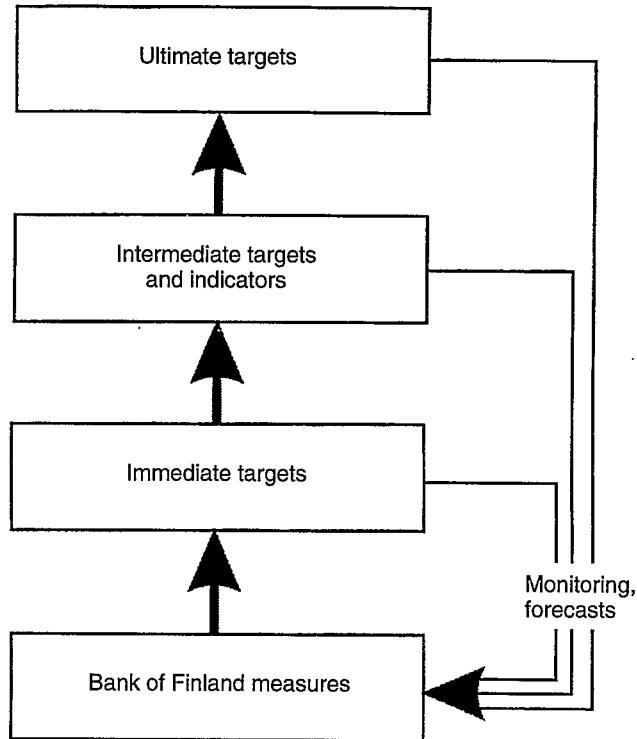
The central problem in the implementation of monetary policy is that the time-lag between central bank measures and their effects can be very long; with respect to the effect of an increase in interest rates on inflation, for example, the lag can be as much as 1–2 years. It is therefore important that measures not be based solely on current economic conditions but also on forecasts of future economic developments. This means that monetary policy must rely on close monitoring of the economy and forecasting.

Another important factor in the implementation of monetary policy is that the central bank cannot directly influence its ultimate targets by means of the instruments at its disposal. This is the reason central banks set different-level objectives for their operations, which are often divided into ultimate, intermediate and immediate targets. Monetary policy instruments are used to influence the immediate targets, which in turn affect the intermediate targets. The intermediate targets affect or indicate the course of the ultimate targets (Chart 16). Intermediate targets are often called 'indicators', if the central bank has not set precise numerical targets for them. An intermediate target is often published, in order to increase its credibility.

In many countries, low inflation has been specifically cited as the most important ultimate target of monetary policy. Aiming at low inflation is the central bank's most effective way of supporting external balance, stable and balanced economic growth and high employment. Intermediate targets, or indicators, can include exchange rates, the money and credit supply, interest rates on money and capital markets and the shape of the yield curve. The Bank of Finland's immediate targets are the banks' liquidity and central bank position, money market rates, exchange rates and foreign exchange reserves.

Chart 16.

### Targets of monetary policy



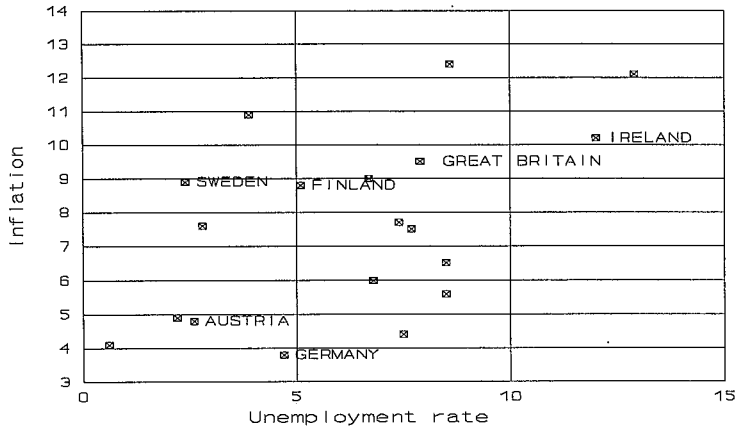
## 4.1 The ultimate target — why aim at low inflation?

Maintaining stability in the value of money is construed in the law as the most important task of monetary policy. Stability means that money retains its purchasing power, ie, in effect, that inflation is permanently low.

During the past few decades, various views have been expressed about the low-inflation target. Up to the early 1970s, Western industrial nations held that economic policy involved a trade-off between unemployment and inflation: lower inflation means higher unemployment, and vice versa. This idea, however, stumbled badly on the developments of the early 1970s; from the end of the 1960s onwards, inflation accelerated while unemployment rose. In the mid-1970s, several countries recorded both high unemployment and high inflation (stagflation).

Chart 17.

**Inflation and employment in OECD countries\*  
1973–1992, %**



\* Excl. Portugal, Greece, Turkey, Iceland

Experience during the past few decades shows that allowing high inflation does not yield lasting benefits in terms of economic growth, employment and welfare (Chart 17). On the contrary, high inflation has been seen to cause numerous economic problems and costs. The significance of the adverse effects of inflation has become even more obvious now that financial markets have been deregulated and interest rates are set by market forces.

The adverse effects of inflation are mainly due to the expectations of economic agents (such as households and companies). When an expansionist economic policy, with concomitant inflation, is pursued often enough in order to improve employment, expectations of still higher inflation start to be reflected in wage demands, price increases and interest rates. Gradually, an economic policy of high inflation proves unable to sustain demand, economic growth and employment, and the end result is only high inflation and high interest rates.

This could lead one to the conclusion that if inflation is fully expected, it does no harm (if no good either) to economic agents. Theoretically, this is the case if agents can protect themselves against the effects of inflation at no cost. In practice, however, it is often impossible to hedge against inflation because of various legal, institutional and tax-related factors. The process also carries a price, ie it needlessly consumes some of society's resources. For example, taxation of a saver's interest income is based on nominal interest earnings, which implies that accelerated inflation and higher interest rates raise his tax on real yields.

Moreover, experience has also proven that in an environment of high inflation variations in the inflation rate are greater than with low inflation and that variations in the rate are often unanticipated. For the economy as a whole, the drawbacks of unexpected and gyrating inflation can be substantial indeed.

If economic agents are unable to differentiate between a rise in general price level and a change in relative prices, unexpected inflation can lead to erroneous decisions involving production, investment and consumption. The expected real interest rate, ie the nominal interest rate less the expected change in prices, is of particular importance for the efficient allocation of investments. If actual inflation deviates from expected inflation, an investment that is expected to be profitable can result in a loss. Due to this uncertainty, fewer investments are likely in times of high and fluctuating inflation than when inflation is low and stable. Because investments are of prime importance for long-run economic growth, low and stable inflation creates a favourable environment for investment decisions.

One can also include among the adverse effects of high and unexpected inflation the effects on the division of income and wealth. Acceleration and deceleration of inflation cause random changes in the distribution of income and wealth, for example, between debtors and creditors. Inflation has acted as a tax on financial assets, especially deposits. Changes in the rate of inflation when financial markets were still regulated caused substantial income transfers between depositors and debtors.

The deregulation of financial markets brought an important change: deposit interest rates can now rise more swiftly in response to accelerating inflation. Amid high and uncertain inflation this may, on the other hand, mean that depositors' funds are kept mostly in very short-term deposits, because depositors do not wish to tie up their funds in long-term investments for fear of high inflation. It is then difficult for the banking system to grant long-term fixed-interest credit, because the money lent comes from short-term deposits. Such credit is then in short supply for financing investments. All in all, during periods of high inflation the structure of financial markets changes: the relative importance of short-term investments and loans gradually increases — a fact which is bound to affect investment.

The risk of unexpected inflation is reflected in the level of interest rates on deregulated financial markets. The higher and less stable inflation is, the greater the risk faced by a buyer of a long-term bond. For bonds to attract buyers, the expected real interest rate must be sufficiently high. In other words, high inflation does not result solely

in higher nominal rates on long-term bonds, but also in higher real interest rates.

In a small economy dependent on international financial markets, such as Finland, the real interest rate problem becomes critical once capital movements are deregulated. If inflation is persistently higher than in other countries, this inevitably leads to a depreciation of the domestic currency. As investors must take this risk into account when they buy bonds, the upward pressure on interest rates grows. A country with a high rate of inflation will suffer from a risk premium connected with inflation and with the exchange rate, which will be incorporated in its real interest rates, and will thus ultimately suffer from slow economic growth and high unemployment.

## 4.2 Ultimate, intermediate and immediate targets in fixed and floating exchange rate regimes

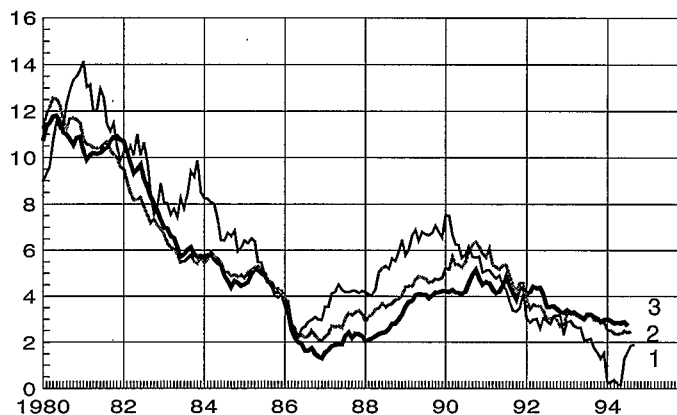
Low inflation is the ultimate target of monetary policy. Because this ultimate target cannot be directly controlled with the instruments of monetary policy, central banks also set intermediate targets which will help to achieve the ultimate target. If no exact trend target or the like is set for an intermediate target, it can also be considered as an indicator. Movements in the indicator forecast progress towards the ultimate objective. The importance of intermediate targets depends critically on the exchange rate regime in question. Under a fixed exchange rate, the exchange rate is an intermediate (target variable) of monetary policy, whereas in a floating exchange rate regime the intermediate target is often the stock of money and credit, or the interest rate level.

In Finland, the exchange rate has been the most important intermediate target of monetary policy and the Bank of Finland has had a fixed exchange rate policy. The exchange rate target also defines the inflation target. If a country is to maintain a fixed exchange rate, the domestic inflation rate and cost trends should not, over the long run, exceed the inflation rate in the countries whose currencies are involved in the peg (Chart 18). When the Bank of Finland's objective was to keep the trade-weighted currency index stable, domestic inflation had to be kept at no more than the average inflation level in the included countries, weighted by their shares in Finnish foreign trade. If domestic inflation exceeded this target level, the result was weaker competitiveness and pressure to change the exchange rate. When the Bank of Finland pegged the markka to the European

Currency Unit (ECU) in 1991, the inflation target changed from the trade-weighted inflation rate to one based on the ECU currency weights. The fixed rate of exchange acted as an anchor for monetary policy, determining the inflation target and thus also the constraints for other segments of economic policy. A fixed exchange rate regime is successful only if the other segments of economic policy function as required by the inflation target.

The importance of other intermediate targets and the ways in which the central bank could affect them depended largely on the nature and effectiveness of financial market regulation. When the regulation of capital movements was comprehensive and unavoidable, and domestic interest rates and credit were regulated, the Bank of Finland was able at the same time to regulate trends in the exchange rate and interest rates as well as the growth of money and credit. Controlling all three variables (interest rates, exchange rate and money stock) often meant that there was an excess demand for credit, ie there was credit rationing.

Chart 18. **Inflation in Finland and abroad**



- 1 Inflation in Finland
- 2 International inflation according to the currency basket
- 3 International inflation according to the ECU basket (excl. Greece)

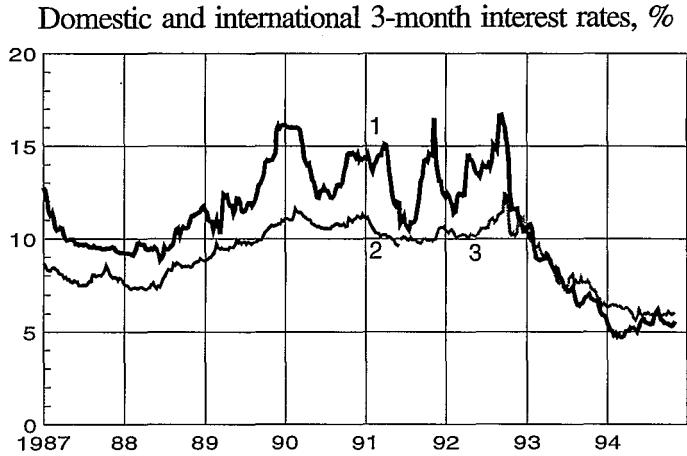
The deregulation of financial markets meant a significant change in the Bank of Finland's ability to influence simultaneously the different intermediate targets. The dismantling of interest rate controls and deregulation of capital movements meant that under a fixed exchange rate regime the Bank of Finland's ability to influence liquidity in the financial markets diminished. When the Bank tried to tighten the liquidity of the banking system, interest rates rose relative to the international level, with the result that foreign capital was drawn into the domestic financial markets by the interest rate differential. The inflow of capital boosted the demand for the markka and put upward pressure on its external value. In order to keep the value of the markka within the fluctuation range, the Bank of Finland was obliged to purchase foreign exchange. The resulting increase in foreign exchange reserves increased liquidity in the financial markets, leading in turn to lower interest rates. Free capital movements in conjunction with the exchange rate target weakened the Bank of Finland's ability to influence liquidity in the financial markets as well as the level of interest rates.

Thus, following the deregulation of financial markets in the late 1980s, the fixed exchange rate target substantially reduced the Bank of Finland's ability to affect interest rates and bank funding and lending. An active cash reserve policy was introduced to cope with the problem. The Bank of Finland thus raised the cash reserve requirement, which tied up more of the banks' liquidity at the central bank earning a below-market return. The banks had to transfer this burden to their lending charges, which had some effect on the growth of lending. It was not possible to completely halt the massive growth in bank lending, but the cash reserve policy did hasten the end of the credit boom.

In addition to intermediate targets, monetary policy also involves immediate, ie operating objectives or targets (Chart 19). Immediate targets are those money and foreign exchange market variables which the central bank can affect immediately. The connection between the instruments of monetary policy and immediate targets is a close one, and the impact lag is very short. Immediate targets include the banks' liquidity position at the Bank of Finland, short-term interest rates, exchange rates, foreign exchange reserves and the Bank's forward currency position. It is an essential feature of immediate targets that they should interact closely.

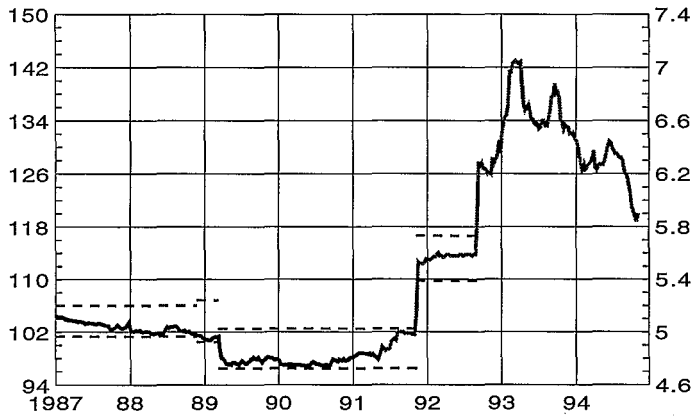
Chart 19.

### Key immediate targets in 1987–1994



- 1 HELIBOR
- 2 Bank of Finland currency basket interest rate
- 3 ECU

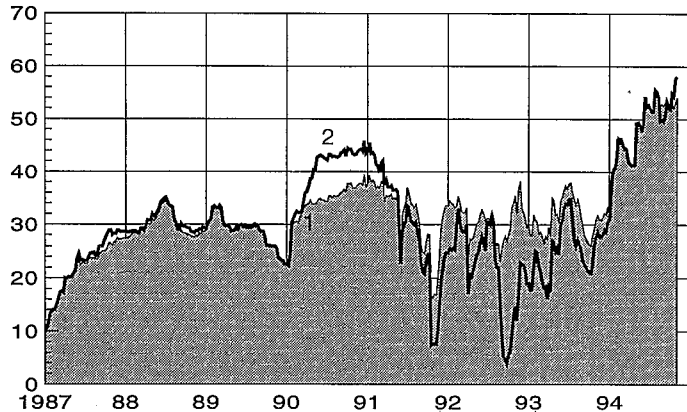
### Finnish foreign exchange rate regime



- Bank of Finland currency index (left scale)
- Markka value of the ECU from 7 June 1991 (right scale)



## Bank of Finland foreign exchange reserves, billion FIM



- 1 Foreign exchange reserves
- 2 Reserves including Bank of Finland's forward exchange position

In a fixed exchange rate system, the fluctuation range of the currency index constitutes an intermediate target. The Bank of Finland has set targets for the course of the currency index within the fluctuation range (currency band). This means that movements in the value of the markka involve immediate as well as intermediate targets. In the first half of the 1980s, the Bank of Finland set a very narrow fluctuation range for the currency index. After the mid-1980s, the markka was allowed to move more freely within the band. The key principle, however, was that foreign exchange intervention would be used to dampen any large fluctuations arising from market pressures.

Foreign exchange intervention by the Bank of Finland affects the foreign exchange reserves. Spot transactions have an immediate impact on reserves; the effect of forward transactions is delayed. Without foreign exchange reserves, it would be impossible for the central bank to influence exchange rates, because reserves are needed to deal in the market. Under a fixed exchange rate system, the central bank needs sufficient reserves in order to ensure credibility in its ability to stabilize exchange rate trends in the short term and to defend the fluctuation range over the long run. As the Bank of Finland has set loose targets for the foreign exchange reserves, they also constitute an immediate target. On the one hand, the reserves should not be too

low; on the other, they should not grow excessively relative to the Bank's balance sheet.

Under a fixed exchange rate system, the Bank of Finland can, in the short term, dampen exchange rate pressures caused by capital movements by buying and selling foreign exchange. Foreign exchange dealing cannot, however, continue indefinitely; at some point the Bank must allow interest rates to react. Persistent upward pressure on the domestic currency leads to a decline in interest rates, and downward pressure leads to rising interest rates. To restrain pressure on the foreign exchange rate, the Bank of Finland can also operate directly in the money market. It may be possible to alleviate downward pressure on the markka by increasing the differential between domestic and international interest rates. Correspondingly, by narrowing the differential, the attractiveness of the Finnish markka as an investment currency can be reduced, which in turn reduces the upward pressure on the markka.

It is worth noting, as regards the interdependency of immediate targets, that the Bank of Finland cannot simultaneously 'fix' all of them at the chosen levels now that capital movements have been deregulated (Chart 20). If the aim is to keep foreign exchange rates stable, either the foreign exchange reserves or interest rates will respond to market pressures. If the interest rates are stabilized, either the exchange rate or the reserves must give way.

Under a floating exchange rate regime, the Bank of Finland has a much freer hand regarding both proximate and intermediate targets. When there is no fluctuation range or other similar target for monetary policy, the Bank of Finland can actively attempt to influence trends in interest rates and/or the money stock as well as credit.

Chart 20. **Key immediate targets of monetary policy**

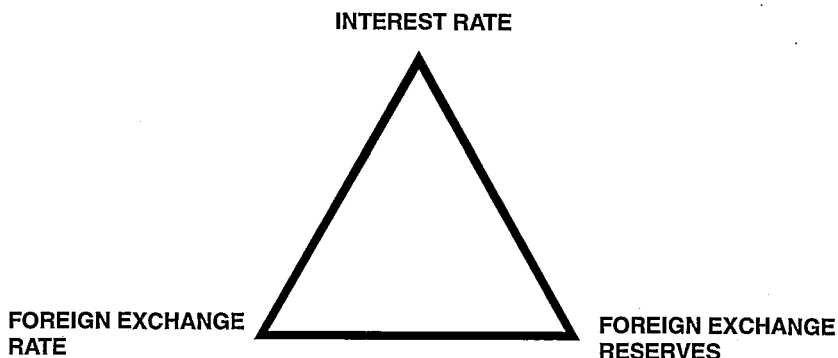
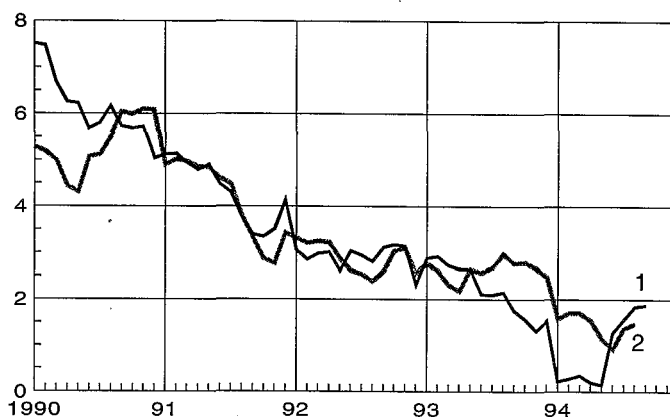


Chart 21.

**12-month change in the indicator of underlying inflation and in consumer prices, %**

- 1 Consumer prices
- 2 Indicator of underlying inflation

During the time the markka has been floating, the Bank of Finland has not set any firm intermediate targets. To give monetary policy a firm anchor, however, the Bank of Finland announced in February 1993 that the primary objective of monetary policy was to bring the inflation rate down to 2 per cent by 1995. This inflation target was not aimed at consumer prices as such, but at the indicator of underlying inflation, which is derived from the consumer price index (Chart 21). This indicator is calculated by eliminating from consumer prices the effect of indirect taxes, subsidies and capital expenditure on housing (housing prices and interest on housing loans). A similar inflation target was published by Sweden and the United Kingdom in the winter of 1992–1993, after they had allowed their currencies to float.

By making the inflation target public, the Bank of Finland aimed to affect inflation expectations. Publication of the target aims at averting the credibility problem. If a widely publicized low-inflation target is not credible, the expected inflation rate will not decline, even if actual inflation is low. This means that the expected real interest rate is lower than the actual real interest rate. The consequences of the credibility problem are serious: monetary policy is tighter than what would otherwise be necessary, wage increases tend to be too large, unemployment is widespread and debt problems worsen.

The fact that it publishes an inflation target based on the indicator of underlying inflation does not mean that the Bank of Finland does not carefully monitor other indicators of inflation, or the entire inflation

process. Other inflation indicators include trends in earnings and export, import, wholesale and producer prices. Capital prices such as housing prices, stock quotations and stumpage prices, are also inflation indicators that must be taken into consideration in monetary policy planning. Inflation expectations also play a central role in policy monitoring.

The Bank of Finland has not set any firm intermediate targets to help achieve its inflation objective. This is why the concept of monetary policy indicators is preferred to intermediate targets in the context of floating exchange rates. The monetary policy indicators comprise foreign exchange rates, monetary and credit aggregates, and interest rates.

Although no target has been set (by definition) for the value of the markka in the context of the present floating exchange rate system, the Bank of Finland has sought to influence exchange rates through foreign exchange intervention, aiming to dampen major fluctuations in exchange rates. When the markka has weakened, the Bank of Finland has sold foreign exchange to support it, and vice versa. The aim of stabilizing exchange rate trends must be seen from the standpoint of the inflation target. As Finland's economy is small and open, sizeable fluctuations in exchange rates have a major impact on export and import prices. The markka's rate against the ECU is not the sole exchange rate used as a monetary policy indicator. The deutschmark and US dollar rates against the markka and the trade-weighted currency index are other useful indicators. Moreover, the Swedish krona has a special status vis-à-vis the markka, as the Nordic countries and, in particular, Finland and Sweden, are viewed as a single entity in the international currency markets.

Monetary and credit aggregates form an important set of indicators in a floating exchange rate regime. The use of monetary and credit aggregates as intermediate targets of monetary policy derives from the equation of exchange:

$$M \times V = P \times Y$$

M is the money stock, V the velocity of money, P the price level and Y income. Assuming that velocity is constant, the money stock growth rate is then the inflation target plus the income growth rate. Use of the money stock as an intermediate target is argued by the fact that it is regarded as the ultimate main source of inflation over the long run. Inflation can be halted by limiting the growth in money stock to the economy's real growth potential. A second aim is to curb the public's inflation expectations by setting a fixed growth target for the money stock. In the short term, domestic costs and import prices (foreign exchange rate) can affect inflation.

The anchor for a monetary policy aimed at growth in the money stock can thus be formulated according to the equation of exchange taxonomy, as follows. First, the money stock indicator must be selected. Secondly, the economy's real growth is determined so that output increases that fall below the potential are not inflationary. Thirdly, an inflation target is determined which is consistent with price stability. Finally, a determination must be made as to whether changes in velocity are to be expected.

Monetary policy based on money stock control requires that the money velocity, and therefore money demand, be forecastable. The relationship between the supply of money, nominal income, inflation and interest rates must be easy to forecast. To achieve the objective, the central bank must be able to control monetary aggregates, either through the monetary base or through interest rates.

An often applied premise is that the monetary base can be rigidly controlled by the central bank. From the central bank's point of view, control of the monetary base is hampered by a number of factors. Among these: changes in the interest rate elasticity of the public's demand for credit, the public sector deficit, exchange rate fluctuations due to the sensitivity of capital movements and difficulty in assessing the effect of open market operations (because eg the demand for central bank money can vary). The public's currency ratio and the banks' reserve ratio are not always stable. The relationship between the monetary aggregates and the monetary base is also disturbed by measurement problems and by temporary disturbances, such as Finland's banking crisis, whose effects on monetary aggregates are difficult to judge.

In an open economy and amid free capital movements, growth in the domestic component of the monetary base may be followed by a corresponding reduction in the foreign component. In a fixed exchange rate regime, the central bank undertakes to buy and sell foreign exchange at a set rate, which is why it is unable to affect fluctuations in the banks' central bank position. With a floating exchange rate, sterilized interventions in the foreign exchange market, for the purpose of dampening interest rate fluctuations, have the same result. On the other hand, if policy relies solely on tight control of the monetary base, the result can be substantial (undesired) interest rate volatility.

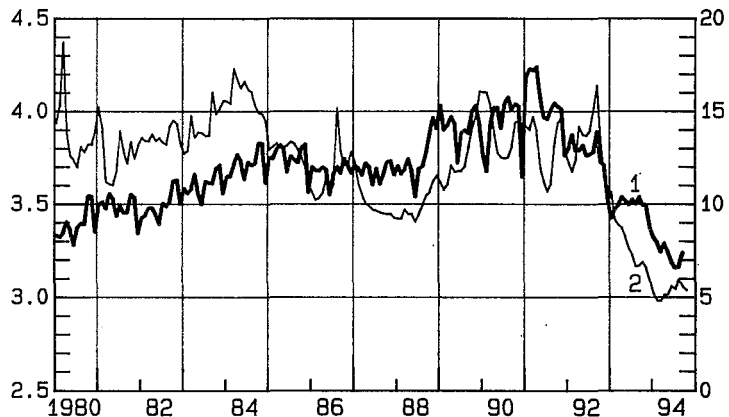
Monetary policy based solely on control of the monetary base is thus problematic or it at least requires a learning process of several years on the part of the central bank and other economic agents. The same problems affect a policy based on the central bank's domestic lending or some measure of banks' reserves (total reserves, nonborrowed reserves). Conventional interest rate controls can be employed in an attempt to

regulate growth in the money stock, but this policy has also proved difficult for central banks. The problem is the possible instability of the interest rate elasticity of demand for central bank funding.

Even in countries where monetary aggregates are official intermediate objectives, central banks do not plan monetary policy on the basis of the money supply itself. The immediate task of a central bank is to satisfy the needs of the banking system and the public as regards the demand for money by providing sufficient liquidity. Monetary policy is exercised and the money stock influenced mainly through interest rates. Through their interest rate policies, central banks try to directly influence economic activity and the demand for money.

The Bank of Finland has not publicly set growth targets for the supply of money or credit, for a variety of reasons. First, the banking crisis has made it difficult to interpret conventional money and credit aggregates. Secondly, interpretation is hampered by the large proportion of financing denominated in foreign currencies and the rapid growth of the securities markets. Thirdly, the velocity of money has proven to be rather unstable (Chart 22). Although the Bank has not announced a target, it has, in order to plan monetary policy, assessed how much various monetary and credit aggregates can grow without jeopardizing the inflation target. The most important monetary policy indicators here are the monetary base, M1, M2, M3, the banks' markka credit stock and total credit stock.

Chart 22. Velocity of money and market interest rate



- 1 GDP/M1 (left scale)
- 2 Market interest rate, 3 months (right scale)

Table 4. **Monetary policy targets under fixed and floating exchange rates**

<i>Targets</i>	Fixed exchange rate	Floating exchange rate
<i>Ultimate targets</i>	<ul style="list-style-type: none"> <li>* Inflation no higher than the level in competitor countries</li> <li>* External balance</li> </ul>	<ul style="list-style-type: none"> <li>* Inflation around 2% in 1995</li> </ul>
<i>Intermediate target variables, indicators</i>	<ul style="list-style-type: none"> <li>* Fixed exchange rate (in the fluctuation range)</li> </ul>	<ul style="list-style-type: none"> <li>* Money and credit stocks</li> <li>* Exchange rates</li> <li>* Interest rates and yield curve</li> </ul>
<i>Immediate target variables</i>	<ul style="list-style-type: none"> <li>* Bank liquidity</li> <li>* HELIBORs</li> <li>* Value of currency (within the fluctuation range)</li> <li>* Foreign exchange reserves</li> </ul>	<ul style="list-style-type: none"> <li>* Bank liquidity</li> <li>* Money market rates</li> <li>* Foreign exchange rates</li> <li>* Foreign exchange reserves</li> </ul>
<i>Instruments</i>	<ul style="list-style-type: none"> <li>* Operations on money and foreign exchange markets</li> <li>* Call money terms</li> <li>* Cash reserve requirement</li> <li>* Base rate</li> </ul>	<ul style="list-style-type: none"> <li>* Operations on money and foreign exchange markets</li> <li>* Liquidity system terms</li> <li>* Minimum reserve requirement</li> <li>* Base rate</li> </ul>

The next set of monetary policy indicators under a floating exchange rate regime is interest rates. As under fixed exchange rates, short-term interest rates are intermediate target variables for monetary policy. Interest rates should be viewed as monetary policy indicators, both in relation to international interest rates and as components of the yield curve. The level of short-term interest rates in Finland relative to international rates reflects the relative stringency of Finnish monetary policy. The differential between short- and long-term interest rates in turn illustrates the markets' interest rate expectations. If long-term interest rates are higher than short-term rates, ie the yield curve is rising (upsloping), the markets expect short-term rates to increase. A falling (downsloping) yield curve indicates an expected fall in short-term rates. In looking at interest rate expectations, the Bank of Finland often uses a yield curve based on forward rate agreements, in addition to the conventional yield curve based on secondary market bond yields.

The yield curve can also be used to assess inflation expectations. If the financial markets expect the real interest rate to be fairly constant over a long period, a rising yield curve indicates that inflation is expected to increase. Correspondingly, a falling yield curve means

that inflation is expected to slow down in the future. However, the problem in interpreting a yield curve is that in the short term there are many other factors, besides changes in inflation expectations, which affect interest rates.

In a floating exchange rate system, it is more difficult to draw the line between immediate and intermediate targets than in a fixed exchange rate regime. In principle, the immediate targets are the same as in a fixed-rate regime. It is worth noting, however, that the Bank of Finland's ability to influence short-term interest rates is now greater, because in a floating exchange rate system exchange rate movements do not restrict interest rate policy as much as in a fixed rate regime. There is also more room for manoeuvre as regards foreign exchange reserves. In a floating exchange rate system, it is not, in principle, as important to maintain the foreign exchange reserves at some appropriate level as it is in a fixed exchange rate system. In practice, Finland's foreign debt and the thinness of the foreign exchange market means that maintaining an appropriate level has played an important role in stabilizing exchange rate expectations.

The floating exchange rate regime has not eliminated the basic problem involved in the setting of immediate targets — that is, that the Bank of Finland cannot fix all its immediate targets at the desired levels at the same time. If the Bank tries to stabilize interest rate trends, pressures on the money and foreign exchange markets spill over into exchange rates or foreign exchange reserves. Even in a floating exchange rate system, immediate targets cannot be achieved for more than one interest rate and/or a given foreign exchange rate or index. If there are too many proximate targets, the transparency of market interventions *vis-à-vis* the money market disappears and simultaneous attainment of targets is only random, at best.

## 4.3 The institutional framework for monetary policy

### 4.3.1 The exchange rate system

During the entire post-war era, except for the past couple of years, Finland has pursued a foreign exchange policy aimed at keeping the external value of the markka as stable as possible. Under the Bretton Woods system, which was based on fixed exchange rates, this was a clear and natural policy objective all the way up to the early 1970s.



Table 5.

### Main changes in the Finnish exchange rate system

1948-1971	<p style="text-align: center;"><b>PAR VALUE</b></p> <p>The par value expressed in gold and confirmed by the International Monetary Fund is an integral part of the fixed exchange rate system. The par value changed for the last time on 11 October 1967, to 0.211590 grams of fine gold per markka (FIM 4.20 per dollar). The fluctuation limits of the markka against the dollar are 1 per cent on either side of the par value.</p>
20 December 1971	<p style="text-align: center;"><b>CENTRAL RATE</b></p> <p>FIM 4.10 per dollar. Fluctuation limits are slightly more flexible, ie <math>\pm 2\frac{1}{4}</math> per cent.</p>
4 June 1973	<p style="text-align: center;"><b>FLOATING</b></p> <p>No fluctuation limits for the markka against the dollar (or any other currency)</p>
1 November 1977	<p style="text-align: center;"><b>AMENDMENT TO SECTION 2 OF THE CURRENCY ACT</b></p> <p>A new concept, the external value of the markka, expressed as a currency index number. Fluctuation limits of the index are <math>\pm 2\frac{1}{4}</math> per cent around the calculated midpoint, ie a total of some <math>4\frac{1}{2}</math> per cent. Council of State confirms the fluctuation range upon submission by the Bank of Finland.</p>
1 January 1984	<p style="text-align: center;"><b>NEW CURRENCY INDEX</b></p> <p>Rouble removed from the index. New calculation formula.</p>
7 June 1991	<p style="text-align: center;"><b>ECU PEGGING</b></p> <p>Markka pegged to the ECU.</p>
8 September 1992	<p style="text-align: center;"><b>FLOATING</b></p> <p>Markka allowed to float.</p>

In Finland, as in the other Nordic countries, a system of fixed exchange rates was considered best suited to a small, open economy. In such an economy, the foreign exchange market is thin and floating exchange rates can lead to extreme volatility. This in turn could have an adverse effect on exports and imports, and might increase inflationary pressures in the economy, if a weakening of the exchange rate spills over more readily into domestic prices than does a strengthening of the exchange rate. For a small country dependent on

foreign capital, being a part of the large countries' system was the surest way to win international confidence in the stability of its financial system.

In the early 1970s, the international foreign exchange markets moved over to a system in which the most important currencies were floating. In 1972 Finland introduced a currency index for the external value of the markka. Initially, the index was used unofficially, but when it became evident that there would be no return to the earlier international fixed exchange rate system, the Currency Act was amended in November 1977 and the currency index became the official basis for exchange rate policy.

The amendment made the currency index the official measure of the external value of the markka; it gave the average change in the exchange rates of the countries most important in Finnish foreign trade. On submission by the Bank of Finland, the Council of State confirmed the calculation method for the currency index and the fluctuation limits of the index, which were at first 2.25 per cent and from the end of 1988 3.0 per cent above and below the calculated midpoint.

**Table 6. Weights of the Bank of Finland currency index and the ECU basket**

Country	Currency	Currency basket up to 6 June 1991, %	ECU basket 6 June 1991
Germany	DEM	19.4	30.3
Sweden	SEK	18.7	—
Great Britain	GBP	12.6	12.6
United States	USD	8.6	—
France	FRF	6.9	19.1
Japan	JPY	5.7	—
Italy	ITL	5.2	10.0
Netherlands	NLG	5.0	9.5
Denmark	DKK	4.5	2.5
Norway	NOK	4.0	—
Belgium	BEF	3.3	7.8
Switzerland	CHF	2.4	—
Spain	ESP	2.1	5.4
Austria	ATS	1.6	—
Ireland	IEP	—	1.1
Greece	GRD	—	0.6
Portugal	PTE	—	0.8
Luxembourg	LUF	—	0.3
Total		100.0	100.0

The currency index was calculated by weighting the markka rates of currencies included in the index by trade share. The currency basket included the currencies of all countries whose share of Finnish foreign trade during the last three calendar years had averaged at least 1 per cent a year. The most important currencies were the Swedish krona, the deutschmark and the pound sterling (Table 6). At first, the currency index was published monthly and from 1984 daily. The rouble was then removed from the index, which now comprised only convertible currencies.

Chart 23a. **International exchange rates,  
January 1980 = 100**

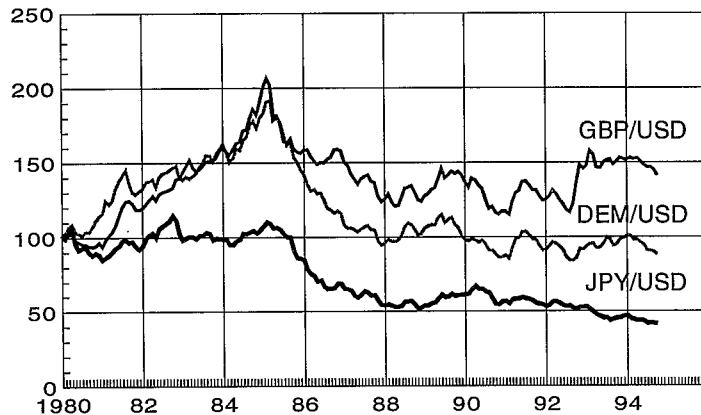
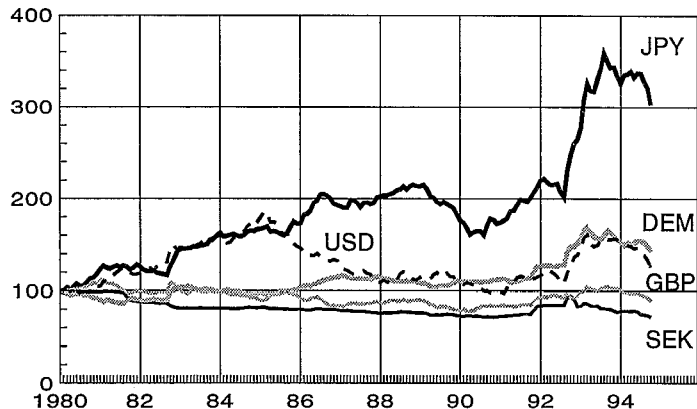


Chart 23b. **Domestic exchange rates,  
January 1980 = 100**

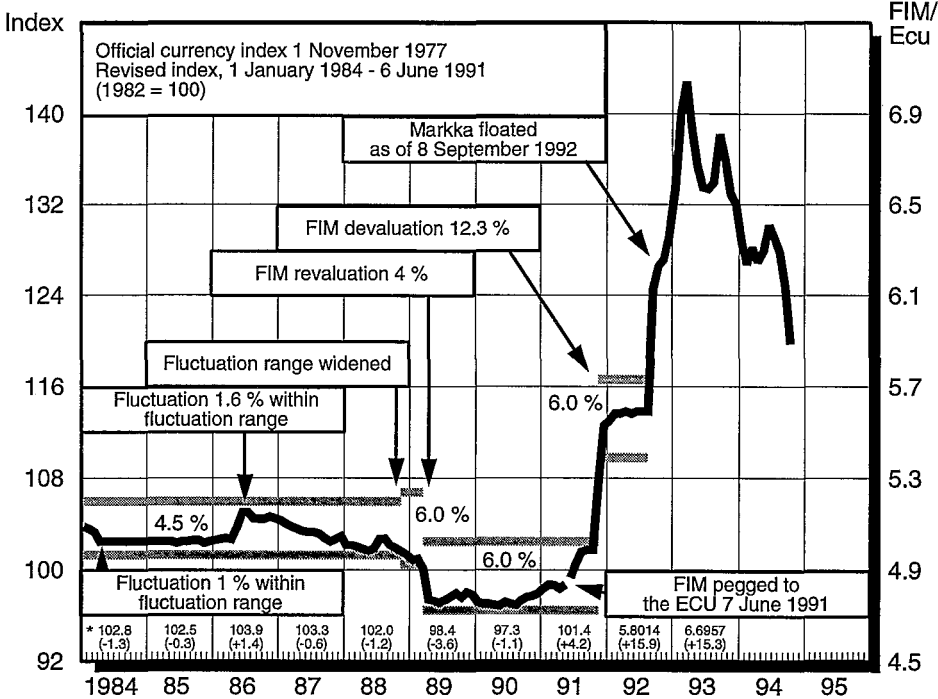


The currency index determined the external value of the markka in relation to the currencies of Finland's most important trade partners. The index was similar to those used in Sweden and Norway. When the currency index was stable, changes in international exchange rates did not affect Finland's average competitiveness. In the short term, however, the markka incomes of exporters and importers were not stable on average, because the breakdown of payment and contract currencies used in foreign trade differed sharply from the trade breakdown. The dollar, in particular, was much more important in the former than in the latter.

The structure of the index and the fixed exchange-rate policy meant that in between major adjustments in exchange rates there was somewhat less volatility on the Finnish foreign exchange market than on the international market. Over the long run, however, devaluations and the floating of the markka have increased exchange rate volatility in Finland (Charts 23a and 23b).

Chart 24 shows the movements in the external value of the markka since 1984. The markka was kept very stable at times — for instance, from the end of 1982 to March 1984. The markka's value strengthened by about one per cent during that time, and the index remained practically unchanged up to spring 1985.

Chart 24. Finnish exchange rate system, 1984–1994



\* Annual average. Percentage change on the previous year in brackets. 1991 change calculated according to trade-weighted index.

Beginning in May 1985, the Bank of Finland gradually changed its exchange rate policy. This was due to the growing sensitivity of capital movements to interest rate differentials and exchange rate expectations. The policy of fixing the external value of the markka began at that time to require increasingly extensive foreign-exchange interventions, because the total absence of a short-term exchange rate risk induced arbitrage operations for exploiting interest rate differentials.

When the currency index was allowed to change, it became evident that the narrow fluctuation range made it more difficult for monetary policy to influence trends in domestic demand. The fluctuation range of the index was thus widened from 4.5 per cent to 6 per cent at the end of November 1988. The fluctuation range itself was lowered by about 4 per cent in March 1989. This measure was designed to create more room for a rise in market rates in accordance with then-current monetary policy targets, and to widen the differential between domestic and foreign interest rates.

At the beginning of 1991, uncertainty about the course of Finnish economic policy prompted practically continuous and heavy outflow of capital, due to exchange rate expectations. In June 1991, the external value of the markka was pegged to the European Currency Unit (ECU) instead of the trade-weighted currency basket. Sweden had done the same thing a little earlier. The fluctuation limits of the exchange rate were kept at  $\pm 3$  per cent. The change in the currency basket did not essentially affect the way the external value of the markka was measured, as the ECU currencies and other currencies pegged to it already accounted for over 85 per cent of the old currency index.

Immediately following this move, Finland's credibility improved in the foreign exchange markets. However, because of the economic policy crisis and the heavy outflow of capital which began in late summer 1991, the markka was devalued in November of the same year. On the basis of a proposal submitted by the Bank of Finland, the Council of State decided to lower the markka's external value 12.3 per cent, which meant raising the ECU fluctuation range against the markka by 14 per cent.

Unrest continued in 1992. International markets were also uneasy; the European Monetary System (EMS) felt certain pressures that had been building up for some years. These made Finland's situation untenable, and on 8 September 1992 it was decided to float the markka.

Chart 24 shows that in the last months of 1992, when the markka was floating, the ECU rate against the markka rose some 13 per cent on average. Early in 1993, the markka depreciated further against the

ECU but appreciated considerably toward the end of the year. At the beginning of 1994, the strengthening continued, and after fairly stable developments in the spring, the strengthening resumed in the autumn of 1994. All in all, the markka weakened nearly 20 per cent against the ECU during the three years period following the devaluation in November 1991.

#### 4.3.2 The liquidity facility and banks' central bank financing

On 1 July 1992, the Bank of Finland's call money deposit and credit facility was replaced by a new liquidity facility (Chart 25). The functions of the old facility remain in the new system, which comprises call money deposits and fixed-term liquidity credits. The liquidity system is a vital element in the country's monetary policy, enabling individual banks to obtain marginal financing from the central bank and to maintain deposits at the Bank of Finland. The liquidity system is also an element in the banks' payment transactions because it helps them even out their daily liquidity positions.

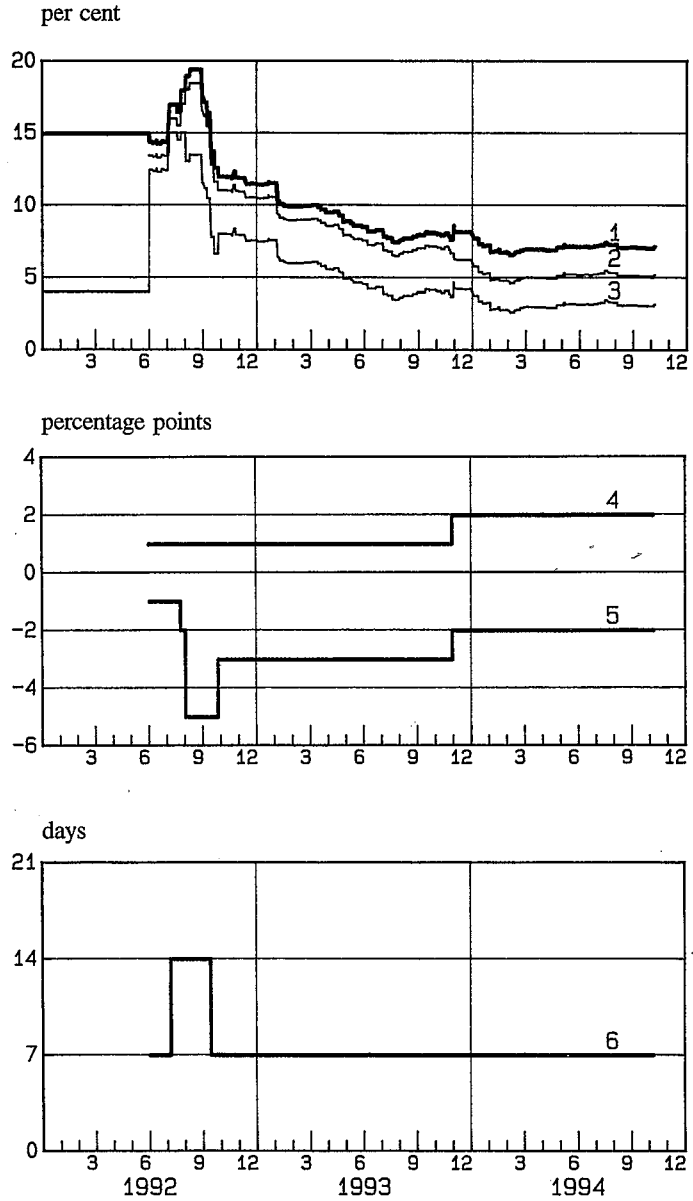
The liquidity facility was made available to banks entitled to central bank credit. In deciding the right to use the system, the Bank used the same criteria used in approving bank certificates of deposit for its money market operations; these are tied to a bank's operations as a counterparty in the Bank's money market operations. In brief, the requirements set by the Bank of Finland are as follows: the bank's equity must be at least FIM 200 million and its capital ratio a minimum of 8 per cent; the bank must act as a market maker for certificates of deposit; its risks must be monitored; it must undertake to redeem certificates of deposit in excess of the quota set by the Bank of Finland; and it must undertake to provide collateral as required by the Bank of Finland.

In autumn 1994, the Bank of Finland revised the terms on which a credit institution can open a BOF account and obtain central bank credit. All domestic and other credit institutions located in Finland which are subject under law to the minimum reserve requirement and have a BOF account may participate in the liquidity system. To open a BOF account, the credit institution must be supervised by a public authority and must meet the solvency and capital requirements.

Full collateral as determined by the Bank of Finland is always needed for a liquidity credit. A liquidity credit can be replaced by an equivalent liquidity repo deal, as prescribed by the Bank of Finland. An intra-day overdraft limit can also be granted on a BOF account, as long as the credit institution provides the collateral required by the Bank of Finland.

Chart 25.

### The Bank of Finland liquidity facility



- 1 Liquidity credit rate, %  
(call money credit rate prior to 3 July 1992)
- 2 Tender rate, %
- 3 Call money deposit rate, %
- 4 Spread between liquidity credit rate and tender rate,  
percentage points
- 5 Spread between call money deposit rate and tender rate,  
percentage points
- 6 Liquidity credit maturity, days

The terms of the liquidity system aim at minimizing banks' indebtedness to the central bank. This is why the interest rate on liquidity credit is higher than the market rates and the maturity is generally longer than for overnight money. Correspondingly, the call money deposit rate is lower than the market rates. In the call money facility, the credit and deposit rates were administered; in the liquidity system, they are linked to market rates via the Bank's tender rate. The liquidity system incorporates the right to make unlimited call money deposits with the Bank of Finland. The interest rate paid on these deposits is currently two percentage points below the Bank of Finland tender rate, and the rate charged on fixed-term liquidity credits is two percentage points above the tender rate. The maturity of liquidity credits, ie the length of the credit, can be 1, 7, 14, 21 or 28 days. Presently the maturity is 7 days.

The tender rate is determined in the most recent money market tender, scheduled at the discretion of the Bank of Finland. The one-month maturity is used in the competition; which may be a tender for tightening liquidity or a repo operation for easing it. The banks make bids by telephone to the Bank of Finland on prices and quantities. The tender rate is then the weighted average of accepted bids, expressed as an annual interest rate. The Bank of Finland can also arrange a (fixed-rate) tender in which the banks bid on quantities only; in this case, the tender rate is set by the Bank of Finland.

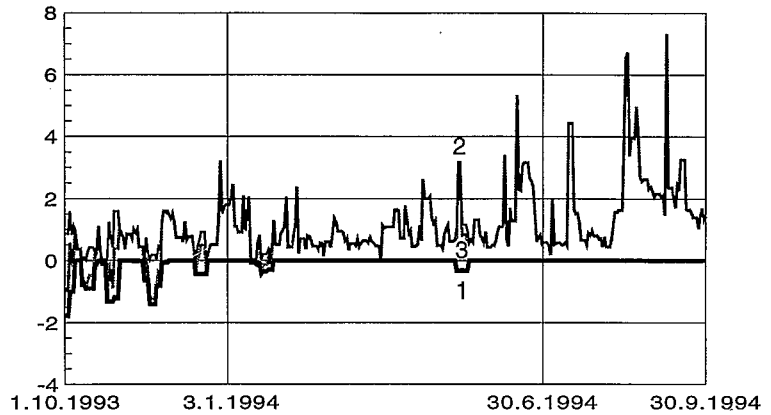
The parameters of the liquidity system are set so as to ensure that the whole banking system always has sufficient liquidity for its normal payment transactions, without weakening the Bank of Finland's control over interest rates. The aim is to avoid the necessity of always forcing banks to take liquidity credit when the Bank wants to influence the level of short-term market rates (Chart 26). This is difficult to achieve, because by tradition the Finnish banks have relied on the central bank as a source of liquidity. This dates from the time when the call money window was the only source of central bank financing.

Temporary liquidity discrepancies among banks' liquidity are evened out in the inter-bank market, which is also called the reserve market. Banks with a temporary deficit seek credit and those with a surplus offer it in return. Banks with a surplus have free reserves. In the reserve market, banks can minimize their expected liquidity costs on certain conditions. If interest is paid on free reserves, this encourages the banks to maintain larger reserves and the likelihood of reserve shortfalls decreases. Any increase in uncertainty about the adequacy of reserves has a similar effect.



Chart 26.

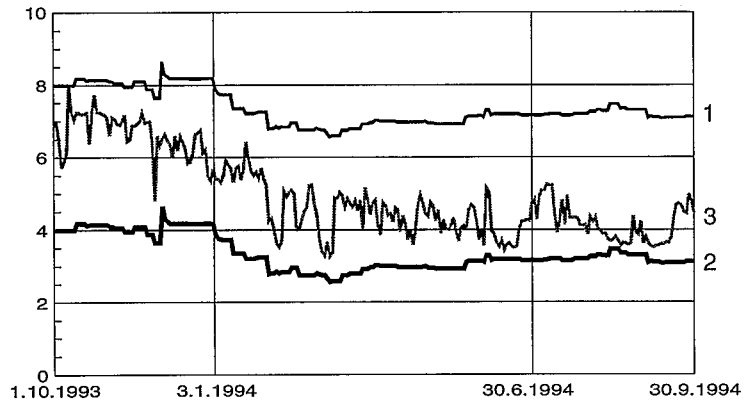
**Banks' liquidity position, billion FIM**



- 1 Liquidity credits
- 2 Call money deposits
- 3 Net

Chart 27.

**Short-term interest rates, %**



- 1 Interest rate on liquidity credit
- 2 Call money deposit rate
- 3 Inter-bank overnight rate

During the day, as the banks deal in the money market, they affect their own liquidity. The Bank of Finland influences the liquidity of the entire banking system through its money market operations. Ultimately, the reserves are evened out in the overnight market. When the banks' free reserves increase, the interest rate determined in this market approaches the rate on call money deposits (Chart 27). Similarly, the smaller the free reserves, and the more banks resort to

liquidity credit, the closer the rate on overnight money approaches the cost of liquidity credit.

The amount of the banking system's free reserves is reflected in market rates, though usually in a highly dampened manner, via inter-bank overnight rates. The banks' liquidity position acts as an indicator of short-term liquidity for the banking system. It has been characteristic of the Finnish money market that free reserves are distributed unevenly among the banks. The overnight market has not functioned ideally under all conditions. The Bank of Finland tender rate, introduced with the liquidity system, has reduced the importance of the overnight rate in the money markets.

### 4.3.3 The minimum reserve system

Because the average maturity of bank deposits has been shorter than that of bank loans, the banks must hold reserves adequate even to cover large withdrawals. The need for reserves, however, has decreased as a result of greater confidence in the central bank as a source of liquidity, development of the inter-bank reserve market, and borrowing from the public via the money market. As banks' liquidity reserves have been declining, the central banks in several countries have begun to require a certain minimum level of reserves. These required reserves ensure that the banks remain liquid, without endangering the stability of the financial system.

The reserve requirements set by central banks are also important in terms of monetary policy. By tightening and easing the requirement, the central bank can influence the banks' liquidity and therefore conditions in the financial markets. The system should also restrain credit expansion, because a portion of deposit growth must be placed with the central bank as reserve deposits and is not available for new lending.

The banks' reserve deposits at the central bank are usually either non-interest-bearing or bear interest at below-market rates. One of the functions of such mandatory reserves has been to maintain the central bank's profitability and ability to function, supplementing its income from the issue of banknotes.

In Finland, there has been a continuous cash reserve requirement only since 1979. The cash reserve system was based on an agreement between the deposit banks and the Bank of Finland. The agreement was amended several times, and its importance as an instrument of monetary policy has changed as the system of central bank financing has changed. In the era of quotas and graduated interest rates, a

change in the level of cash reserve deposits had a substantial effect on banks' liquidity and hence on the growth of lending. As the system of central bank financing developed, changes in the cash reserve requirement affected primarily the division of income between the Bank of Finland and the banks.

At the beginning of this decade, the importance of the cash reserve system for monetary policy was seen to be on the decline. As an ever larger share of the banks' financing was mediated off their balance sheets or by other financial institutions, opportunities to evade the cash reserve system increased. Secondly, a mandatory reserve requirement affects a bank's international competitiveness. This led to a global trend to reduce reserve requirements, and indeed some countries have already abandoned them.

In Finland, the cash reserve requirement was used most extensively in spring 1989, to curb credit expansion. The agreement then valid was extended up to the end of 1990. This supplementary agreement allowed the Bank of Finland to raise the cash reserve requirement to as high as 12 per cent. Deposits which exceeded the original 8 per cent maximum were non-interest-bearing. The additional deposits were bank-specific except for the cooperative and savings banks, which were treated as groups. Use of the supplementary cash reserve requirement depended on how much the bank's or group's loans had risen, and the supplementary agreement in fact aimed at restraining such expansion.

In June 1993, the Bank of Finland repaid the banks' cash reserve deposits and later terminated the cash reserve agreement. The reason was that the agreement called for a deposit rate of at least 8 per cent, and short-term market rates had fallen below that limit; the system thus worked contrary to its original aims.

Holding minimum reserves at the central bank was still considered a necessary tool of monetary policy, however, as it restrains growth in the money and credit supply and facilitates interest rate policy. Further it was often deemed appropriate to use reserves to channel any growth in the money stock — particularly that arising from an increase in foreign exchange reserves — into the central bank, by means of required reserves rather than open market operations. Termination of the old agreement quickly led to a statutory mandate of the system, as is the international practice. This was done by amending the Regulations for the Bank of Finland.

The legally-mandated minimum reserve system was introduced at the beginning of July 1993. Under the system, deposit banks and branch offices of foreign credit institutions, ie mandatory reserve holders, are required to place certain funds as a non-interest-bearing

minimum reserve with the Bank of Finland. The minimum reserve is calculated monthly, according to the reserve base on the last day of the calendar month. Mandatory reserve holders must make a deposit corresponding to their reserve requirement at the Bank of Finland by the last banking day of the following calendar month. If, in some month, a reserve holder's minimum reserve deposit exceeds the Bank of Finland's reserve requirement, the Bank returns the excess reserve by the last banking day of the calendar month following that in which the excess was recorded. Reserve holders must provide the Bank of Finland with a statement of their reserve base for each month by the 20th of the following calendar month.

The requirement cannot exceed 5 per cent of a mandatory reserve holder's total liabilities. The requirement is graduated according to the monetary aggregates used by the Bank of Finland; the more liquid the funding item the higher the required reserve ratio.

The reserve requirements applied to different liability items are as follows:

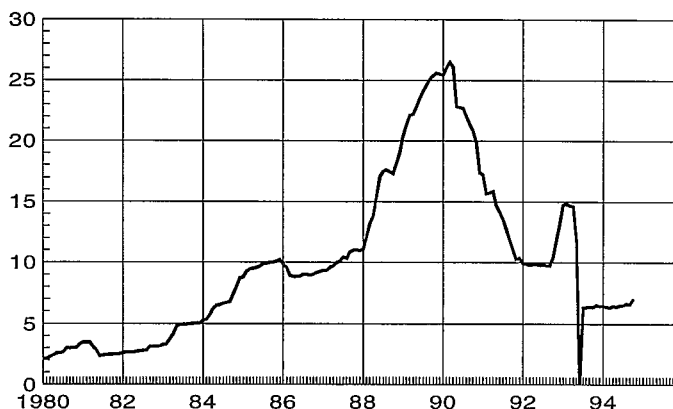
- a) 2.0 per cent for liquid deposits and term deposits with original maturity of less than one month
- b) 1.5 per cent for other deposits made by the public
- c) 1.0 per cent for other domestic liabilities.

The highest percentage applies to the narrow money aggregate, M1, the next applies to additional items included in the broad money aggregate, M2, and the lowest percentage applies to additional items included in the broadest aggregate, M3.

A 'deposit' means funds received from the public which must be paid back and which have been paid into an account meeting the general terms approved by the Financial Supervision Authority. 'Liquid deposits' means deposits which must be paid back entirely or partly upon demand.

A mandatory reserve holder is entitled to deduct the following asset items from the liability items referred to in point c) above: claims on other mandatory reserve holders, the mandatory reserve holder's markka-denominated certificates of deposit and bonds issued by other reserve holders and the mandatory reserve holder's Treasury bills and benchmark government bonds. The aim here is both to avoid double counting of the minimum reserve base and to promote development of the market for government debt.

Chart 28.

**Minimum reserve deposits\*, billion FIM**

\* Cash reserve deposits up to 31 May 1993

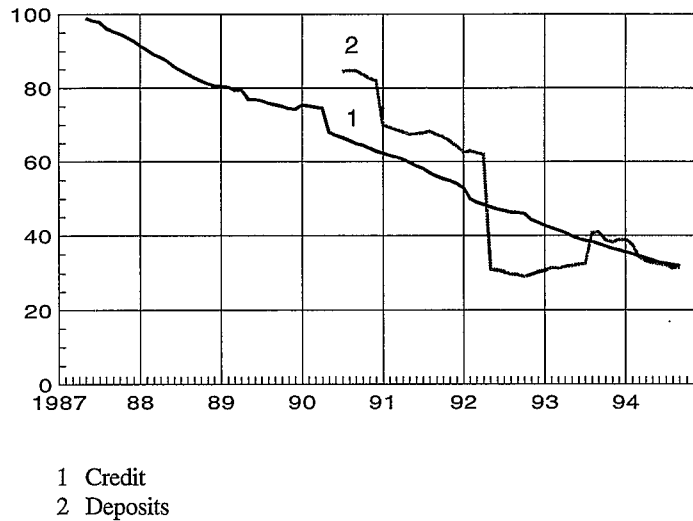
#### 4.3.4 The base rate

The base rate was originally the most important interest rate in respect to central bank financing. The Bank of Finland funded banks by rediscounting acceptances in the banks' portfolios. The lowest discount rate then used gradually evolved into a rate of interest for central bank quota credits granted at this 'basic' rate, and was subsequently called the Bank of Finland base rate. The importance of the base rate as an instrument of monetary policy first declined vis-à-vis central bank financing when the price of funding outside quotas became the most important way of regulating central bank financing. Later, when interest rate controls on bank funding and lending were removed, the base rate also lost its importance in the financial markets (Chart 29).

In the early years of the 1980s, the base rate was still one of the most important instruments of monetary policy along with the quantitative regulation of central bank financing. Regulation of the average interest rate charged on bank lending and tying of loans to the base rate guaranteed that any change in the base rate was immediately fully reflected in the interest rates on credit already outstanding as well as new loans. As the majority of bank funding comprised tax-exempt deposits subject to the banks' interest rate agreement, the rates of interest on funding also mimicked changes in the base rate.

Chart 29.

**The proportion of the stock of bank deposits and credit tied to the base rate, %**

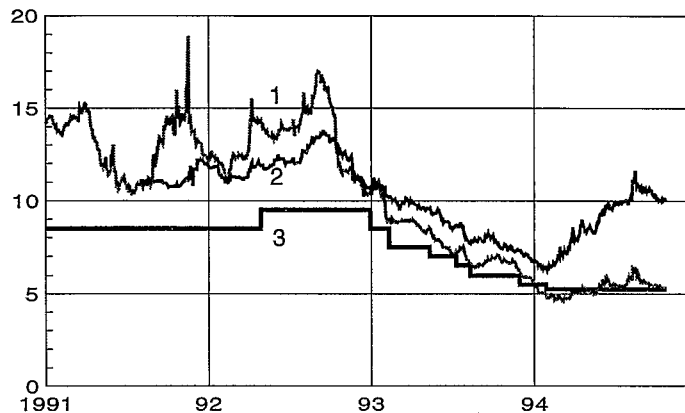


Since the beginning of the 1980s, the base rate has been declining in importance, mainly because of changes on financial markets but also because of base rate policy. The rapid growth of foreign financing and of banks' domestic funding on market terms, parallel to conventional borrowing tied to the base rate, is the most important reason for the decline in the significance of the base rate. When the proportion of bank funding tied to the base rate started to fall towards the end of the 1980s, the banks increasingly chose to employ market reference rates in their markka lending, in order to minimize their interest rate risk. Late in the 1980s, the base rate did not rise as much or as fast as market rates, meaning that the banks' interest rate risks were materialized. The rigidity of the base rate relative to market rates accelerated the transfer to market rates in both funding and lending. In 1990, the interest paid on cash reserve deposits at the Bank of Finland was tied to the HELIBOR instead of the base rate in order to reduce the base rate risk. The proportion of markka-denominated lending and funding tied to the base rate fell sharply in the late 1980s and early 1990s.

At the end of 1992, base rate policy was revised, and subsequently the base rate has been changed much more often than before and the changes have been very small (e.g. 0.25 percentage points, Chart 30). The sharp fall in market rates which began at the end of 1992 has facilitated a more flexible base rate policy.

Chart 30.

### The base rate and short- and long-term market rates, %



- 1 3-month HELIBOR
- 2 Yield on 10-year government bonds
- 3 Base rate

The importance of the base rate as an instrument of monetary policy depends fundamentally on how widely it is used in the financial markets. According to the law on tax relief for deposits and bonds, the last tax-exempt fixed-term deposits tied to the base rate will mature at the end of 1997. At the end of 1993, these deposits accounted for about two-thirds of all deposits tied to the base rate. After 1997, the base rate will be of little importance in respect of deposit rates. Some 6 per cent of the banks' new markka lending was tied to the base rate in 1993. If the proportion remains this low in the near future, the base rate's role as a reference rate for total markka lending will continue to decline. Thus, it seems the base rate will continue to decline in importance as an instrument of monetary policy.

Decisions concerning the base rate are taken by the Parliamentary Supervisory Board. Even if the direct effect of the base rate on financial markets diminishes, the rate itself will continue to be of interest in terms of monetary policy. A change in the base rate will still be seen as an indicator of the stance of monetary policy.

## 4.4 Domestic money market operations and interventions in the foreign exchange market

### 4.4.1 Domestic money market operations

The Bank of Finland affects short-term money market rates and regulates day-to-day liquidity in the money market through its operations on the money and foreign exchange markets. Operations in the domestic money market began in December 1986. At first, these operations comprised the auctioning of term loans and deposits. From early 1987 onwards, money market operations were increasingly based on direct trade in CDs issued by the banks or the Bank of Finland.

Tenders have become more and more common in the Bank of Finland's market operations. Repos (securities deals under repurchase agreements) are employed in operations aimed at increasing liquidity, and tenders — in which the Bank of Finland sells its own or bank CDs — in operations aimed at decreasing liquidity. Repo transactions usually involve CDs issued by other banks entitled to central bank financing.

Money market operations also include direct dealing, which comprises the sale and purchase of securities and, to a lesser degree, 'depo' deals of less than one month maturity. These contracts are time deposits or credits whose value date is generally the same as in other money market transactions. In exceptional cases, overnight deposits can be made, with a value date the same as the contract date.

The Bank of Finland is active in the money market throughout the day and can intervene at the maturity of its choice as it sees fit. The Bank of Finland deals on the basis of bids or offers made by the banks. Tenders can also be arranged as fixed-rate tenders in which the Bank of Finland sets the acceptable interest rate.

The maturity of market operations is usually one or three months. From time to time, the Bank of Finland has dealt directly in 12-month maturities. In tenders, maturities range from one day to two months. The Bank of Finland tender rate, which is applied in the liquidity system, is determined in one-month tenders.

Market operations affect the liquidity of the banking system as follows. When the Bank of Finland buys CDs from the banks, bank liquidity increases. Correspondingly, when it sells bank CDs or issues its own, bank liquidity decreases. The main purpose of direct deals, however, is not to affect bank liquidity but to directly control the level of market interest rates. The Bank of Finland tries to affect a particular maturity, the three-month market rate, but it may also target the one-



month and (rarely) 12-month rates. Direct deals are made in the maturity the Bank aims to affect. Liquidity operations are generally carried out before noon by means of tenders.

Planning of the Bank of Finland's money market operations is based on its immediate interest rate, liquidity and exchange rate targets as well as daily forecasts of banking system liquidity. The liquidity forecasts take account of maturing money market and forward exchange deals, changes in the amount of banknotes in circulation, the central government's payments abroad, changes in the minimum reserve deposits and other changes in the Bank of Finland balance sheet. Seasonal fluctuations are not relevant to liquidity forecasts, except in respect of notes held by the public. The Bank of Finland's liquidity forecast for the money market value date is made available to the banks. A substantial proportion of all operations stems from the need to roll over maturing deals and sterilize foreign exchange interventions (including drawings of government loans and amortizations), ie to eliminate their effects on domestic liquidity.

The Bank of Finland's systems are central to the operations of the interbank market. Trading on this market is regulated by the money market rules and code of conduct, observance being supervised by the Bank of Finland. Although the Bank of Finland deals in markets which it supervises, it is not a participant as such. The Bank of Finland deals on the basis of other players' quotations and is not in the market for financial gain but because it is necessary for the implementation of monetary policy. Thus, as it knows the markets well, is always present and is a neutral body, it can effectively supervise interbank market operations for compliance with agreed rules.

The money market rules cover the operations of market makers. A bank which acts as a market maker is required to give other market makers and the Bank of Finland binding two-way price quotations for traded instruments. Only a market maker that is active in trading can be accepted as a counterparty for a Bank of Finland market operation. The code of conduct sets out the rules concerning, inter alia, the opening times of the market, trading and deliveries. The interval between the trade date and the value date is the same in the money market as in the foreign exchange market, two days. Binding two-way quotations must be given for trading lots of at least FIM 20 million. The code also sets the market hours, which are generally from 10 am to 3 pm, except on Fridays, when the money market closes at 1 pm. In practice, trading on the money market continues until 4 pm, except on Fridays.

Chart 31a.

**Money market operations, billion FIM  
( + increases liquidity)**

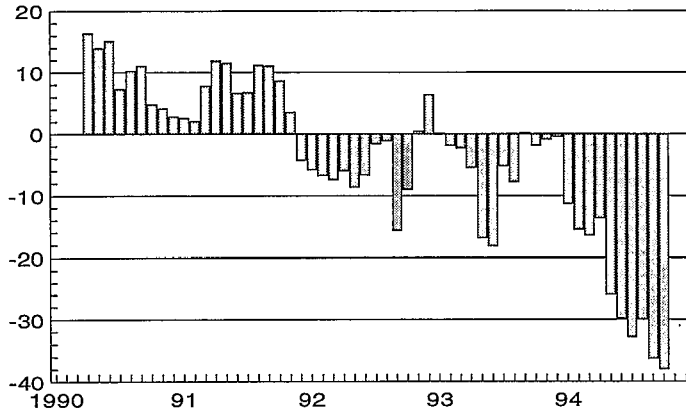
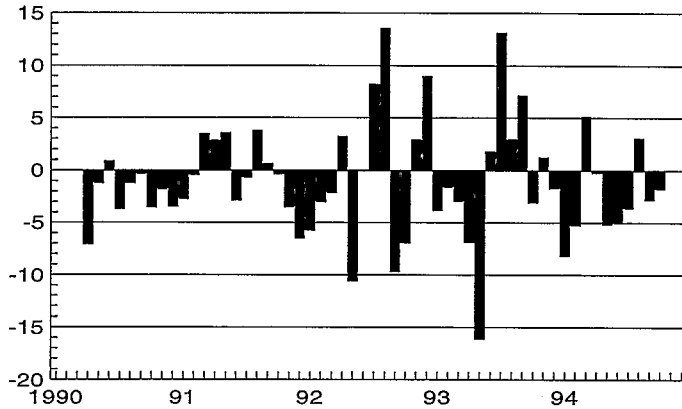


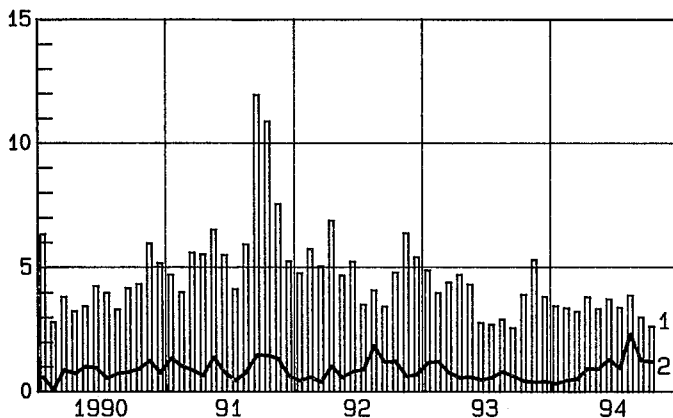
Chart 31b.

**Money market operations less maturing deals,  
billion FIM ( + increases liquidity)**



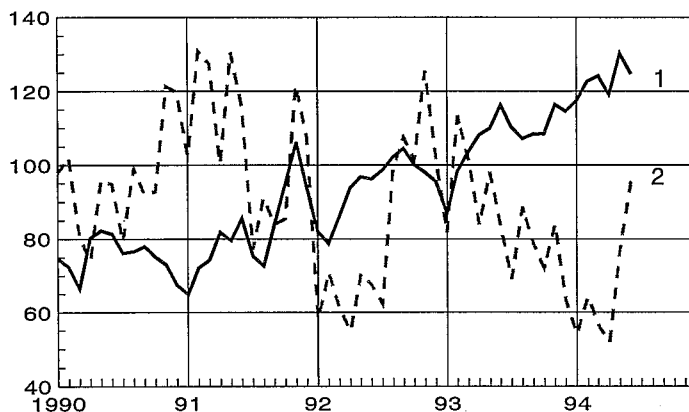
The Bank of Finland does not try to influence the shape of the money market yield curve directly, but instead sets immediate targets for one and three-month interest rates. The Bank does not try to affect bond yields. Generally, the experience of central banks in this regard has been discouraging. The yield curve is, however, an important monetary indicator for the Bank of Finland.

Chart 32a. **Turnover on the money market, daily average, billion FIM**



- 1 Purchases of CDs and deposits made
- 2 Purchases of forward rate agreements

Chart 32b. **Money market instruments outstanding, billion FIM**



- 1 CD stock, incl. Bank of Finland issues
- 2 Forward rate agreements outstanding, incl. customer deals

Generally, no specific target is set for banking system liquidity. The aim has been to influence the amount of the banks' free reserves, ie call money deposits, through liquidity system parameters, in order to allow the Bank of Finland to control interest rates without having to tighten banks' liquidity and forcing them to go to the liquidity credit window. This goal has been achieved only in part because, for

instance, the banks became accustomed to routine use of central bank financing in the mid-1980s, when the call money facility was in effect.

The Bank of Finland's open market operations differ from the practice of central banks in many other countries. This is due to the fact that there has been a structural surplus in the Finnish market for central bank financing, ie an excess supply of central bank financing. This is reflected in the financial relationship between the Bank of Finland and the banks, in that the Bank of Finland has become indebted to the banks and so has constantly needed to tighten liquidity. The problem derives from the Bank's balance sheet structure. The non-interest-bearing liability items, ie the amount of notes, equity capital and minimum reserve deposits, are small compared to total assets.

A structural deficit is typical of central bank financing in many countries in that there is excess demand for central bank financing. This means that there is always a demand for liquidity, which is typically tied to the central bank. Thus, intervention is generally a question of how much of the liquidity deficit the central bank should cover. In such a system, open market operations aimed at the level of liquidity need be conducted only a few times a month at most, and daily interventions can focus on fine tuning.

Through its intervention in the domestic money market, the Bank of Finland affects not only domestic interest rates but also the differential between domestic and foreign interest rates and hence capital movements and the foreign exchange rate. A wider interest rate differential attracts foreign capital into the country and a narrowing of the differential reduces capital imports. Net capital imports are also influenced by intervention in the foreign exchange market and by exchange rate policy.

#### 4.4.2 Interventions in the foreign exchange market

The central bank can also affect banks' liquidity through its operations in the foreign exchange market. However, regardless of whether the exchange rate system is based on fixed or floating rates, foreign exchange intervention aims primarily at influencing exchange rates.

In a fixed exchange rate environment, disturbances in the foreign exchange market are reflected as fluctuations in the foreign exchange reserves. In a floating exchange rate system, the central bank can, in principle, channel the effects of capital movements as it chooses into either the foreign exchange reserves, the domestic interest rate level or the exchange rate. In practice, the exchange rate is not allowed to fluctuate too much over the short term without offsetting action by the central bank, as such fluctuations can increase market uncertainty.

Fixed-rate systems usually allow for some flexibility, as, for example, a fluctuation range, as was the case in Finland until recently. Thus, market pressures were sometimes partly reflected as changes in foreign exchange reserves, but they also could show up as changes in exchange rates. On the other hand, market interventions had to be gauged in such a way that the exchange rate stayed inside the fluctuation range. In most floating rate systems, including Finland's, the central bank has been very active in offsetting extreme fluctuations in the foreign exchange market.

The Bank of Finland participates, ie intervenes, in the foreign exchange market by buying or selling foreign exchange on its own initiative. The countercurrency in intervention is always the markka. In the last few years, the deutschmark has become established as the intervention currency. The Bank of Finland approves as counterparties banks which act as market makers for the markka in the foreign exchange market, ie which are able to give binding two-way quotations on traded currencies. Late in 1994, there were seven banks which had been accepted as counterparties. Foreign exchange deals are made with all counterparties at the same time, as far as possible.

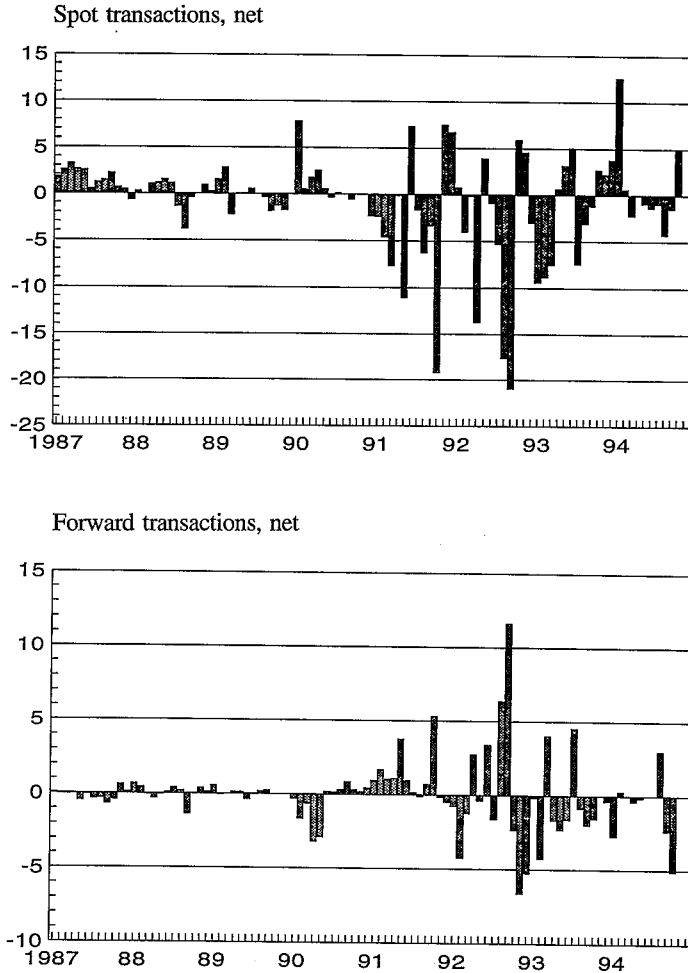
The volume of transactions between the central bank and foreign exchange banks is increased by the tendency of exchange rates to fluctuate due to the thinness of the domestic market and also by the fact that banks have been allowed to hold only very small open foreign exchange positions vis-à-vis the markka. A bank's total foreign exchange risk against the markka may therefore not exceed its bank-specific limit as set by the Bank of Finland. This regulation is aimed at limiting banks' foreign exchange risk.

The foreign exchange market involving the Bank of Finland and the banks opens daily at 10 am and closes at 4 pm, except on Fridays, when it closes at 1 pm. At 12 noon each business day, the Bank of Finland publishes for the benefit of the market averages of the buying and selling rates, ie middle rates, for 22 currencies. In foreign exchange deals between the banks and companies or the central bank, the rates change all the time, however, because of movements in international foreign exchange markets. The markka rates of other currencies are determined on the basis of the current markka rate for the deutschmark and the international cross-rates.

The banks also publish daily reference rates for the public based on the Bank of Finland middle rates. The banks can set their own margins on buying and selling rates. The banks also publish two-way rates for banknotes. The quotations are usually in force until the following publication of rates and apply to small foreign exchange deals between banks and their customers.

Chart 33.

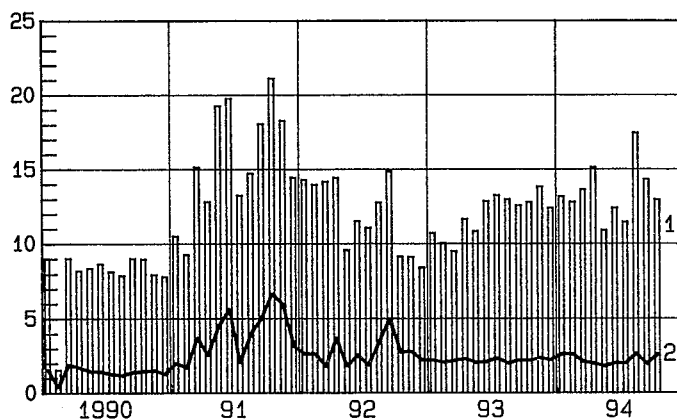
**Intervention in the foreign exchange market,  
billion FIM**



Although the Bank of Finland participates in the foreign exchange market, the rates are largely determined by market forces. The Bank of Finland strives to influence exchange rates to a varying degree, depending primarily on market conditions, but also on its monetary objectives. Towards the end of the 1980s and even in 1990, for example, the central bank's involvement in the foreign exchange market was fairly minor, but in the last few years the Bank has been very active. In 1991-1992, the Bank of Finland defended the fixed rate with massive sales of currency. The Bank was still selling currency in the early stages of the float and again particularly in the first few months of 1993. Then at the beginning of 1994, the Bank restrained the rapid appreciation of the markka by buying foreign exchange (Chart 33).

Chart 34.

### Turnover on the foreign exchange market, daily average, billion FIM



- 1 Purchases and sales of spot currencies
- 2 Purchases and sales of forward currencies

Foreign exchange intervention takes the form of either spot or forward transactions. Spot transactions are purchases or sales at the rate prevailing at the time of the deal, with delivery in two business days, as is the international practice. In forward transactions, currencies are delivered on an agreed future date at the forward rate valid at the time of the agreement. In the following, we first look at spot transactions.

As noted above, the primary aim of spot transactions is to influence exchange rates, although intervention affects liquidity in the same way as domestic money market operations. When, for instance, the Bank of Finland buys foreign currencies, foreign exchange reserves increase and the banks' liquidity position eases. In spot transactions, the effects become apparent on the value date, ie two business days after the deal. In practice, however, the central bank generally sterilizes the liquidity effects of intervention, in other words, the effects are offset by means of domestic money market operations. As seen in Chart 35, the effect of Bank of Finland foreign exchange interventions on bank liquidity has been largely offset by money market operations, particularly since 1993.

Let us examine the situation in late 1993 and early 1994, a time when foreign exchange reserves started to grow rapidly. The reason for the growth was, first, increased export revenues thanks to good price competitiveness and, secondly, the heavy inflow of foreign currency, which in turn resulted from portfolio investments and sales of





Finnish bonds abroad. The central government's capital imports had a similar effect. These, like government capital exports, go through the Bank of Finland balance sheet because the State Treasury does not have foreign exchange deposits in Finland. As a result, the banks' liquidity position eased and market rates fell. To slow down the rapid appreciation of the markka, the Bank of Finland bought large amounts of foreign currency, especially in January 1994. The fall in domestic market rates and the narrowing differential vis-à-vis foreign rates, together with the fact that short-term interest rates dropped below the German level, reduced the inflow of foreign currency and evened out the growth in foreign exchange reserves (Chart 19). However, later in 1994, with the continued inflow of capital, reserves grew further and the markka strengthened considerably during the second half of the year.

The central bank can thus affect exchange rates, market interest rates and capital movements through intervention in domestic financial markets and in the foreign exchange spot market. It can also deal in forward currencies.

The Bank of Finland can influence foreign exchange reserves and the exchange rate, and thus the banks' liquidity and domestic market rates, through forward transactions, ie by either selling or buying currencies in the forward market. For instance, by buying foreign currency from banks in the forward market, the growth in foreign exchange reserves can be reduced by the corresponding amount, and the exchange rate will tend to weaken. At the same time, this prevents bank liquidity from growing and puts upward pressure on interest rates. By selling foreign currency in the forward market, the central bank can obtain indirect foreign financing of foreign exchange reserves, in the form of foreign cover loans taken by the banks.

Because of the foreign currency positions set for the banks, central bank intervention in the forward market in principle produces an inflow or outflow of capital to an equivalent amount. This is ensured in practice by the fact that forward transactions with central banks are generally in the form of swap deals, ie a simultaneous foreign currency transaction to an equivalent amount, in the opposite direction, is carried out on the spot market. The foreign exchange risk incurred by the banks in the intervention operation is thus covered in the swap market. If the central bank buys forward currency, the banks have to buy spot currency from the central bank and make a foreign deposit to the corresponding amount; this initially drains the banks' liquidity. When the forward contract matures, the original position is reinstated.

The Bank of Finland withdrew from the forward market in convertible currencies in 1980 but returned in 1984 to buy forward

currency from the banks. Prior to this, in 1982, it carried out a number of transactions mainly to test the market. The Bank of Finland's stock of forward purchase agreements, which peaked at FIM 20 billion early in 1985, matured almost entirely by the end of 1986. The Bank of Finland intervened very little in the forward market in the late 1980s, but in 1990 it increased its holdings of forward purchase agreements. Since 1991, the Bank of Finland's forward position has been on the selling side (Chart 19).

By controlling its forward position, the Bank of Finland can affect the level of foreign exchange reserves on its balance sheet, and thus the pressure on the exchange rate, flexibly and at its chosen maturity. The fact that the Bank's forward position used to be published with a lag made this effect even stronger. On the other hand, the market has at times been well aware of the central bank's position, thus reducing the efficacy of its forward transactions. This is also why the 'broad' foreign exchange reserves, which include both reserves on the balance sheet and the Bank of Finland's forward position, became an important indicator.

Because of closer linkage between the markets, the central bank's operations in domestic financial markets and in the spot currency market have had increasingly symmetrical effects. With the exchange rate floating and capital moving freely from country to country, the liquidity, interest rate and exchange rate effects of these operations are largely similar. Central bank transactions on forward exchange markets hence have no notable effect on these variables. One reason for this is that a purchase of forward currency by the central bank corresponds to a sale of spot currency or certificates of deposit at the same time and in the same amount or to some other similar transaction in domestic financial markets. In sterilized currency market intervention of this kind, the effects of the two-way transactions tend to cancel each other out. However, intervention in the forward market can be a flexible means of dampening fluctuations in the foreign exchange reserves and of influencing market expectations.

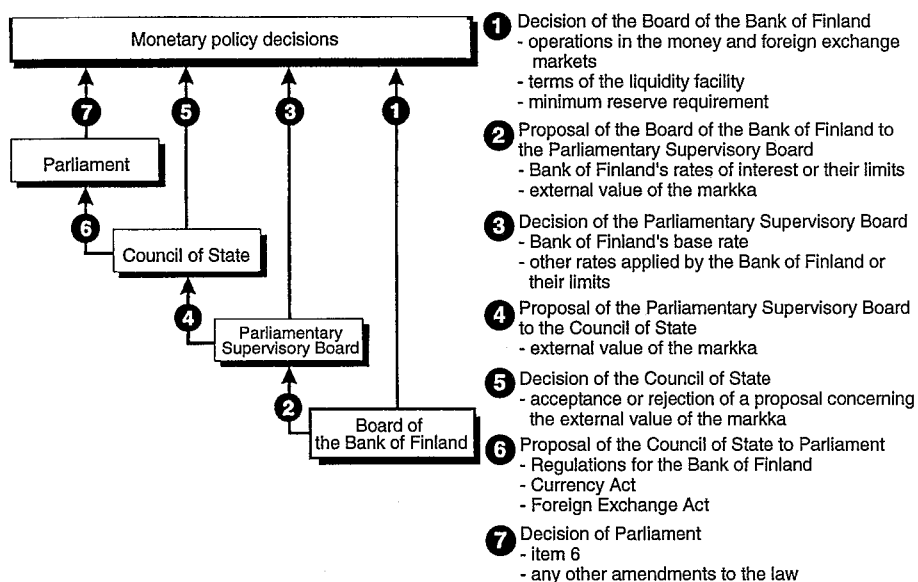
## 4.5 How monetary policy decisions are made

It was noted earlier that monetary policy is a part of Finnish economic policy along with fiscal and incomes policy. Decisions on monetary policy are taken by the Parliamentary Supervisory Board, the Board of the Bank of Finland, the Council of State or Parliament.

According to the Constitution, the Bank of Finland operates "under the guarantee and care of Parliament". The administration and management of the Bank are supervised by the nine members of the Parliamentary Supervisory Board. The most conspicuous task of the Parliamentary Supervisory Board is to determine the Bank of Finland's base rate on a proposal of the Bank's Board. The same procedure is observed when decisions are taken on other interest rates applied by the Bank or on their limits.

The Parliamentary Supervisory Board sets limits for liquidity interest rates vis-à-vis the market rate and determines other rates of interest applied by the Bank of Finland. The Parliamentary Supervisory Board decides on borrowing abroad by the Bank of Finland, confirms the division of responsibilities of the members of the Bank's Board, and appoints directors, branch managers and members of the Board of the Financial Supervision Authority.

Chart 36. Monetary policy decision-making



The Board of the Bank of Finland comprises the Chairman (Governor) and a maximum of five members, all of whom are appointed by the President of Finland for an indefinite period of time by an open letter of appointment. The Board has general decision-making powers, that is, it decides on all matters which have not been expressly entrusted to the Parliamentary Supervisory Board. The Board decides, for instance, on the intervention principles for money and foreign exchange markets within the limits concerning interest rates set by the Parliamentary Supervisory Board, the minimum reserve requirement, liquidity credit interest rates, special financing arrangements and foreign exchange regulations. The importance of monetary policy decisions for economic policy, together with the highly independent status of the Board, mean that the Board plays a central role in Finnish economic policy.

The Bank of Finland cooperates closely with the Government, especially the Ministry of Finance, although the Bank is formally independent of the Government. Monitoring the economic situation and economic policy and coordinating monetary and fiscal policies require continuous contacts. Changing the fluctuation limits of the markka's external value or deciding not to observe them for a time is the most important matter demanding collaboration between the Bank of Finland and the Council of State, both formally and in practice. A proposal on these matters is made by the Parliamentary Supervisory Board upon the recommendation of the Bank's Board. The Council of State must in turn either approve or reject the proposal.

Parliament participates in monetary policy through its decisions regarding legislation on monetary policy and policy framework. It passes certain Government bills on legislation pertaining to the Bank of Finland and financial markets, such as the Currency Act, the Regulations for the Bank of Finland and the Foreign Exchange Act. Parliament played a central legislative role when, for example, the cash reserve agreement made with the banks was replaced in 1993 by the minimum reserve system, in that it passed a law amending the Regulations for the Bank of Finland. The Economic Committee deals with matters concerning the Bank of Finland which come before Parliament. It makes the necessary proposals and prepares Government bills concerning the Bank.

A committee was set up to study necessary amendments to legislation concerning the Bank of Finland. It has made a proposal on how the present legislation should be revised to conform to the institutional changes required by Finland's participation in the EMU process. These revisions are discussed in more detail in Section 5.

## 4.6 Bank of Finland information policy

The transformation of financial markets from regulated to market-based has increased the importance of information in terms of both inter-bank competition and the functioning of financial markets. Market participation is based on expectations of the future, and all possible data on economic trends and central bank measures are utilized in formulating these expectations.

When the markets have more information at their disposal, they operate more efficiently. All participants should have equal standing as regards information. An open information policy promotes competition on financial markets. Open information on the stance of monetary policy and any changes therein and on planned measures also helps to attain policy objectives. Awareness of the Bank of Finland's market operations and of the reasons behind them promotes interbank markets and reduces unnecessary interest and exchange rate fluctuations.

The publication of information about measures taken by the Bank of Finland is closely linked to monetary policy objectives. In a fixed exchange rate regime, it is justified to delay the release of information on, say, foreign exchange operations. The Bank of Finland's forward currency position has been published with a time-lag of slightly over a month. In a floating exchange rate regime, a more open information policy is possible. Foreign exchange operations, for instance, tell the markets which way the Bank of Finland wants exchange rates to move.

The Bank of Finland handles a great deal of data which is referred to as 'insider information'. This involves not only information connected with the preparation of policy and its implementation but also statistical data eg on individual banks. Staff dealing with confidential and secret information are subject to the law in general and also to the Bank of Finland's own regulations on insider information. In such matters and in questions concerning the publication of information, the Bank cooperates with other authorities such as Statistics Finland, the Customs and the Ministry of Finance.

The Bank of Finland publishes statistical data on financial markets each month in the trilingual review called *Financial Markets*, and in the English-language publications *Main Indicators for the Finnish Economy* and *Bank of Finland Bulletin*. Data on the balance of payments are also published in three languages in the monthly *Balance-of-payments statistics*. The Finnish-language quarterly review *Markka & talous* includes charts on financial markets.

The main content of the *Bulletin* and *Markka & talous* comprises articles on economic developments in Finland and on the official

stance of monetary policy, its implementation and objectives. The most important article in these reviews is the quarterly 'Recent Economic Developments and Monetary Policy', approved by the Board of the Bank of Finland. The Bank of Finland Year Book is a report on operations and includes a summary of matters related to the Bank's operations during the year in question. The Parliamentary Supervisory Board also submits an annual report to the Economic Committee on the Bank's operations. Other Bank of Finland publications include discussion papers, economic studies, articles, and lecture texts.

Financial institutions receive circulars from the Bank of Finland on measures that concern them. The content of these circulars is also published immediately in public press releases. The Bank publishes foreign exchange regulations, which presently deal mainly with collection of data from banks and companies which is needed for balance of payments purposes.

Like other central banks, the Bank of Finland publishes information on its most important operations, systems and measures via electronic market information systems. For about ten years now, the Bank of Finland has published information pages on Reuters and Telerate. Liquidity forecasts concerning the banking system and the parameters of the liquidity system in effect at the time are the most important information published in these media. The floating of the markka has prompted the publication of more information on monetary policy indicators than before.

The Reuters and Telerate systems run the following pages updated by the Bank of Finland:

SPFB/8609	Key interest rates
SPFC/8608	Weekly balance sheet
SPFD/8610	Information page
SPFE/20981	Interbank markets
SPFF/20979	Balance of payments
SPFG/8611	Monetary policy indicators
SPFH/8609	Money market liquidity
SPFI/20981	Benchmark government bond market
SPFJ/8611	Interest rates on markka credits and deposits
SPFK/20980	Bond forwards market
HELX/8607	Middle rates at 12 noon

Table 7.

### Bank of Finland money market pages on Reuters and Telerate

Page RSF:SPFB					
Tue Nov 29 13:22 Reuter Selectfeed Service					
1104	BANK OF FINLAND HELSINKI TEL 90-1831			SPFB	
HELIBOR	BASE RATE		01.02.94	5.25	
29.11.94					
	LONG TERM MARKET RATE 3 YEARS 5 YEARS				
IM	5.04	OCT 94 AVERAGRE	9.5	10.5	
2M	5.13				
3M	5.31	CURRENT TENDER RATE	TR	5.02	
6M	5.95	CALL MONEY DEPOSIT	TR	-2.0	
9M	6.43	LIQUIDITY CREDIT	TR	+2.0	
12M	6.75	MATURITY OF CREDIT			7 DAYS

Source: Reuters

Page RSF:SPFH					
Tue Nov 29 13:23 Reuter Selectfeed Service					
0816	BANK OF FINLAND HELSINKI TEL 90-1831			SPFH	
ITEMS AFFECTING MONEY MARKET LIQUIDITY, MILL. FIM					
BANKS DAILY POSITION		DEPOSIT	LIQ.CREDIT		
28.11		1477	0		
LIQUIDITY ESTIMATE		01.12.	1600		
ACCEPTED BIDS-/OFFERS+/TENDER				5.02	
ACCEPTED BIDS/WEEKLY REPO		29.11.	350	4.50	

Source: Reuters

Page TELE: 8609					
29/11	11:22	GMT	BANK OF FINLAND-HELSINKI TEL:90-1831		PAGE 8609
			MONEY MARKET INFORMATION		29/11 11:04 GMT
HELIBOR					
UPDATED	29/11	BASE RATE	01.02.94	5.25	
1 KK	5.04	LONG TERM MARKET RATE	3 YEARS	5 YEARS	
2 KK	5.13	OCT 94 AVERAGE	9.5	10.5	
3 KK	5.31				
6 KK	5.95	CURRENT TENDER RATE	5.02		
9 KK	6.43	CALL MONEY DEPOSIT	-2.0		
12 KK	6.75	LIQUIDITY CREDIT	+2.0		
		MATURITY OF CREDIT	7 DAYS		
ITEMS AFFECTING MONEY MARKET LIQUIDITY					
BANKS DAILY POSITION, MILL FIM		28.11.94		DEP 1477	CRED 0
LIQUIDITY ESTIMATE		01.12.94	1600		
ACCEPTED BIDS-/OFFERS+/TENDER				5.02 PCT	
ACCEPTED BIDS/WEEKLY REPO		29.11.94	350	4.50	
TELEPHONE + 358-0-1831					

Source: Telerate

The pages comprising the Bank of Finland's general statistical data are those on the Bank's own rates and the reference rates (SPFB), on the daily exchange rates and indices (HELX) – these two are on Telerate pages 8607 and 8609 – the main items in the weekly Bank of Finland balance sheet (SPFC, 8608), the main items in the balance of payments (SPFF, 20979), the inflation trend, monetary aggregates, and markka deposits and credits (SPFG, 8611), and the corresponding interest rates (SPFJ, 8611). The monetary aggregates and credit and deposit interest rates are published on the fourth business day of each month. The publication date for inflation figures is the 15th of the month. Balance of payments data are published during the last week of each month at 10 am. A more detailed publication timetable is given in the Balance of Payments Statistical Bulletin.

The page directly related to market operations is the one on money market liquidity and accepted bids and offers in liquidity credit tenders (SPFH, 8609), which also contains the weekly repos.

Pages describing the daily trading on money and bond markets and the interest rates used are those on the interbank market (SPFH, 8609) and on the benchmark government bond market (SPFI, 20981). There is also a page on bond forward contracts (SPFK, 20980).

There is also a Bank of Finland information page (SPFD, 8610) on which decisions on monetary policy and changes in the Bank's procedures are announced.



## 5 Monetary integration in Europe and the Bank of Finland

The economic and monetary integration of postwar Europe goes back several decades. The cornerstone in this process was the Treaty of Rome, which established the European Economic Community (EEC) in 1957. In 1979, the European Monetary System (EMS) Agreement between the central banks of the EC member states came into force, setting up a system of fixed exchange rates and obliging the central banks to cooperate with each other. The Exchange Rate Mechanism (ERM), which is part of the EMS, defines the parities and fluctuation ranges of the currencies of participating states. In Maastricht in 1991, the EC countries took a further step when they agreed to move toward economic and monetary union (EMU). The Treaty officially came into force at the end of 1993, when the European Community became the European Union (EU).

EMU is to come about in three stages. During the first stage, which began in July 1990, the central banks of the EC countries sought to further their cooperation in the field of monetary policy by setting up a committee of Governors. The committee also prepared the way for the later stages. The Bank of Finland has been kept informed of the committee's preparations for EMU and of its decisions.

During the current second stage, which began on 1 January 1994, EU member states are further intensifying their economic cooperation in order to prepare the ground for economic and monetary union proper. Regarding monetary policy, this enhanced cooperation is seen in the establishment of the European Monetary Institute (EMI) at the beginning of 1994. The EMI, initially based in Basle, moved to Frankfurt in November 1994. The Institute's objective is to promote the coordination of member states' economic policies and prepare for the establishment of a joint central bank for the Union.

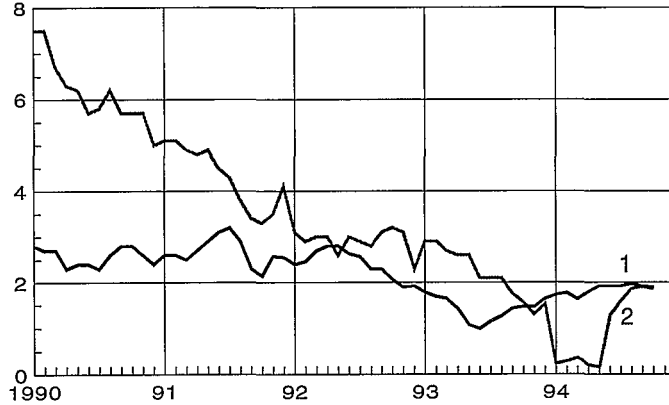
The third stage, leading to full EMU, is scheduled to commence some time between the beginning of 1997 and the beginning of 1999. According to the Maastricht Treaty, this stage will be initiated only if a sufficient number of member states meet the EMU criteria laid down in the Treaty protocol:

- inflation: not more than 1.5 percentage points above the average inflation of the three countries with the lowest rates of inflation
- public debt: not more than 60 per cent of gross domestic product

- public deficit: not more than 3 per cent of gross domestic product
- long-term interest rates: not more than 2 percentage points higher than the average for the three countries with the lowest rates of inflation
- stability of currency: the country's exchange rate must have remained stable for the last two years.

Chart 37.

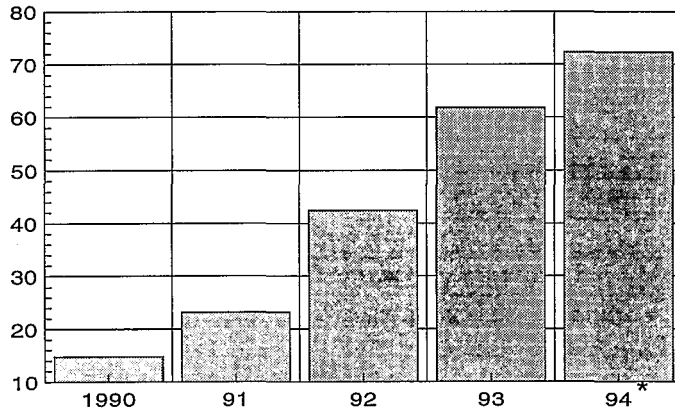
**Inflation, 12-month trend in consumer prices, %**



- 1 Average rate of inflation in the three EU countries with the lowest inflation
- 2 Finland

Chart 38.

**General Government debt, % of GDP**

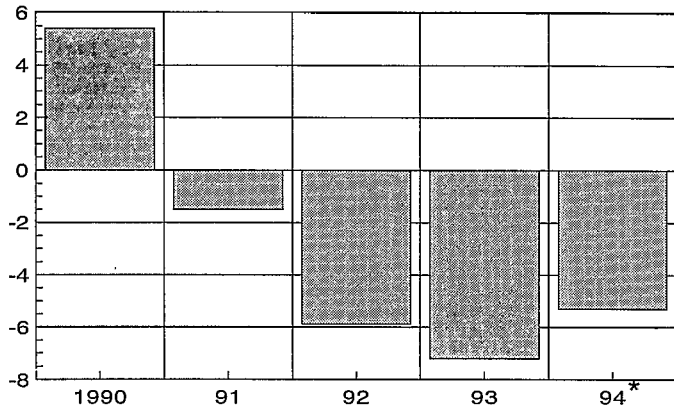


\* Forecast

According to Charts 37–40, Finland, like many EU countries, has a high level of general government debt, currently clearly above the ceiling. The deficit also needs to be reduced significantly. At the beginning of 1994, Finland met the criteria for consumer prices and long-term interest rates. Currency stability in Finland, as in many other countries, is a problematic issue and to some extent open to interpretation.

Chart 39.

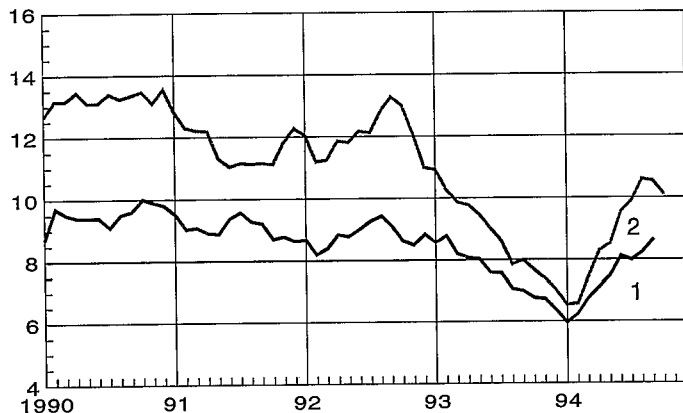
**General Government deficit, % of GDP**



\*Forecast

Chart 40.

**Long-term interest rates, %**



- 1 Average interest rate in the three EU countries with the lowest inflation
- 2 Finland (5 to 10 year interest rates)

The European Central Bank (ECB) will start operating at the beginning of the third stage; together with the national central banks, it will form the European System of Central Banks (ESCB). The purpose of the ESCB will be to decide on monetary and exchange rate policies and implement them in relations with third countries. Finland took the first step towards EMU in its application for EU membership in 1992, where Finland undertook not to opt out of the third stage and stated that its intent was to be among the first countries to enter the third stage.

The Bank of Finland is affected by integration in many ways, even before Finland decided to join the EU effective from the 1 January 1995. The membership application alone naturally means that the objectives of the EMU and the extent to which they are achieved have been reflected early on the bank's operations. When membership becomes a reality, Finland and the Bank of Finland will be ready to participate fully in EU activities. Even before this, Finland obtained observer status in many EU organizations. Thus, Finland and the three other applicants were accepted as observers at meetings of the EMI Council in mid-1994.

The most significant change in operations stems from the transfer of monetary policy decision-making from the Bank of Finland to the ESCB in the third stage of EMU. Furthermore, the ESCB will issue general guidelines on currency market intervention and will be responsible for the undisturbed functioning of payment systems. Within EMU, the Bank of Finland, like other national central banks, would thus function as a branch office. Decisions on common monetary policy will be made at ECB headquarters, and the national central banks will then implement them in their respective countries.

The third stage of EMU would be the final period for amending legislation on the Bank of Finland. The most important change concerns the transfer of decision-making power, as necessary, from the Board and from the Parliamentary Supervisory Board of the Bank of Finland to the ESCB. To prepare for the required draft legislative changes, a committee has already submitted proposed legislation to increase the Bank of Finland's independence. In recent years, many European countries have made their central banks more independent of the government by amending their legislation.

As a consequence of a common monetary policy, the Bank of Finland would be obliged to accept the policy instruments prescribed by the ESCB. Thus, the base rate would probably have to be abandoned. However, the Bank's liquidity system and the associated call money deposit rate and liquidity credit rate would probably remain, in some form common to all the ESCB countries. At any rate,

decisions on changes in these rates would shift to the ESCB, while implementation and supervision of decisions would remain the Bank of Finland's responsibility. The same principle applies to the minimum reserve system and operations on domestic financial markets and currency markets, whenever these are not handled centrally by the ECB.

Once Finland joins the EMU, the Bank of Finland will cease to pursue an independent monetary policy, although it would, of course, seek to influence ESCB policy. The more effort and expertise the Bank puts into its share of decision-making, the greater the opportunity it will have to influence policy. Since influence would depend on the Bank of Finland having expert staff both at home and at the ESCB, the development and maintenance of expertise and related research would have a prominent role in the Bank of Finland's strategy.

# Appendix

## Financial relations between the banks and the Bank of Finland

### Market operations

#### Participants in the money and currency markets

The Bank of Finland influences interest and exchange rates by means of market operations; that is, by trading in securities and foreign exchange with its approved counterparties.

The Bank may approve as money market counterparties banks and other financial institutions, including securities broking firms, which are active counterparties in the market and have a BOF account. To be an active market participant, a financial institution must be capable of quoting binding bid and offer rates for at least the minimum transaction set by the Bank of Finland, and of delivering the securities on the value date. An institution wishing to open a BOF account must submit an application.

Banks and financial institutions approved as money market counterparties are expected to agree to the code of conduct for the money market.

The following banks have been approved as money market counterparties:

Aktia Savings Bank Ltd  
Banque Indosuez, Helsinki branch  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Savings Bank of Finland  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
Ålandsbanken Ab.

As counterparties in foreign exchange transactions, the Bank of Finland approves banks which act as markka dealers on the foreign

exchange market and are thus able to quote binding bid and offer rates for the currencies traded.

The following banks have been approved as counterparties in foreign exchange operations:

Banque Indosuez, Helsinki branch  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank

A primary dealer system for government bonds was adopted in August 1992. The primary dealers are banks and securities broking firms entitled to take part in competitive tenders for benchmark government bonds and undertaking to maintain a secondary market. The following banks and securities dealers act as primary dealers:

Evli Fixed Income Securities  
Goldman Sachs International  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
Unibörs Securities.

The Bank of Finland holds a weekly 'repo' (repurchase agreement) auction for the primary dealers in government bonds. The instruments involved are central government and Bank of Finland debt instruments. Banks qualifying for Bank of Finland liquidity credit which have signed an agreement on government loan issues and on maintaining a secondary market have a prior right to participate in repo auctions; other counterparties established in Finland and approved by the Bank of Finland may also apply. At its discretion, the Bank of Finland may grant primary dealers access to intra-day credit, which must be fully collateralized by the recipient.

## Instruments of money market operations

Treasury bills and Bank of Finland certificates of deposit are accepted as instruments in money market operations. CDs issued by banks which meet the following five conditions may also be accepted:

1. The bank's capital is at least FIM 200 million.
2. The bank meets the capital adequacy requirements of the Bank for International Settlements (BIS), ie the ratio of the bank's capital to the sum of its risk-weighted assets, investments and off-balance sheet commitments is at least 8%.
3. The bank acts as a market maker for certificates of deposit. This means, inter alia, that the bank gives binding two-way quotations for CDs for at least the minimum trading amount specified by the Bank of Finland and that it is capable of delivering the CDs on the value date.
4. The Bank of Finland monitors the bank's risks.
5. The bank agrees to put up the collateral required by the Bank of Finland for its credits.

In repo money market operations, both government bonds and bonds issued or guaranteed by banks may be approved as collateral, in addition to the above-mentioned securities.

The Bank of Finland accepts CDs issued by the following banks as instruments in money market operations:

Aktia Savings Bank Ltd  
Banque Indosuez, Helsinki branch  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Savings Bank of Finland  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
Ålandsbanken Ab.



## The minimum reserve system

The Bank of Finland introduced the minimum reserve system to replace the former agreement-based cash reserve system on 1 July 1993. Adoption of the new system became possible following Parliament's approval of an act amending the Regulations for the Bank of Finland; this came into force on 30 June 1993.

Under the new law, in order to perform the functions laid down for it in the Regulations, the Bank of Finland may require deposit banks, credit institutions and branches of foreign credit institutions to hold non-interest-bearing minimum reserves at the Bank of Finland not exceeding 5% of the mandatory reserve holder's liabilities.

The reserve requirement currently applies to deposit banks and Finnish branches of foreign credit institutions. Under the system, the Bank of Finland sets the reserve requirement as a percentage of the reserve base. The minimum reserve is calculated on the last day of each calendar month, on the basis of the reserve base. The mandatory reserve holder is required to deposit the required amount by the last business day of the following calendar month.

The required reserve ratio is graduated according to the composition of bank funding; the following requirements to the various items:

- a) 2.0% for liquid deposits and fixed-term deposits maturing within less than one month from deposit;
- b) 1.5% for other deposits of the public;
- c) 1.0% for other domestic liabilities.

The following items included in the assets side of the reserve holder's balance sheet are deductible from c) above: claims on other reserve holders; markka-denominated CDs and bonds issued by other reserve holders; Treasury bills and benchmark bonds issued by the Finnish central government. The more liquid the item concerned, the higher the reserve requirement.

The minimum reserve system was first applied to the reserve base for June 1993; the banks were required to deposit the required reserves at the Bank of Finland by the end of July. Some FIM 6.3 billion was deposited in minimum reserves at that time.

The minimum reserve requirements apply to the following banks:

Aktia Savings Bank Ltd  
Banque Indosuez, Helsinki branch  
Citibank International plc Finland Branch  
Interbank Osakepankki  
Kansallisuottopankki Oy  
Kansallis-Osake-Pankki  
OP-kotipankki Oy  
Okobank  
Postipankki Ltd  
Savings Bank of Finland  
Union Bank of Finland  
Suur-Helsingin Osuuspankki  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
Ålandsbanken Ab  
Other savings banks and cooperative banks.

## The liquidity system

The Bank of Finland's liquidity system consists of banks' call money deposits at the Bank of Finland and liquidity credits granted to the banks by the central bank.

Liquidity credit can have a maturity of either 1, 7, 14, 21 or 28 days, as determined by the Bank of Finland. As of October 1992, the maturity has been 7 days. Liquidity credit must be fully collateralized.

Both the interest rate payable on call deposits and that charged on liquidity credit are tied to the Bank of Finland's tender rate. The liquidity credit interest rate is one percentage point above and the call deposit interest rate three percentage points below the Bank of Finland's tender rate.

The tender rate is determined by competitive tender. Ordinarily, banks may submit bids for both interest rates and amounts of maturities, and the tender rate is calculated as the weighted average of accepted bids. In fixed-rate tenders, the Bank of Finland sets the tender rate in advance, and banks may submit bids or offers for the amounts desired. The tender rate is a weighted average interest rate for one-month instruments based on the bids or offers accepted in the most recent competitive tender and expressed as an annual interest rate.

The following banks are entitled to Bank of Finland liquidity credit:

Aktia Savings Bank Ltd  
Banque Indosuez, Helsinki branch  
Citibank International plc Finland Branch  
Interbank Osakepankki  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Savings Bank of Finland  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
Ålandsbanken Ab.

## The BOF current account system

The Bank of Finland's current account (BOF) system, a key element in the Finnish payments and clearing system, was adopted in March 1991. Current account entries can be divided into three main categories. The first consists of entries resulting from transactions between the Bank of Finland and the commercial banks, including the Bank of Finland's money market operations and currency management. Second, the system handles the transfer of funds in interbank transactions, a substantial proportion of which consist of money market or foreign currency transactions. The third category includes clearing of banks' payment transactions and clearing entries for the Helsinki Money Market Center and Helsinki Stock Exchange.

The banks have PC-based workstations linked through the telecommunications network to the BOF. The workstations are linked on a real-time basis with the BOF database, and the banks handle their own payments to other BOF account holders through the system.

At its discretion, the Bank of Finland can open a BOF account for any Finnish credit institution or foreign credit institution operating in Finland, which belongs to the minimum reserve system and is subject to supervision by the Financial Supervision Authority. Moreover, the institution must meet the minimum capital adequacy requirements: it must have FIM 30 million in capital and its operations must be on a sound and stable basis. Other credit institutions or corporations operating on the financial market can be granted a BOF account only for exceptional reasons.

The Bank of Finland may grant an intra-day credit limit on a credit institution's BOF account, the credit institution being required to

put up at least 25 per cent of the limit as collateral, at the Bank of Finland's discretion.

The BOF account holders are:

Aktia Savings Bank Ltd  
Banque Indosuez, Helsinki branch  
Citibank International plc Finland Branch  
Helsinki Stock Exchange  
Helsinki Money Market Center  
Interbank Osakepankki  
Kansallis-Osake-Pankki  
Okobank  
Postipankki Ltd  
Savings Bank of Finland  
Finnish Export Credit Ltd  
Union Bank of Finland  
Svenska Handelsbanken, Helsinki branch  
Skopbank  
State Treasury  
Government Guarantee Fund  
Ålandsbanken Ab.

## Base rate

The Bank of Finland's base rate is set by the Parliamentary Supervisory Board upon a proposal by the Board of the Bank of Finland. The base rate is one of the reference rates for the market; some 39 per cent of the deposit stock and 36 per cent (December 1993) of the credit stock are tied to it and are adjusted as the base rate changes. As of 1 February 1994, the base rate is 5.25 per cent.

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