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- Monetary policy and economic outlook
- Macroprudential supervision of financial markets
- Bank of Finland's oversight of payment and settlement systems
- Payments between EU central banks: structure and experiences in early 1999

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Mailing address:
P.O.Box 160,
FIN-00101 HELSINKI

Phone:
National (09) 1831
International + 358 9 1831

E-mail:
Internet: publications@bof.fi

Telex: 121224 SPFBFI
Fax: + 358 9 174872
Cable: SUOMENPANKKI

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Monetary policy and economic outlook

Signs of recovery in the world economy have strengthened in recent months. The economic crisis that started two years ago and afflicted a large part of the global economy appears to be gradually receding. The upturn in the world economy is expected to contribute to faster growth in the euro area as well.

With the pick-up in economic activity in the euro area and the sharp rise in the oil price, the picture for future price developments in the euro area is changing. Whereas until fairly recently it was widely perceived that the balance of risks was weighted towards weaker-than-expected economic performance and slower inflation, the expectation now is for inflation to accelerate modestly in the near future. Price stability is not expected to come under threat in the near term, however. The future stance of monetary policy will depend on the extent to which the pick-up in growth affects the evolution of prices.

In Finland, the risk of overheating in the economy has again become a key talking point. Despite robust growth in recent years, no major imbalances have yet emerged in the Finnish economy, and at present there does not appear to be a danger of any general overheating in the economy. Problems caused by regional and sectoral bottlenecks should be alleviated through, in particular, selective measures on the supply side. A continuation of rapid credit growth could give cause for concern, however. It may be asked whether the recent strong credit expansion is built on realistic expectations concerning future interest rate developments and collateral values.

If implemented in its present form, the Government's budget proposal for 2000 will mean that the central government will finally begin to pay off its debt after a decade of large deficits. Overall, the budget proposal can be considered neutral: it continues the policy of consolidation of central government finances but does not exploit to the full the scope for countercyclical and structural policy action offered by the current economic situation.

Once again, this autumn's pay negotiations are of crucial importance for the future performance of the Finnish economy. The outcome of these negotiations will largely determine whether the growth performance of recent years, characterized by improving employment, low inflation and stable growth of real incomes, can be sustained in the years ahead.

Global economy is recovering

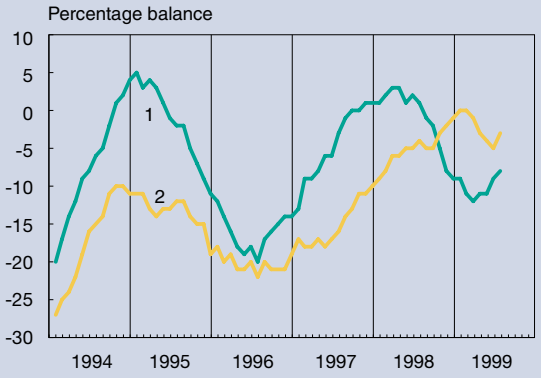
The growth prospects for the global economy have improved during the spring and summer months. The US economy has continued to grow strongly, and the recovery in the crisis countries of Southeast Asia has been faster than expected. The Japanese economy has shown signs of stabilizing, although it is still uncertain whether the economy has returned to the growth path. Overall, the world economy is expected to grow at a slightly faster pace this year than in 1998. Given the better growth prospects for the world economy and easy stance of monetary policy, the outlook for growth in the euro area countries has also improved.

The positive developments in the world economy are expected to continue in 2000. Though the growth of the US economy is likely to slow, the growth of the global economy is expected to be sustained by improving economic conditions in the EU, Asia and Latin America.

The global economy could grow faster than forecast, if the recovery of the Japanese economy turns out to be stronger than expected. On the other hand, a sharp fall in US asset prices remains a major downside risk, which could lead to weaker-than-forecast output growth. Admittedly, the significance of this risk will diminish as growth in other countries consolidates. Another risk is posed by the economic

Chart 1.

Confidence indicators for the euro area



1. Industrial confidence indicator
2. Consumer confidence indicator

difficulties in China. These are due in part to the weakening in the currencies of competitor countries, which has rekindled discussion of a possible devaluation of the Chinese yuan. Although a yuan devaluation would not be as serious a problem for the overall Asian economy as it would have been just a year ago, it could nonetheless cause disturbances in financial markets and dampen the recovery of growth in the region. Similarly, growth in Latin America could prove to be weaker than expected, despite the fact that the Brazilian economy appears to be recovering fairly quickly from the financial crisis it experienced at the beginning of the year. The repercussions of the crisis, particularly on the Argentinian economy, could result in weaker-than-forecast growth in the region as a whole.

Growth is also picking up in the euro area

Reflecting the deceleration in the growth of the global economy, economic growth in the euro area also slowed in the last quarter of 1998 and the first quarter of 1999. The slowdown in euro area growth nevertheless seems to have ended during the first half of the year. Recent data indicate that euro area real GDP increased by 0.5 per cent in the first quarter of 1999 compared with the last quarter of 1998 and by 1.8 per cent compared with the same quarter a year ago. Growth picked up slightly from the last quarter of 1998, when the quarter-on-quarter rate of real GDP growth was 0.3 per cent. As expected, output growth in the first quarter was driven by strong domestic demand, which more than offset the negative contributions of net exports and changes in inventories. Both private consumption and investment developed favourably.

The growth of industrial production in the euro area was sluggish during the latter part of spring 1999, and in Germany and Italy, in particular, industrial activity was weak. There is some evidence that a gradual improvement is now under way, however. Industrial confidence improved during the spring and summer, suggesting that industrial production in the euro area could pick up in the months ahead (Chart 1). In the construction sector confidence has been rising for some time now, and recently consumer confidence has turned up again after having fallen back in the spring and early summer, partly because of the food scandal in Belgium.

In the light of the better growth prospects for the global economy, the easy stance of monetary policy and the latest confidence indicator data, a good basis exists for the strengthening of euro area growth in the latter part of this year. Thus the slowdown in euro area growth that started last year could prove to be fairly short-lived. This is conditional on the assumption that the downside risks to global economic performance do not materialize. A strong strengthening in the external value of the euro could likewise hamper the pick-up in growth, especially in the core euro area countries.

According to revised data, Finland's real GDP increased by 5.6 per cent in 1998, which is 0.7 percentage point more than previously estimated. Thus the economy grew at the same pace as in 1997. Private investment grew strongly in 1998, by about 11 per cent, and the rate of growth of private consumption nearly doubled compared with the previous year. In contrast, the pace of growth of exports slowed considerably in 1998. The revised figures show that the carry-over effect for 1999 of GDP growth in 1998 is higher than previously estimated.

Economic activity in Finland seems to have slowed somewhat in early 1999, largely in line with expectations. According to preliminary data, total output increased by 2.7 per cent in the first quarter of 1999 compared with the same quarter a year ago. Growth was driven by domestic demand as private consumption grew by 4.2 per cent and private investment by 12.7 per cent. By contrast, export performance was weak.

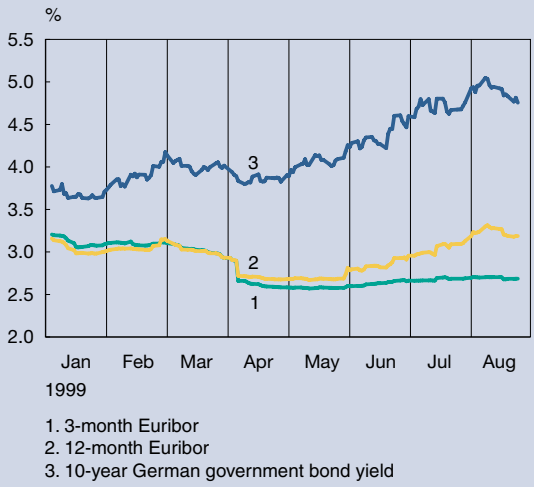
According to the monthly indicator of total output, the economy continued to grow at an annual rate of about 3 per cent in the April-May period, and the rate of growth is expected to remain at least satisfactory in the near term. Growth is underpinned by private consumption, which continues to be fairly robust. This is because consumer confidence has remained good, thanks partly to the improved employment situation. An indication of the strength of consumer demand is continuing brisk car sales. Industrial confidence has also increased somewhat in recent months from the low levels reached in the early part of the year, and the expected pick-up in the growth of the global economy points to a strengthening in Finnish exports in the near future. Up till now, however, industrial growth has largely rested on the telecommunications and electronics sectors, and as yet there has not been a broad-based recovery in production.

Improved growth prospects have been reflected in developments in the financial markets

The euro weakened substantially in the early part of the year, both in terms of a trade-weighted exchange rate index and against the US dollar. To a large extent, this reflected divergent cyclical developments in the United States and the euro area, particularly the weak economic performance of the core euro area countries. The euro was also weakened by the prolongation of the conflict in Kosovo. The situation changed in mid-July, however, when the euro started to appreciate, particularly against the US dollar. One factor behind the strengthening was the improved economic outlook in Germany. Despite the appreciation, the euro's effective exchange rate in mid-August was still about 8 per cent weaker than at the beginning of 1999.

Chart 2.

Interest rates in the euro area

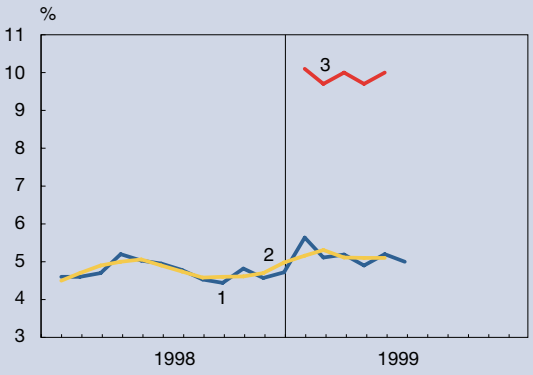


1. 3-month Euribor
2. 12-month Euribor
3. 10-year German government bond yield

The Eurosystem's key interest rates have been unchanged since the beginning of April when the Governing Council of the ECB lowered the interest rate on main refinancing operations to 2.50 per cent. Money market rates remained fairly steady until early June. However, during the summer long-term money market rates have risen, and government bond yields have increased appreciably in the euro area. In the period from the beginning of June to mid-August, ten-year government bond yields rose by 70 basis points (Chart 2). Initially, the upward movement in yields reflected the rise in US bond yields, which was connected with expectations of a tightening in US monetary policy. Subsequently, interest rate developments have been influenced by internal factors in the euro area, notably the improving outlook for economic growth in the euro area and expectations of a possible tightening in monetary policy. As a result, the differential between long-term bond yields in the US and comparable yields in the euro area has narrowed. With the rise in long-term interest rates, the slope of the yield curve in the euro area has steepened substantially. In mid-August, the difference between the ten-year bond yield and the three-month money market rate on the German yield curve was

Chart 3.

Growth of the money stock and bank lending in the euro area



1. M3 (12-month percentage change)
2. M3 (3-month centred moving average of 12-month percentage change)
3. Bank lending to the private sector (12-month percentage change)

about 220 basis points, as against 60 basis points at the end of 1998.

The weakening of the euro's exchange rate dominated news reports on euro area monetary policy in the spring and early summer. The attention it received was exaggerated, however. The prime objective of the ECB's monetary policy is to maintain price stability in the euro area. In an economic region like the euro area where trade with the rest of the world accounts for but a small proportion of overall economic activity the exchange rate is of limited importance for price developments and for economic performance in general.

Stable developments in the money stock, strong credit growth

The growth of the money stock in the euro area has remained stable in recent months. The growth rate of the key monetary aggregate M3 has been close to 5 per cent, ie slightly faster than the reference value of 4½ per cent set by the Governing Council of the ECB (Chart 3). The narrow monetary aggregate M1 has grown at a substantially faster pace than the broad money aggregate, at an annual rate of over 11 per cent.

The growth of credit in the euro area has remained high in recent months. In particular, bank loans to the private sector have grown strongly, at an annual rate of about 10 per cent. There are still large differences in credit growth rates within the euro area. Thus, whereas in Ireland and Portugal bank loans to the private sector have grown at a very fast pace, in France and Germany the rate of credit expansion has remained slower than the euro area average.

In Finland the items included in the monetary aggregates for the euro area grew at a slower pace than the corresponding euro area aggregates throughout the spring. The rate of growth of the broad monetary aggregate has fluctuated widely, largely because of variations in the public's holdings of certificates of deposit. Bank deposits have been growing at an annual rate of about 5 per cent.

In contrast, the stock of bank lending in Finland continued to grow strongly in the late spring and early summer. The rate of increase in the total lending stock accelerated to nearly 13 per cent in June, fuelled by demand for housing and business loans. The annual rate of growth in housing loans accelerated to over 16 per cent in June and new housing loans raised during the month reached a record level of over FIM 5 billion.

Contributing to the strong demand for loans in the first half of the year was the continuing decline in lending rates. In June the average rate on new housing loans was 4.3 per cent, more than 1 percentage point lower than a year earlier. The average rate on new loans to companies fell to just over 3 per cent in the January-June period. Although deposit rates have also fallen a little, the banks' interest rate margin narrowed substantially in the first half of the year.

Although the strong growth of credit in Finland partly reflects a recovery from the severe recession in the early 1990s, it could give cause for concern if it continues. It should be remembered that interest rates are now at an exceptionally low level, and allowance must be made for future interest rate movements. As the starting level of interest rates is low, even moderate interest rate increases associated with the normal economic cycle can lead to a substantial increase in interest payments on loans.

Inflation in the euro area is expected to pick up slightly

The rate of increase in consumer prices in the euro area picked up in the early spring, partly because of a sharp rise in the price of crude oil (Chart 4). As measured by the Harmonized Index of Consumer Prices (HICP), the annual rate of inflation increased from 0.8 per cent in January to 1.1 per cent in April (Chart 5). In recent months, however, the rise in prices has slowed again despite the fact that energy prices have continued to move higher. In June the annual rate of inflation in the euro area was 0.9 per cent.

The recent slowdown in inflation was due in large part to fall in the rate of increase in food prices and to a lesser extent to a slowing in the rate of increase in services prices. The rate of increase in food prices slowed throughout almost the entire euro area whereas the slower rate of increase in service prices reflected mainly deregulation and intensified competition in, for example, the telecommunications sector in some euro area countries. In June the annual rate of increase in services prices in the euro area was 1.4 per cent. The slowdown in the rate of increase in services prices is quite pronounced as the corresponding rate in late 1998 was still about 2 per cent.

Differences in inflation rates across euro area countries decreased slightly in the May-June period, whether measured in terms of the unweighted standard deviation of inflation rates or the spread between the highest and lowest inflation rates. Up to that time, the differences had shown a tendency to widen since mid-1997. Notwithstanding the recent narrowing, the differences are still quite significant, however: in June inflation was fastest in Spain, the Netherlands, Ireland and Portugal (2.1 per cent) and slowest in Austria (0.2 per cent). In Finland the HICP rose by 1.2 per cent in June. In line with overall developments in the euro area, the rate of increase in prices in Finland slowed in June after having accelerated in the early part of the year.

The outlook is for a moderate acceleration in the rate of increase in consumer prices in the euro area in the months ahead, especially if the price of oil remains at its present level or moves higher. For the same reason the rate of increase in consumer prices in Finland is likely to accelerate in the second half of the year. The strong growth of credit aggregates, the recovery in economic growth and the weakening of

Chart 4.

Crude oil price

North Sea Brent, USD per barrel

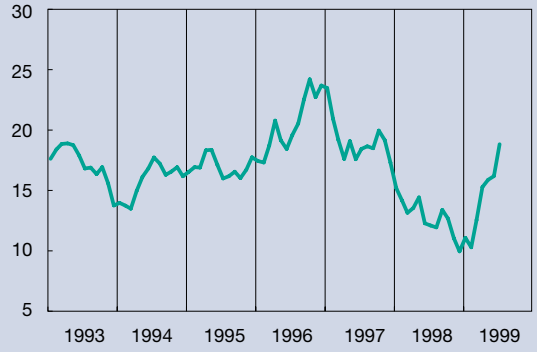
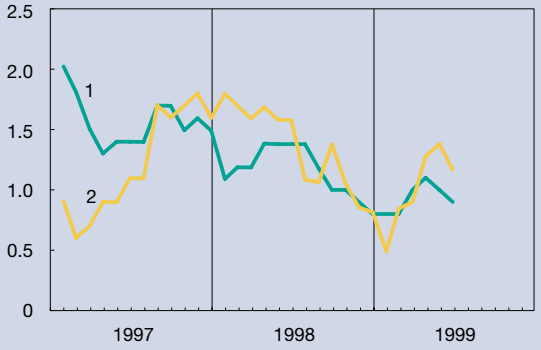


Chart 5.

Harmonized Index of Consumer Prices

12-month change, %



1. Euro area
2. Finland

the euro in the early part of the year are other factors that support the view that the rate of increase in prices will accelerate. On the other hand, intensified competition and deregulation will reduce inflationary pressures in the euro area over the next few years.

Slow improvement in government budgetary positions in the euro area

As expected, the improvement in government budgetary positions in the euro area seems to be modest this year. It is estimated that the cyclically adjusted deficit for the euro area as a whole could even be larger than last year. Nor does the situation seem likely to improve quickly in the future, since the budget targets incorporated in the stability programmes are not particularly ambitious. In many cases, planned spending cuts are based largely on reduced debt service payments as a result of lower interest rates. Moreover, further spending cuts will be necessary in some countries if they are to keep to the targets laid down in the stability programmes.

The German government has announced a package of measures designed to reduce the budget deficit from 1.4 per cent of GDP this year to 0.5 per cent of GDP by 2003. The plan provides for large cuts in government subsidies and welfare spending. Many of the planned cuts have yet to be specified in detail, however. Implementation of the plan would enable Germany to keep on the path envisaged for the evolution of public finances in the stability programme.

In late spring the Italian government announced that its fiscal deficit in 1999 would be 2.4 per cent of GDP, up 0.4 percentage point from the target in the stability programme. The divergence from the target level received wide publicity and for a time undermined the credibility of the Stability and Growth Pact in the markets. This further weakened the euro and led to a widening in the differential between yields on Italian and German government bonds. In June the Italian government approved a budget plan for the years 2000–2003 which provides for spending cuts and extra revenue aimed at bringing the budget deficit down to the level set in the stability programme (1.5 per cent of GDP in 2000) beginning from next year.

If inflation expectations in the euro area are to remain subdued and thereby enable monetary policy in the euro area to continue to be growth-supporting, it is essential to preserve the credibility of the stability programmes as a means of safeguarding sound government finances in the euro area over the medium term. It is clear, and acceptable, that unexpected economic developments may cause short-term divergences from the path mapped out in the stability programme. This does not, however, detract from the importance of the stability programme as a guideline for planning government finances in the medium term. Indeed, in future it would be advisable that, as soon as a euro area country discovers that the short-term targets set in the stability programme cannot be achieved, it draw up a package of measures designed to bring the government budgetary position back to an acceptable path in the medium term.

No immediate risk of overheating in the Finnish economy

Despite growing robustly in recent years, economic developments in Finland have remained on a sustainable path: the evolution of domestic costs has closely followed that in the rest of the euro area and no major imbalances have occurred in the economy. Future economic performance is expected to continue to be at least satisfactory, although the period of fastest growth now appears to be over. Furthermore, the recovery in the rest of the euro area could lead to a gradual tightening in monetary conditions and a strengthening in the euro's exchange rate, which would be conducive to more balanced performance in Finland as well. But even if monetary policy is tightened in the euro area, it nevertheless seems likely to remain relatively easy in the near future with respect to the economic situation in Finland. Thus the balance of risks as regards the future performance of the Finnish economy would appear to be weighted more towards stronger-than-forecast than weaker-than-forecast growth. There is no immediate risk of overheating in the economy, however.

Fiscal policy will continue to bear a major responsibility in the future for keeping the economy on a sustainable path. If the government's budget proposal for next year is implemented as planned, it will mean that the central government will finally start to pay off its debt after a decade of large deficits. This marks an important milestone in efforts to put central gov-

ernment finances on a sound footing. The budget does not, however, exploit to the full the scope for countercyclical policy measures offered by the present economic situation. Overall, the budget proposal can be considered neutral: it continues the policy of consolidation of central government finances but does not provide room for manoeuvre to deal with future fluctuations in the economic cycle.

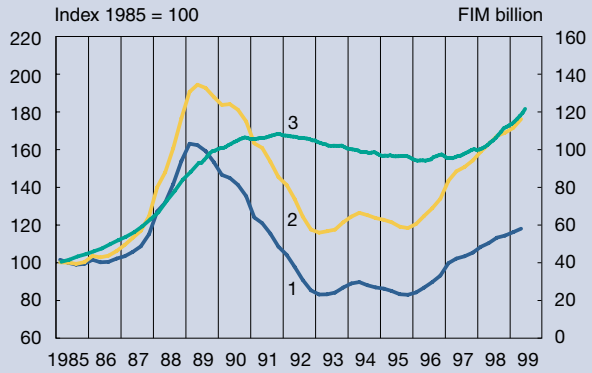
Understandably, the political pressure for the government to increase spending has begun to mount again now that the budget balance is moving into surplus. Any relaxation in the stringent policy towards government finances would be a mistake, however, not only from the cyclical policy viewpoint but also as concerns long-term growth and employment prospects. Although the budgetary position does seem quite good at the moment, it is worth remembering that central government debt is still at a level that would leave little scope for the pursuit of countercyclical policy in the event that economic performance turns out to be weaker than expected. The current economic situation offers a unique opportunity to create room for manoeuvre in fiscal policy. This would also help to relieve future pressure on public spending caused by an ageing population.

As the macroeconomic impact of fiscal policy will remain neutral, structural and selective measures have added importance in efforts to alleviate sectoral and regional pressures. In the construction and electronics sectors, in particular, supply of skilled labour has weakened considerably. Regionally, growth has tended to become concentrated in a small number of growth centres, where housing prices have continued to rise rapidly. To relieve these pressures, further consideration needs to be given to ways of eliminating bottlenecks on the supply side, in particular. As for the labour market, there is a need to improve the regional and occupational mobility of labour and to increase incentives to work.

The strong rise in housing prices, particularly in growth centres, reflects not only expectations that interest rates will remain low but also a return to more normal levels from the very low levels of the post-recessionary years (Chart 6). The rise in housing prices seems likely to pose only a minor risk to macroeconomic stability in the near term, provided a responsible approach is applied in granting housing finance. Local problems are best dealt with by town planning policies that are flexible and quick to respond to needs and by ensuring that competition in the construction sector functions effectively. Consideration should also be given to postponing the construction of, for example, public infrastructure until a more appropriate stage in the economic cycle.

Chart 6.

Housing prices and credit growth in Finland



1. Real prices of old dwellings; whole country (left-hand scale)
2. Nominal prices of old dwellings; whole country (left-hand scale)
3. Stock of banks' housing loans (right-hand scale)

Favourable outlook – an opportunity and a challenge for economic policy

The next few years will be an opportune time for furthering the process of structural reform in the economy. This applies particularly to the labour market. The postponement of reforms could mean that they may have to be implemented in economic conditions that are far less favourable than at present. This would exacerbate the short-term difficulties that inevitably accompany reforms.

Yet again, the upcoming wage round is of crucial importance as regards the economic outlook for Finland over the next few years. Irrespective of whether pay agreements are centralized or decentralized, it is important that the general level of pay increases is consistent with the price stability objective and that there is sufficient flexibility in agreements at firm

level to allow for different cyclical conditions and labour market developments.

From the point of view of employment, not only the overall level of pay increases is important but also the fact that developments in relative wages reflect as closely as possible the supply of and demand for each type of skill in the economy. This may lead to sectoral divergences in wage developments. There is also evidence that technological progress and the increased importance this gives to workers' qualifications and skills in the labour market are increasing wage differences, at least in the short run. A significant reduction in structural unemployment, especially among low-skilled workers, may require that this development be allowed to continue.

Finland's good economic performance in recent years has to a large extent been built on moderate wage agreements. Wage moderation has ensured good competitiveness and improved employment while tax measures have underpinned stable developments in wage earners' real incomes and enabled a slight reduction in the tax wedge. Good economic performance has, in turn, supported the consolidation of central government finances and made it possible to address structural problems in the economy. The current economic situation offers a good opportunity for the continuation of these developments.

19 August 1999

Key words: inflation, monetary policy, economic situation

Macroprudential supervision of financial markets

by Heikki Koskenkylä, Head of Department
and Kimmo Virolainen, Head of Division
Financial Markets Depatment
Bank of Finland

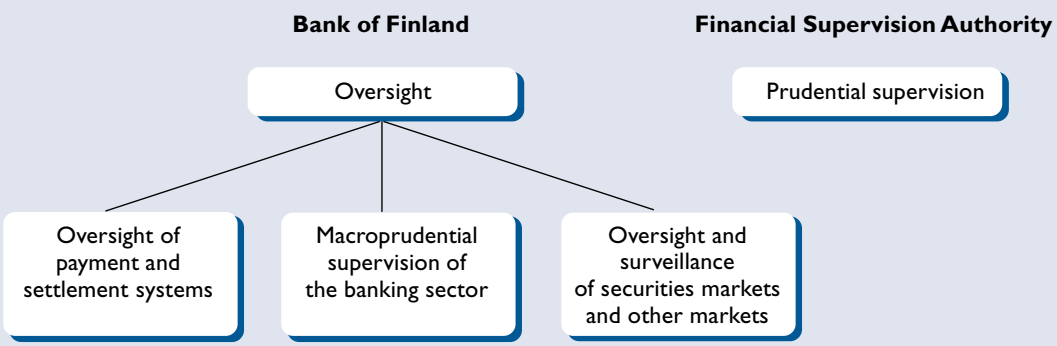
Central banks are generally considered to have two main tasks: maintaining price stability and promoting the stability and functioning of the financial system. A stable and reliable financial system is a *sine qua non* for stable and favourable overall macroeconomic performance. In addition, the stability of the banking system is critical for the conduct of monetary policy.

Recently, the terms 'oversight' and 'macroprudential supervision' have been used to describe the tasks of the central bank aimed at promoting the stability and efficiency of the financial system. Oversight encompasses financial market infrastructure, ie payment and settlement systems, as well as the banking sector and securities markets.[1] Macroprudential supervision usually refers to the central bank's oversight of the banking sector, but it also includes surveillance and analysis of securities markets from the viewpoint of stability and efficiency (Chart).

Oversight by the central bank differs from prudential supervision by banking supervisory authorities in that it focuses primarily on the systemic risk aspects of financial markets and systems. Banking, securities and insurance supervisory authorities are responsible for supervising institutions' risks and legality of operations. Cooperation between the central bank and the supervisory authorities is of prime importance in promoting the stability of the financial system. In addition to systemic risk, oversight is concerned with the efficiency of financial markets and open competition in the markets.

[1] See the article by Harry Leinonen and Ralf Pauli on oversight of payment and settlement systems in this issue of the Bulletin.

Chart. Oversight and prudential supervision in Finland



Essential features of macroprudential supervision

Under the Act on the Bank of Finland, the Bank of Finland operates as part of the European System of Central Banks (ESCB) in the manner laid down in the Treaty establishing the European Community and Statute of the ESCB and the European Central Bank (ECB). Under Article 105(5) of the Treaty, the ESCB[2] is required to 'contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system'.[3]

The Governing Council of the ECB has identified two principal ways in which the Eurosystem can support policies conducted by national supervisory authorities, namely the active fostering of cooperation between national supervisory authorities and cooperation between national authorities and the Eurosystem. This cooperation focuses primarily on issues related to the stability of financial markets and systems at macro level and occurs mainly within the ESCB's Banking Supervision Committee (BSC) and its various working groups.[4] The BSC comprises representatives of the national central banks of EU member states, national supervisory authorities and the ECB.

The Act on the Bank of Finland obliges the Bank of Finland to participate in maintaining the stability and efficiency of the payment system and the financial system as a whole and to participate in their development. These tasks correspond to those laid down in the Statute of the ESCB. Under Article 14.4 of the Statute, national central banks may perform functions other than those specified in the Statute unless the Governing Council of the ECB decides, by a two-thirds majority, that these are not in harmony with the objectives and tasks of the ESCB. National central banks perform such functions on their own responsibility and liability. This provision, for example, enables national central banks in some euro area countries to continue to perform banking supervision functions. Article 14.4 is also of relevance for the central bank's potential role in managing financial market crises. Many projects related to the overall development of the financial system are likewise implemented solely at national level, in cooperation with other relevant authorities, banks and other financial market participants. The other main authorities involved in these activities in Finland are the Ministry of Finance, the Ministry of Justice and the State Treasury.

Market surveillance and analysis is a key element of macroprudential supervision

Ongoing surveillance and analysis of financial markets is a key element of a central bank's macroprudential supervision. This analysis focuses on monitoring financial behaviour, institutions and market developments from the viewpoint of stability and efficiency. It is essential for the analysis of financial stability to identify key stability (macro) indicators that can be used to monitor the extent of systemic risks in the financial system and their likelihood of realization. Necessary conditions for the occurrence of a systemic crisis are that 1) the financial system or some part of it is inherently vulnerable to instability or that such vulnerability develops over time; 2) something happens to trigger a disruption; and 3) mechanisms exist that are conducive to the spread of problems from one institution to another within the system.

It is especially important for the prevention of systemic crises to be able to identify and monitor factors that increase the vulnerability of the finan-

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[2] To be precise, Article 105(5) of the Treaty is applicable to euro area countries only. The national central banks of euro area countries and the ECB together form the Eurosystem.

[3] In addition, the ECB has been assigned an advisory role relating to the implementation of financial legislation (Article 25.1 of the Statute), a consultative role in its fields of competence (Article 105(4) of the Treaty) and possible specific tasks relating to prudential supervision (Article 105(6) of the Treaty).

[4] Article 105(6) of the Treaty establishing the European Community provides that, where necessary, the Council of the European Union may, acting unanimously, confer upon the ECB specific tasks relating to the prudential supervision of credit institutions and other financial institutions with the exception of insurance undertakings.

cial system to instability. Such factors may be an exceptionally strong economic boom, liberalization of capital movements, or major changes in competitive conditions or in the regulatory and supervisory environment. Among the factors that can trigger disruptions in the financial system are an economic recession or a sudden increase in general uncertainty.

The third key factor as regards systemic crises is the existence of mechanisms or channels through which problems of one financial institution or market sector spread to other parts of the financial system. Direct channels include financial dependencies between financial institutions that arise especially as a result of interbank transactions in the wholesale market and banks' central position in payment and settlement systems. Disruptions can spread from one financial institution or market sector to another even in the absence of direct financial links, as a consequence of market participants' behaviour. The recent crises in the emerging economies are a case in point.

Analysis of the stability of the banking system is based to a large extent on combining quantitative and qualitative information. It also makes use of data on overall economic developments and individual banks. However, given the complexity involved, the analysis of financial stability can never be an entirely mechanistic process.

A key tool used by the Bank of Finland in its analysis of the stability of the financial system is the forecasting model for the banking sector, which is used to forecast developments in profitability, capital adequacy and efficiency for the entire Finnish banking sector over a two-year horizon. Forecasting was initiated in the early 1990s in response to the Finnish banking crisis. The banking sector forecast is made twice a year in connection with the Bank's macroeconomic forecast and in cooperation with the Financial Supervision Authority.

To meet the needs of macroprudential supervision, the Bank produces a number of regular internal reports and various ad hoc reports. There has also been a marked increase in the amount of material that is made available to the public. The review article on financial stability appearing twice a year in the *Bulletin* serves an important task in this respect in that it contains the Bank of Finland's official assessment of the stability of the financial markets. In addition, the Bank publishes articles on developments in different sectors of the financial markets, on regulation and supervision, and on structural analyses. Analytical studies and reports are published in the Bank's publications series.

International cooperation is essential

The 'home-country' principle is one of the basic pillars of financial market regulation in the EU. However, macroprudential supervision cannot be conducted exclusively at national level, as international links between banks have tightened substantially.

The BSC is currently devising a framework for macroprudential analysis of the EU area banking system. Furthermore, the BSC closely monitors structural developments in the EU area banking sector and banks' exposures to the crisis regions of Asia, Russia and Latin America.[5] In addition to cooperation within the BSC, the Bank of Finland participates in international monitoring particularly under the aegis of the IMF, OECD and BIS.

At the Bank of Finland, monitoring and analysis of the effects of the international financial system on the Finnish financial system now receive far more attention than before.

Participation in the development of regulation and supervision

Macroprudential supervision by central banks also includes participation in the development of regulation and supervision of financial markets. Central banks' close knowledge of the markets is often the basis for their involvement in this work. Some of the research conducted by central banks has been aimed at facilitating this task.

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[5] See eg the ECB publication *Possible effects of EMU on the EU banking system in the medium and long term*, February 1999, and the article *Banking in the euro area: structural features and trends*, ECB Monthly Bulletin, April 1999.

With the exception of oversight of payment and settlement systems, the Bank of Finland has no formal responsibilities in the area of regulation and supervision. The Bank exercises influence mainly by issuing opinions and participating in various official working groups and in joint projects with other bodies. The Bank is also represented on the boards of the Financial Supervision Authority and Insurance Supervision Authority. The primary responsibility for financial legislation in Finland lies with the Ministry of Finance.

The ESCB contributes to the development of regulation mainly through opinions issued by the ECB and projects conducted by the BSC. Research done by the ECB touches on regulation and supervision, in addition to stability issues. The Bank of Finland is involved in the development of regulation and supervision at international level through its cooperation with the ESCB and various EU bodies. Recently, the European Commission's Banking Advisory Committee (BAC) has been working on new capital requirements for banks, in parallel with a similar initiative by the Basle Committee on Banking Supervision. Representatives of the Ministry of Finance, Financial Supervision Authority and Bank of Finland take part in the work of the BAC.

In addition, the Bank of Finland participates in the development of banking regulation and supervision under the aegis of the BIS. Similarly, the work undertaken within the OECD's Financial Markets Committee and with the IMF also addresses regulatory/supervisory issues.

The Bank of Finland's contribution to the development of regulation and supervision mainly takes the form of economic research and analysis, which provides support for the rather technical practical aspects of this work.

Participation in the overall development of the financial system

At the beginning of the 1980s the Finnish financial markets were relatively undeveloped and tightly regulated. It therefore fell to the Bank of Finland and other public bodies to take an active role in their development and deregulation in the course of the 1980s and early 1990s. As the markets have evolved and become more sophisticated, the need for active public involvement has clearly diminished. The entire development process is guided by the principle that markets should be driven by market forces. Public intervention is warranted only if there is an obvious need (eg market failure, coordinating role, large risks).

The Bank of Finland's chief concern as regards the overall development of the financial system is to promote conditions conducive to stability and efficiency and the functioning of markets.

Crisis management focuses on systemic implications

The aim of the Bank of Finland is to maintain confidence in the financial system without having to intervene in the functioning of the system. However, if there is a threat to stability, the Bank may find it necessary to take a more active role in order to ensure that the financial system can continue to operate effectively. Ultimately, only the central bank can safeguard the liquidity of the financial system.

In the event of a serious crisis, the Bank of Finland participates in crisis management in cooperation with the Financial Supervision Authority and the Ministry of Finance. As the country's central bank, the Bank of Finland is particularly concerned with the systemic implications of a crisis. The aim is to prevent the crisis from spreading and developing into a systemic crisis rather than to rescue individual institutions. In crisis management the need for effective cooperation between the authorities becomes vital.

The information generated by the Bank's macroprudential analysis can be useful to other authorities. Macroprudential supervision provides an additional source of information for decision-making by central banks and other authorities responsible for economic policy.

Importance of communication

To a large extent, the Bank of Finland's work on issues related to financial stability consists of in-

fluencing other authorities, market participants and the general public. The successful pursuit of this task requires detailed knowledge of current and future conditions in the Finnish banking sector and securities markets and the ability to communicate this information both locally and at international level.

With the introduction of the euro, the financial system in the euro area has become more tightly integrated. This has increased the need for cooperation between the ESCB and national authorities of member states in the area of financial stability. The Bank of Finland takes an active part in this cooperation via the BSC. The ESCB has an important role to play in promoting the stability of the financial system in the euro area.

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Key words: macroprudential supervision, oversight, supervision, financial system, banking system, systemic risk

Bank of Finland's oversight of payment and settlement systems

by Harry Leinonen, Adviser to the Board and
Ralf Pauli, Adviser to the Board
Financial Markets Department
Bank of Finland

Payment and securities settlement systems are a key component of financial markets and economic infrastructure. Implementation of monetary policy also places heavy demands on these systems.

The aim of oversight of payment and settlement systems is to ensure their stability, reliability and efficiency. The single monetary policy, single currency and increasingly integrated financial markets that have come with monetary union underline the need for deeper integration of systems in the euro area. This is also reflected in the oversight of these systems. The same general principles should be applied to oversight of payment and settlement systems throughout the euro area. There is also a need to agree on the division of responsibilities and coordination of oversight between the European Central Bank and national central banks.

The authority of the ECB as regards oversight of payment systems is defined in the Treaty establishing the European Community and in the Statute of the European System of Central Banks. According to Article 105 of the Treaty, one of the ESCB's basic tasks is 'to promote the smooth operation of payment systems'. Smooth operation in this context is equated with stable and efficient operations. Article 22 of the Statute states that the 'ECB and national central banks may provide facilities, and the ECB may make regulations, to ensure efficient and sound clearing and payment systems within the Community and with other countries.'

Section 3 of the Act on the Bank of Finland states that one of the Bank's tasks is to 'participate in maintaining the reliability and efficiency of the payment system and overall financial system and participate in their development'.

Payment systems

General principles of ESCB oversight of payment systems

In the context of monetary union, the basic precept of payment system oversight is to combine national operations with a degree of central guidance. Effective oversight requires uniform 'rules of the game' as well as local knowledge and contacts.

The ECB's Governing Council determines the **broad oversight policy** in respect of systems for executing both domestic and cross-border payments. The guiding principles of oversight policy cover all issues concerning effective conduct of monetary policy, financial market stability, a level playing field, and cross-border payments within the EU and with third countries. Activities where these considerations are less prominent require less coordination. Thus there is also room for oversight policies defined by national central banks, provided those policies are more effectively conducted at national level and are consistent with the guiding principles of oversight policy.

Implementation of oversight policy in respect of domestic systems is a task of national central banks. For a system for executing payments between countries within the euro area, the primary responsibility for policy implementation can rest with either the ECB or the national central bank, depending on the situation. The blurring of the distinction between domestic and cross-border systems underlines the growing importance of cooperation between national central banks and the ECB.

Continuous monitoring of payment systems falls naturally within the remit of national central banks. In the context of a cross-border euro-based

payment system, this responsibility lies with the central bank whose system is used to execute the necessary interbank funds transfers. Thus the daily monitoring of the EBA Euro Clearing system, which has been developed and is maintained by private banks, is carried out by the ECB, since its system is used to execute daily interbank settlements.

In connection with **the management of crises and problem situations**, a distinction is made between disruptions that jeopardize financial stability and disturbances of other kinds. It is primarily the job of the national central bank to handle stability problems, in cooperation with the banking authorities if necessary. ECB participation is called for when the problem is serious and could have repercussions beyond the borders of the country in question or when action taken to address the problem affects the management of overall liquidity in the euro area.

Central banks have been less concerned about **retail payment systems**, since these are not crucial to the conduct of monetary policy and generally the associated systemic risk is small. The ECB and national central banks have nonetheless encouraged the banking sector to upgrade the execution of cross-border retail payments so that these payments too can be executed in the euro area in a manner that is consistent with the single market goal. Central banks have also indicated their readiness to participate where necessary in the standardization of retail payment systems. Definition of oversight principles may also become a timely issue in respect of retail payment systems, if systems are set up with cross-border links. Basic requirements regarding electronic money are set out in a report that was approved by the ECB Governing Council in summer 1998.

Implementation of payment system oversight in Finland

Over the past two years the Bank has continued to pursue the forward-looking, continuous monitoring that constitutes a necessary part of oversight and the development of surveillance and management of problem situations. Agreement was reached with the banks concerning risk-reducing arrangements involving increased use of real time gross settlement and upgrading of risk management for netting. In October 1998 the netting of nonresidents' markka-denominated (loro) payments was replaced by a gross settlement arrangement. As intraday interbank net balances in connection with loro payments could be huge, the new arrangement substantially reduced banks' counterparty risks connected with payment intermediation. It is likely that in the future more and more large customer payments, both domestic and foreign, will be executed on a gross basis, free of any interbank counterparty risk.

While progress has been made in the execution of payments on a gross basis, work has also been done with the banks to reduce risks associated with netted payments. The POPS payment system, which was developed by the banks for data transmission and clearing of express transfers and cheques, has been upgraded to the point where a study conducted in autumn 1998 found that it met ECB standards for netting systems for large-value payments.

As a first step in reducing risks in the PMJ system (used mainly for retail payments such as credit transfers and bank card payments), the Bank of Finland and the banks agreed on two changes to the settlement procedures. A new 'morning clearing' was added to the traditional afternoon clearing. This shortened the time difference between account entry to the customer's benefit, and corresponding interbank funds transfer, which reduced banks' counterparty risk with no loss in quality of service to the customer. The second change – also aimed at reducing counterparty risk – was to adopt a system of bilateral limits on settlement positions. If a limit is breached, transactions are not recorded during the night until covering funds are transferred. These limits are included in the banks' total limits, which are monitored by the Financial Supervision Authority.

It has been agreed with the banks that the next step in reducing risks in the PMJ system will be to replace the morning clearing with an automated night clearing. This change, which is slated for implementation in spring 2000, will enable complete elimination of counterparty risk in connection with these payment transactions.

Securities settlement systems

Basis for oversight of securities settlement systems

The Treaty establishing the European Community does not mention the task of overseeing securities settlement systems. The ECB's remit in respect of oversight and regulation in this area is understood to be limited to payment systems because the applicable Treaty reference is to ensuring 'sound and efficient clearing and payment systems'.[1] When the Treaty was being drafted, securities settlement systems and related risks were not nearly as topical as they are today, and it is probably for this reason that they were not specifically mentioned in the text.

However, covering the contract price of a transaction in book-entry securities, ie executing the payment – clearly an essential element of the settlement process – can be considered to fall within the ESCB's remit. As payments connected with securities transactions are usually executed on a delivery versus payment (DVP) basis, there is a natural link between the transfer of funds to cover the payment and the delivery of the securities within the context of a book-entry system. Thus the systems for the execution of the payment and delivery legs comprise a single entity that should be monitored within the same overall framework.

The ESCB decided to evaluate settlement systems from the perspective of the large customer. Thus, in order to ensure that the settlement systems that it uses are sufficiently reliable, the ESCB sets minimum requirements (from the users' viewpoint) for these systems. Within the monetary union, central banks require counterparties to post adequate collateral for all credits that it grants. Credit operations undertaken in connection with monetary policy, marginal lending (normally overnight), and intraday credits must be backed by collateral. This demands fluid management of collateral, as changes must often be made quickly during the day. The collateral is generally in book-entry form.

[1] Article 22 of the ESCB Statute.

The Bank of Finland's tasks in this area are, by law, more extensive than those of the ECB and are considered to include oversight of securities settlement systems. The Bank has however not been given the authority to issue regulations in this area.

Standards for settlement systems

At the beginning of 1998 the European Monetary Institute issued minimum standards for securities settlement systems used in ESCB credit operations.[2] There are nine standards: legal soundness; settlement in central bank money; no undue custody risk; regulation and/or control by competent authorities; transparency of risks and conditions for participation; appropriate risk management procedures; intraday finality of settlement; appropriate operating hours and days; and operational reliability. The standards emphasize the user's needs in connection with central bank intervention and collateral but are broad enough to provide a solid foundation for system oversight.

Oversight of euro area settlement systems

The first evaluations based on the standards were carried out in 1998, and the continuous monitoring required for this purpose is organized by each national central bank. As a result of this work, a list has been drawn up of settlement systems approved by the ESCB, including related restrictions and recommendations.[3] It has been decided to update these evaluations at least once a year.

Links have been established between central securities depositories for the transfer of book-entry securities between countries and from one market to another. These links enable cross-border transfers of securities for custodial and settlement purposes and thus facilitate the movement of book-entry securities and support the development of a single European market. So far, only a few Euro-

[2] *Standards for the use of EU securities settlement systems in ESCB credit operations*, EMI, January 1998.

[3] This public document is posted on the Internet (www.ecb.int/press/pr990528.htm).

pean central securities depositories have been linked together. The central banks have considered the transferability of book-entry securities to be crucial and so have stressed the reliability of the links. The central banks have also drawn up a list of links that are eligible for use in their collateral arrangements.[4] The purpose of these arrangements is to ensure an adequate supply of collateral and equal treatment of counterparties throughout the euro area.

Oversight of settlement systems in Finland

The Bank of Finland has played a key role (initially primarily as an owner) in respect of settlement systems for debt instruments, starting with the establishment of Helsinki Money Market Center. With the centralization of settlement and stock market activities,[5] the Bank's ownership role has been substantially reduced and replaced in part by an increased emphasis on its tasks in the area of oversight. The Bank's oversight of settlement systems has focused on debt instruments, shares and, to some extent, derivatives.

The above-mentioned evaluation of settlement systems on the basis of the ESCB standards turned out to be a very extensive oversight operation for the Bank. Subsequently, ongoing oversight has continued via monitoring and participating in the development of system operations. In order to ascertain the adequacy of derivatives-related collateral requirements, simulations were run for the purpose of quantifying settlement risks. As part of preparations for Stage Three of EMU, the Finnish Central Securities Depository (APK) abandoned its guaranteed net settlement arrangement for debt instruments and changed over completely to real-time gross settlement. The old system was inefficient as regards the use of collateral. Recently, a securities lending scheme was also adopted, and this is expected to improve the success rate for meeting settlement deadlines.

While the Finnish settlement system for debt instruments clearly meets international standards, the settlement system for shares still requires considerable development. The present decentralized system is being centralized in order to improve operative reliability and efficiency.

Cooperation between the Bank of Finland and FSA in oversight and supervision

Cooperation between the Bank and the Financial Supervision Authority (FSA) is important for a number of reasons. Ensuring the stability and reliability of payment and settlement systems requires both the oversight of overall systems by the Bank and the supervision of individual institutions by the FSA.

The supervision of banks includes both on-sight inspections and the issuance of regulations and guidelines. The FSA monitors banks' settlement procedures for payments and securities and their participation in joint systems. The focus of the FSA's supervisory activities is on system participants as institutions.

The Bank's oversight, by contrast, focuses on each system as a whole as well as the associated systemic risks and efficiency and structural issues. Besides systemic stability, the Bank actively promotes efficiency in financial market infrastructure.

The Bank and FSA work together closely in connection with payment and settlement systems in order to ensure that oversight and supervision are conducted in a comprehensive and effective manner. An example of this cooperation is the FSA's participation in ESCB evaluations of settlement systems in respect of the APK.

Looking ahead

The need to integrate and centralize payment and settlement systems is one of the challenges now confronting Europe. A requirement for a well functioning single market is an integrated and effective infrastructure. There is already a clear

[4] This public document is posted on the Internet (www.ecb.int/press/pr990528.htm).

[5] First the establishment of the Finnish Central Securities Depository (APK) and later its merger with the Helsinki Exchanges to form Helsinki Exchange Group Ltd Oy.

trend towards the creation of multinational systems. Such systems must have effective means of preventing the spread of systemic problems because these can have snowball effects at international level. For this reason, a prime concern of oversight will continue to be to keep a close eye on international trends and, where necessary, to promote favourable developments. As regards securities settlement systems, there is also a need to put in place the prerequisites for international oversight and to agree on the oversight of multinational systems.

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Key words: supervision, oversight, payment systems, settlement systems

Payments between EU central banks: structure and experiences in early 1999

by Marianne Palva, Head of Division,
Financial Markets Department
Kristina Rantalainen, Senior Collateral Manager
and Hannu Wiksten, Head of Division
Payments and Settlement Department
Bank of Finland

An essential requirement for the practical conduct of the single monetary policy of the euro area countries is a well functioning payment system. In order to facilitate the implementation of monetary policy, the TARGET[1] system was created for handling payments between euro area central banks. The system is used to allocate liquidity in the euro area banking system and provides a means by which financial institutions can execute customers' large-value euro-denominated payments. Whereas only euro area financial institutions can participate in euro area monetary policy operations, euro-denominated payments cover the whole EU area. EU countries that are not in the euro area[2] also participate in TARGET.

Liquidity transferred via TARGET is in the form of central bank credit granted in connection with open market operations of the Eurosystem (ECB and euro area central banks). This credit must be fully collateralized. Since the start of Stage Three of EMU, a wide range of securities issued by governments and corporations in the EU area have been approved for use as collateral. These securities can be used as collateral throughout the EU area on a cross-border basis, regardless of which euro area country they are held in.

Collateral is required not only in connection with open market operations but also in payment transactions, since timing differences between incoming and outgoing payments give rise to liquidity needs. Central banks participate in coverage of liquidity needs by granting collateralized intraday credits. The Correspondent Central Banking Model (CCBM), which was developed for the purpose of managing cross-border collateral, enables central banks to act as securities depositories for each other.

Technical changes to the BoF-RTGS

TARGET was formed by linking the 15 real-time gross settlement systems of the EU countries[3] and the payment mechanism of the European Central Bank (ECB). The linking of the Bank of Finland's interbank funds transfer system (BoF-RTGS[4]) to the EU-wide payment system required substantial technical modifications. In accomplishing the

[1] TARGET refers to Trans-European Automated Real-Time Gross settlement Express Transfer System.

[2] Denmark, Greece, Sweden and the United Kingdom.

[3] In a gross settlement system, incoming and outgoing payments are transferred individually. In TARGET, payments are made in central bank money, which eliminates recipients' counterparty risk. A net settlement is one in which incoming and outgoing payments are netted at designated times. EBA Euro Clearing is a net settlement system (see footnote 8).

[4] BoF-RTGS refers to Bank of Finland Real-Time Gross Settlement system.

cross-border linking, use was made of the SWIFT[5] communication network. An interlinking component[6] was constructed between the BoF-RTGS and SWIFT to handle domestic and cross-border message transfers in connection with the BoF-RTGS. The commercial banks had previously been linked to the BoF-RTGS only via their account holder application. Use of the SWIFT network gave the banks a second means of communicating with the Bank of Finland in connection with domestic payment transactions.

One highly significant change was the addition of a queuing system that enables banks to enter payment orders into queues prior to value dates and that holds payment orders, if necessary, until covering funds become available. Another important change was the development of a monitoring and warning system as an effective means of ensuring the smooth flow of payments. The purpose of all these changes was to create an infrastructure for the EU-wide payment system and thus facilitate banks' liquidity management.

The Bank of Finland's experience with TARGET

In Finland the adoption at the start of October 1998 of the changes required for TARGET was a notably bigger project than the launch of TARGET at the start of this year. In October the use of SWIFT was extended from the Bank of Finland's own cross-border message transmissions to include payment flows between the Bank and domestic financial institutions and loro payments[7] between financial institutions. The inclusion of loro payments resulted in a tripling of volume in the BoF-RTGS during the final quarter of 1998. After adoption of the euro at the start of the year, the number of loro payments dropped by 50 per cent and their total value declined as expected (Charts 1a and 1b).

The earliest-entry-time feature of the queuing system is very useful in the management of bank liquidity. The feature is used a great deal. In fact, almost every day there are several payments waiting for entry but seldom are there payments queued because of a lack of available funds or collateral.

Linking of the BoF-RTGS to systems of other EU central banks has gone well. Some country-specific technical problems have surfaced in TARGET, but their overall effects have been small. The problems with systems of individual countries have not disrupted the whole payment system.

TARGET volumes in Finland

Since TARGET was put into operation, the daily number of payments in the BoF-RTGS has grown and was well over 1,500 in June. The total value was EUR 16 billion. The total values of incoming and outgoing payments are of the same magnitude and account for two-thirds of daily turnover in the BoF-RTGS. In April the number of TARGET payments in Finland declined by about a quarter as Finnish commercial banks began to make wider use of EBA Euro Clearing,[8] which is a net payment system maintained by European banks. The total value of domestic payments in the BoF-RTGS has declined gradually during the early months of this year (Charts 1b and 2). Finnish banks use TARGET mainly for interbank payments. In June customer payments sent from Finland accounted for less than 2 per cent (about EUR 120 billion) of the total value of TARGET payments (about EUR 8,000 billion).

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[5] SWIFT, which refers to Society for Worldwide Interbank Financial Telecommunication, was initiated in the late 1970s to facilitate message transfers in the money and capital markets.

[6] This is a program that links together different countries' RTGSs.

[7] A loro payment is a markka- or euro-denominated interbank payment for which at least one counterparty is a nonresident.

[8] EBA = European Banking Association. EBA Euro Clearing is a payment system that was developed by European commercial banks.

Total payment flows in TARGET have stabilized

The daily number of cross-border payments in TARGET has stabilized in the range of 20,000 (January) to over 30,000. The average daily value of these payments is just under EUR 400 billion, but the figures fluctuate widely, largely in connection with national holidays (Chart 2).

CCBM: part of the payment system infrastructure

The Correspondent Central Banking Model was developed by EU central banks to facilitate payment flows and management of cross-border collateral in connection with ESCB open market operations.

The ESCB strives to treat all counterparties equally. As regards collateral management, this means that collateral requirements and risk management systems are consistent and collateral management as uniform as possible, regardless of the location of credit recipient or collateral within the euro area. Eligible securities issued in euro countries can be used indiscriminately as collateral for open market operations and for covering overdraft limits in the marginal lending facility. For covering intraday overdrafts in the marginal lending facility, an institution can also use as collateral securities issued in EU countries outside the euro area, provided the concerned central banks have separately agreed to such an arrangement. As from 16 August 1999, the Bank of Finland will accept such securities as collateral for intraday credits.

A financial institution can use as collateral securities held in custody in its own or another EU country. The collateral can be either pledged (as in Finland) or based on repos.

The CCBM was originally developed for temporary use, until securities settlement (ECSDA[9]) links are established and decisions are made on a framework for interlinking international settlement

[9] ECSDA = European Central Securities Depositories Association.

Chart 1a.

Number of transactions in BoF-RTGS, daily average

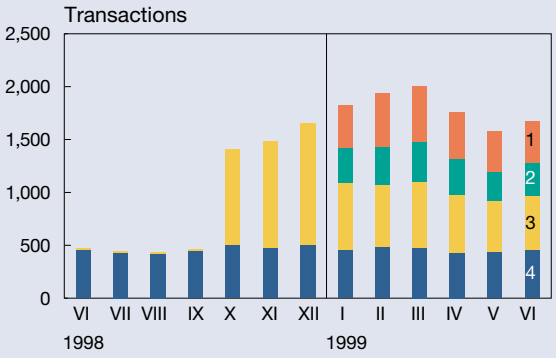
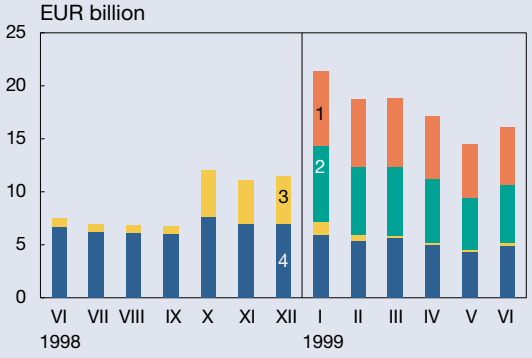


Chart 1b.

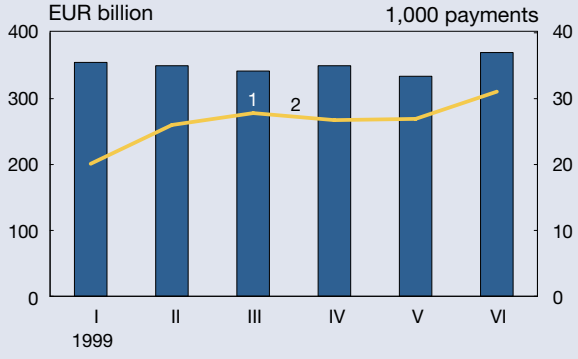
Value of transactions in BoF-RTGS, daily average



1. Incoming TARGET payments
2. Outgoing TARGET payments
3. Loro payments (before Oct 1998, loro clearing)
4. Other RTGS payments and payments between Bank of Finland and settlement account holders

Chart 2.

Outgoing TARGET payments in EU area, daily average, Jan-June 1999



1. Value (left-hand scale)
2. Number (right-hand scale)

systems. It was intended that infrastructures already in place in the different countries would be utilized and that management of cross-border collateral would be accomplished with minimal investment requirements. However, the increasing diversification of eligible securities in the EU area may lead to an extension of the CCBM's lifetime, mainly in connection with collateral issued in EU countries outside the euro area as well as non-marketable collateral.[10]

Use of the CCBM throughout the euro area

The CCBM is based on agreements between the participants. Experiences gained during the first half of 1999 indicate that cross-border use of collateral has been more extensive than expected in the Eurosystem as a whole. About a fourth of the total value of securities used as collateral has been cross-border collateral managed via the CCBM. The most active banks in this area have been French, Luxembourg and German banks. The bulk of securities used as collateral have been issued in the Italian, German and Belgian capital markets, which is partly explained by their key role and size within the international capital markets. There have been definite peaks in numbers of transactions associated with collateral management on the value dates for weekly open market operations.

Use of the CCBM in Finland

The situation in Finland differs somewhat from that described above. Banks in Finland generally use securities issued in Finland as collateral. At the end of June less than 20 per cent of securities (in value terms) pledged to the Bank of Finland[11] was cross-border collateral.

Finnish securities have occasionally been used as collateral in France, Germany and Ireland. In such cases, the Bank of Finland has served as custodian for the concerned central bank.

Summary and a look ahead

TARGET has an important role as a channel for the flow of central bank money. The CCBM ensures that banks can use as collateral securities held in custody in different countries. By speeding up the transfer of payments, these systems facilitate the allocation of liquidity in the EU area banking system and thus promote the unification of the euro area money markets.

Both TARGET and the CCBM are presently doing well in meeting their respective objectives. Looking ahead, the aim is to continue to cooperate with the banks in the ongoing development of TARGET, with particular focus on improving quality of service and operational reliability.

The ECB and central securities depositories in the EU area are working on arrangements for management of cross-border collateral by these depositories. The intention is to eventually use the CCBM only in the management of collateral held in EU countries outside of the euro area and non-marketable collateral.

21 July 1999

Key words: TARGET, CCBM, BoF-RTGS, payment transactions, liquidity, collateral

[10] Some EU countries accept as collateral certain non-marketable securities that are important in the domestic financial markets.

[11] Collateral posted at the Bank is almost always managed via pooling, so that all collateral backs all credit. Open market operations are effected as collateralized lending. In exceptional circumstances, cross-border collateralization may be handled via repos. In such cases, the collateral is earmarked for application only to the credit in question.

The Eurosystem's monetary policy instruments 18 August 1999

Key interest rates

The main refinancing operations are the principal monetary policy instrument used by the Eurosystem[1]. Changes in the interest rate applied in the main refinancing operations signal the stance of the Eurosystem's monetary policy and have a major impact on the shortest money market rates. Pursuant to the decision taken by the Governing Council of the ECB on 8 April 1999, the interest rate applied to the main refinancing operations is 2.5 per cent, effective 14 April 1999.

The Eurosystem uses the rates on its standing facilities to bound overnight market interest rates. The interest rates on the marginal lending facility and the deposit facility are set separately by the Eurosystem. Effective 9 April 1999, the interest rate on the Eurosystem's marginal lending facility is 3.5 per cent and the overnight interest rate on the deposit facility 1.5 per cent.

Open market operations

Open market operations play an important role in the monetary policy of the Eurosystem. They are used for the purposes of steering interest rates, managing the liquidity situation in the market and signalling the stance of monetary policy. Open market operations are normally executed by the national central banks on the initiative of the ECB. Open market operations can be divided into four categories:

1) The *main refinancing operations* are weekly liquidity-providing operations executed by the nation-al central banks through standard tenders and with a maturity of two weeks. They play a pivotal role in pursuing the purposes of the Eurosystem's open market operations and provide the bulk of refinancing to the financial sector.

2) The *longer-term refinancing operations* are liquidity-providing standard tender operations with a monthly frequency and a maturity of three months. These operations aim to provide counterparties with additional longer-term refinancing. In these operations, the Eurosystem does not intend to send signals to the market and therefore the operations are normally executed on the basis of variable-rate tenders.

3) *Fine-tuning operations* are executed on an ad hoc basis in order to smooth interest rate movements caused by unexpected changes in market liquidity. Fine-tuning operations are executed by the national central banks primarily as reverse transactions, but they can also take the form of outright transactions, foreign exchange swaps and the collection of fixed-term deposits. Fine-tuning operations are executed through quick tenders or bilateral procedures. Under exceptional circumstances and by decision of the Governing Council of the ECB, the ECB may execute fine-tuning operations in a decentralized manner.

4) *Structural operations* are executed with the aim of adjusting the structural position of the Eurosystem vis-à-vis the financial sector. Structural operations can be executed through reverse transactions, outright transactions or the issuance of ECB debt certificates.

Standing facilities

The standing facilities are intended to limit excessive momevents in overnight interest rates by providing or absorbing overnight liquidity and to signal the general stance of monetary policy. Two standing facilities are available: the marginal lending facility and the deposit facility. Counterparties can use the marginal lending facility to obtain overnight liquidity from the national central banks against eligible assets. The interest rate on the marginal lending fa-

[1] The European System of Central Banks (ESCB) comprises the European Central Bank (ECB) and the national central banks of the EU member states. The Eurosystem is composed of the ECB and the national central banks of the member states participating in stage Three of Economic and Monetary Union. The Eurosystem's supreme decision-making body is the Governing Council of the ECB, which comprises the six members of the Executive Board of the ECB and the governors of the eleven national central banks forming the Eurosystem.

cility provides a ceiling for the overnight market interest rate. Counterparties can use the deposit facility to make overnight deposits with the national central banks. The interest rate on the deposit facility provides a floor for the overnight market interest rate. Under normal circumstances, there are no quantitative limits on access to the standing facilities.

Minimum reserve system

The Eurosystem's minimum reserve system applies to credit institutions in the euro area and primarily pursues the aims of stabilizing money market interest rates and creating (or enlarging) a structural liquidity shortage. The reserve base of each credit institution is defined in relation to liability items on its balance sheet. The reserve base includes deposits, debt securities issued and money market paper. However, liabilities vis-à-vis other institutions subject to the minimum reserve system are not included in the reserve base. Liabilities included in the reserve base are subject to either a 2 per cent reserve ratio or to a zero reserve ratio. Liabilities included in the reserve base and to which a zero reserve ratio is applied comprise deposits with an agreed maturity of over two years, repos and debt securities issued with an agreed maturity of over two years.

In order to pursue the aim of stabilizing interest rates, the Eurosystem's minimum reserve system enables institutions to make use of averaging provisions. Compliance with the reserve requirement is determined on the basis of the institution's average daily reserve holdings over a one-month maintenance period. Institutions' holdings of required reserves are remunerated at the interest rate of the main refinancing operations. The Eurosystem's minimum reserve requirement is applicable to the following credit institutions that engage in banking business in Finland:

Aktia Savings Bank plc
Citibank International plc, Finland Branch
Crédit Agricole Indosuez, Helsinki Branch
Den Danske Bank, Helsinki Branch
Gyllenberg Private Bank Ltd
Leonia Bank plc
Mandatum Bank Plc
Merita Bank Plc
Okopankki Oyj
OP-Kotipankki Oyj
OKOBANK Osuuspankkien Keskuspankki Oyj
Svenska Enskilda Banken AB (publ), Helsinki Branch
Svenska Handelsbanken AB (publ),
Branch Operation in Finland
Unibank A/S, Helsinki Branch
Skopbank
Bank of Åland plc
Other cooperative and savings banks

Counterparties to monetary policy operations

Credit institutions subject to the Eurosystem's minimum reserve system may, in general, access the Eurosystem's standing facilities and participate in the Eurosystem's main refinancing operations and longer-term refinancing operations. The Eurosystem has, however, limited the number of counterparties for fine-tuning operations and structural operations to counterparties that are active players in the money market. For outright transactions, no restrictions are placed on the range of counterparties. For foreign exchange swaps, the counterparties must be counterparties for foreign exchange intervention operations who are active players in the foreign exchange market.

Assets eligible for monetary policy operations

Under the ESCB/ECB Statute, all the Eurosystem's credit operations must be based on adequate collateral. The Eurosystem accepts a wide range of securities, issued by both public sector and private sector entities, as underlying assets for its operations. For purposes internal to the Eurosystem, eligible assets are divided into two categories. 'Tier one' consists of marketable debt instruments fulfilling uniform euro area-wide eligibility criteria specified by the ECB. 'Tier two' consists of assets, both marketable and non-marketable, that are of particular importance for national financial markets and banking systems and for which eligibility criteria are established by the national central banks and approved by the ECB. Both tier one and tier two assets may be used as collateral for Eurosystem monetary policy operations. A list of eligible assets is available on the ECB's website (https://mfi-assets.ecb.int). More detailed information on the Eurosystem's monetary policy instruments is posted on the Bank of Finland's website (http://www.bof.fi/rhindex.htm).

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Discussion Papers

On the Estimation of Euler Equations in the Presence of a Potential Regime Shift
Pentti Saikkonen – Antti Ripatti
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The concept of a peso problem is formalized in terms of a linear Euler equation and a nonlinear marginal model describing the dynamics of the exogenous driving process. It is shown that, using a threshold autoregressive model as a marginal model, it is possible to produce time-varying peso premia. A Monte Carlo method and a method based on the numerical solution of integral equations are considered as tools for computing conditional future expectations in the marginal model. A Monte Carlo study illustrates the poor performance of the generalized method of moments (GMM) estimator in small and even relatively large samples. The poor performance is particularly acute in the presence of a peso problem but is also serious in the simple linear case.

■ Key words: peso problem, Euler equations, GMM, threshold autoregressive models

The Inflation Target and the Structure of Labour Markets: Implications for Common Monetary Policy
Juha Kilponen
7/99

Both the optimal inflation target and the optimal degree of output stabilization are found to be conditional on the prevailing wage bargaining structure. If monopolistic wage setters act as strategic leaders of the monetary policy game, an explicit inflation targeting regime removes inflation bias from monetary policy, but does not remove the tradeoff related to average level of output and output stabilization. In contrast to the usual results on inflation targeting, appointing a central banker who is more conservative than the government leads to welfare gains for society. If centralization within the national labour markets increases in the common monetary policy area, the monetary policy game with regard to the European Central Bank might be conducted under the strategic leadership of trade union confederations. This leads to a Pareto loss.

■ Key words: monetary policy, labour markets, European Monetary Union, inflation targeting

Forecasting the Electronification of Payments with Learning Curves: The Case of Finland
Jussi Snellman – Jukka Vesala
8/99

The paper examines the electronification of noncash payments in Finland and the extent to which noncash

payment means are used as substitutes for cash. We model the processes of cash substitution and electronification of payments as S-shaped learning curves and generate forecasts by extrapolating these curves. The S-shaped learning curves fit the data well. Our results indicate that in Finland the cash substitution process as a whole is approaching the saturation point. Although the electronification process is clearly ongoing as regards larger-value bill payments, for small-value point-of-sale payments we seem to have reached saturation. Electronification of payments, having progressed swiftly and extensively in Finland, is already beginning to slow down. We conclude the paper with a discussion of the reasons for this turn of events and of the different factors that affect the speed of diffusion of new means of payment.

■ Key words: payments, electronification, learning curves

Central Bank Independence and Wage Bargaining Structure: Empirical Evidence
Juha Kilponen
9/99

The paper studies the relationship between central bank independence, wage bargaining structure and macroeconomic performance in OECD countries. A cross-sectional time-series (TSCS) model for inflation, nominal wage growth and unemployment for the period 1973–1996 is estimated using different and updated measures of central bank independence. The importance of the price stability objective in the central bank statute is used as a proxy for the degree of conservativeness of the central bank. A recently published data set on wage bargaining structure is used, and a distinction is made between coordination of wage bargaining and formal centralization. A new measure of union power is constructed, which combines formal centralization and union density. The implications of the large differences that can be seen between coverage and unionization rates in some countries are briefly discussed. Two important results emerge. First, the central bank's political independence and personnel independence contribute most importantly to a successful inflation policy. Second, a high level of coordination contributes to moderate inflation rates and unemployment, while union monopoly power tends to increase inflation.

■ Key words: central bank independence, wage bargaining, monetary policy

Unemployment in a Small Open Economy: Finland and New Zealand
David G. Mayes – Jouko Vilmunen
10/99

Unemployment is now the key issue for economic policy in the OECD and Europe in particular. By examining data from the period 1962–1996 using a VEC model for two highly different small open OECD economies, Finland and New Zealand, the paper seeks to cast light on three questions: the degree to which unemployment has been the result of slow adjustment to large external shocks; the degree to which differences in labour market structures can lead to different responses to shocks; the importance of the exchange rate and the external sector in resolving the problem. The approach uses a fairly general model of the labour market that includes wages, unemployment, the capital stock and the terms of trade. It uses cointegration analysis to establish long-run relationships among the four variables. In the case of Finland we find that the short-run response of unemployment to shocks (to the long-run relationship) is large relative to the response of real wage and the terms of trade. In New Zealand, on the other hand, both real wages and the terms of trade, in particular, adjust more rapidly. As a result the burden of short-run adjustment in the New Zealand economy appears to fall more heavily on (relative) prices. Since the unemployment rate in both countries displays hysteresis, these results suggest that relative price adjustment in the New Zealand economy is more effective in preventing adverse aggregate shocks from becoming adverse unemployment shocks.

■ Key words: unemployment, open economy, structural change, labour market

BOFIT Discussion Papers

Black cash tax evasion in Russia:
Its forms, incentives and consequences at firm level
Andrei Yakovlev
3/99

This paper discusses Russia's 'black cash' economy. Using interviews and survey data, we examine the mechanics of several distinctly Russian tax evasion schemes and attempt a rough estimate of the scale and dynamics involved in tax evasion based on black cash. Entrepreneurs' opinions are also used to get an idea of the incentives and costs of black cash tax evasion. We next describe the apparent economic consequences of black cash tax evasion and formulate general formal conditions for successful evasion at firm level. Finally, we recommend several policy measures to reduce the incentives to such behaviour and discuss possibilities for future research.

■ Key words: tax evasion, informal business activity, 'black cash', Russia

Managing uncertainty:
Hierarchies, Markets and 'Networks' in the Russian Timber Industry, 1991–1998
Barbara Lehmbruch
4/99

The paper investigates institutional developments in the Russian forestry sector after 1991. As it argues, while there has been a great degree of decentralization, original market-oriented reform blueprints for the industry were only partially implemented. The reasons for this can be found largely in the failure of weak state institutions to standardize and universalize transactions. Attempts to restore top-down, Moscow-centred branch administration in the form of a state committee have also failed. The paper asks how best to describe the highly personalistic transactional landscape that has emerged from the failure of hierarchies and markets. It argues that there is little evidence of 'clan'-style 'directors' networks' based on direct personal trust. Rather, economic actors prefer a two-pronged strategy of dealing with environmental uncertainty: While attempting to minimize environmental exposure by establishing forms of vertical integration, they also hedge their exposure by maintaining multiple, often loose outside affiliations. This, it is argued, applies to both the horizontal, business-to-business level and to vertical cliental relations with state actors.

■ Key words: Russia, timber industry, organizations

Finland in brief

Land, climate and population

Finland covers an area of more than 338 000 square kilometres. The total area is slowly increasing because of the steady uplift of the land since the last glacial era. The country shares frontiers with Sweden in the west, Norway in the north and Russia in the east and has a coastline bordered by the Baltic Sea in the south and west. Agricultural land accounts for 6 % of the total area, forest and other wooded land for 68 % and inland waters for 10 %. Located between latitudes 60° and 70° north, Finland has warm summers and cold winters. Helsinki on the south coast has an average maximum temperature of 21° C (70° F) in July and –3 ° C (25° F) in February.

Finland has a population of 5 159 646 (31 December 1998) and an average population density of 17 per square kilometre. The largest towns are Helsinki (Helsingfors), the capital, with 546 317 inhabitants, Espoo (Esbo) 204 962, Tampere (Tammerfors) 191 254, Vantaa (Vanda) 173 860 and Turku (Åbo) 170 931.

There are two official languages: 93 % of the population speaks Finnish as its mother tongue and 5.7 % Swedish. There is a small Lapp population in the north. Finnish is a member of the small Finno-Ugrian group of languages, which also includes Estonian and Hungarian.

Form of government

Finland is a parliamentary democracy with a republican constitution. From the twelfth century to 1809 Finland was part of the Kingdom of Sweden. In 1809 Finland was annexed to Russia as an autonomous Grand Duchy with the Tsar as Grand Duke. On 6 December 1917 Finland declared her independence. The republican constitution adopted in 1919 remains essentially unchanged today.

The legislative power of the country is exercised by Parliament and the President of the Republic. The supreme executive power is vested in the President, who is elected for a period of six years. The President for the current term, 1 March 1994 to 1 March 2000, is Mr Martti Ahtisaari.

Parliament, comprising 200 members, is elected by universal suffrage for a period of four years. Following the parliamentary elections of 1999, the seats of the various parties in Parliament are distributed as follows:

Social Democratic Party 51; Center Party 48; National Coalition Party 46; Left Alliance 20; Swedish People's Party 12; Green League 11; Christian League 10; True Finns 1; and Reform Group 1.

Of the 18 ministerial posts in the present Government appointed in April 1999, 6 are held by the Social Democratic Party, 6 by the National Coalition Party, 2 by the Left Wing Alliance, 2 by the Swedish People's Party, 1 by the Green League and 1 by an expert with no party affiliation. The Prime Minister is Mr Paavo Lipponen of the Social Democratic Party.

Finland is divided into 452 self-governing municipalities. Members of the municipal council are elected by universal suffrage for a period of four years.

International relations

Finland became a member of the BIS in 1930, the IMF in 1948, the IBRD in 1948, GATT in 1950, the UN in 1955, the Nordic Council in 1955, the IFC in 1956, IDA in 1960, EFTA in 1961, the ADB in 1966, the OECD in 1969, the IDB in 1977, the AfDB in 1982, the MIGA in 1988, the Council of Europe in 1989, the EBRD in 1991 and the EU in 1995.

Citizens of the five Nordic countries, Denmark, Finland, Iceland, Norway and Sweden, have enjoyed a common labour market, a passport union and reciprocal social security benefits since the mid-1950s.

Having abolished most quantitative restrictions on foreign trade in 1957, Finland first took part in European free trade arrangements under the auspices of EFTA in 1961. Finland's free trade agreement with the EEC entered into force in 1974 and agreements for the removal of trade barriers were concluded with several eastern European countries as well. The agreement on the European Economic Area (EEA) between the member countries of EFTA and the European Union came into effect at the beginning of 1994. Finland became a member of the European Union on 1 January 1995. Finland and ten other EU countries entered to Stage Three of EMU in 1999.

The economy

Output and employment. Of the gross domestic product of FIM 593 (EUR 100) billion in basic values in 1998, 1.3 % was generated in agriculture, hunting and fishing, 2.5 % in forestry, 28.2 % in industry, 5.6 % in construction, 12.3 % in trade, restaurants and hotels, 10.0 % in transport and communications, 3.8 % in finance and insurance, 15.6 % in other private services and 20.7 % by producers of government services. Of total employment of 2.2 million persons in 1998, 7.4 % were engaged in primary production, 28.3 % in industry and construction and 64.3 % in services.

In 1998, expenditure on the gross domestic product in purchasers' values amounted to FIM 686 (EUR 115) billion and was distributed as follows: net exports 8.9 % (exports 39.4%, imports –30.5%), gross fixed capital formation 18.4 %, private consumption 50.2 % and government consumption 21.4 %. Finland's tax ratio (gross taxes including compulsory employment pension contributions relative to GDP) was 46.2 per

cent, which is somewhat below the average for the Nordic countries.

Average annual (compounded) growth of real GDP was 4.7 % in the period 1950–59, 5.0 % in 1960–69, 3.7 % in 1970–79, 3.7 % in 1980–89 and 1.4 % in 1990–98. Finland's GDP per capita in 1998 was USD 24 923.

Foreign trade. EU countries absorb the bulk of Finnish merchandise exports. In 1994–1998 their average share was 53.5%. Over the same period, Finland's exports to other European countries (including Russia) accounted for 20.6 % and to the rest of the world for 25.9 %. The regional distribution of Finland's merchandise imports in the same period has been quite similar to that of exports: EU countries accounted for 56.4 %, other European countries for 19.6 % and the rest of the world for 24.0 %.

In 1998, the share of forest industry products in total merchandise exports was 30.5 %, the share of metal and engineering products 45.8 % and the share of other goods 23.7 %. Raw materials and intermediate goods (incl. crude oil) accounted for 56.3 % of merchandise imports, fuels for 2.7 %, investment goods for 16.7% and consumption and other goods for 24.3%.

Forest resources. Finland has abundant forest resources but only limited amounts of other raw materials. The growing stock comprises 1 937 million cubic metres, of which 46 % is pine, 36 % spruce, 15 % birch and 3 % other broad-leaved species.

According to the National Forest Inventory for 1992–1998, the annual volume increment was about 76.3 million cubic metres. Over the same period the average annual drain was about 59 million cubic metres.

Finance and banking

Currency. Finland had its own monetary system from 1865 to 1998. The currency unit was the markka (plural markkaa), which was divided into 100 penniä (singular penni). During the last decades of this period the objective of foreign exchange policy was to maintain a fixed exchange rate in relation to a given currency basket. On 8 September 1992 the markka was allowed to float. On 14 October 1996 the markka joined the Exchange Rate Mechanism of the European Monetary System. Since the beginning of 1999 Finland has participated in the single currency area, in accordance with the Treaty establishing the European Community. The conversion rate for the markka, as confirmed by the Council of the European Union on 31 December 1998, is 5.94573. With effect from the beginning of 1999 the currency unit used in Finland is the euro, which is divided into 100 cent. The markka will, however, remain as the national denomination of the euro until the year 2002, and during this time notes and coins denominated in markkaa will continue to be used.

The Central Bank. The two new laws adopted in 1997 and 1998 make Finnish legislation compatible with the requirements of the Treaty establishing the European Community and the Statute of the European System of Central Banks and the European Central Bank. The latter law, the new Act on the Bank of Finland, integrates the Bank of Finland into the ESCB. In performing the tasks of the ESCB, the Bank of Finland acts in accord with guidelines and instructions issued by the ECB. Under the Treaty, the primary objective of the Bank of Finland is to maintain price stability. The new Act did not change the division of responsibilities between the Parliamentary Supervisory Council and the Board. The tasks of the Council are connected with supervision of the Bank's administration and operations, administrative decisions and certain other responsibilities. The Board of the Bank of Finland comprises the Chairman (Governor) and a maximum of five (currently three) other members, all of whom are appointed by the President of the Republic upon a proposal from the Council. The Chairman of the Board is appointed for a seven-year term and the other members of the Board each for a five-year term. The Bank of Finland has a head office in Helsinki and four branch offices in other towns.

Other banks (31 Dec 1998). Finland has three major groups of deposit banks with a total of about 1 600 offices. There are two big commercial banks with national branch networks and seven smaller ones. The commercial banks have a total of 13 foreign branches, subsidiaries and associate banks and 17 representative offices abroad. There are 40 savings banks and 294 cooperative banks, both with extensive branch networks. In addition, 6 foreign banks have branches and 6 foreign banks have representative offices in Finland.

Financial markets. The total stock of domestic credit amounted to FIM 722.5 (EUR 121.5) billion at end-March 1999 and was broken down by lender group as follows: deposit banks 52 %; insurance companies 6 %; pension insurance institutions 23 %; other credit institutions 9 %; central and local authorities and social security funds 10 %.

In the money market, the total value of instruments outstanding was about FIM 118.8 (EUR 20.0) billion at end-June 1999; bank certificates of deposit accounted for 68 % of the total and Treasury bills, commercial paper and local authority paper for the rest.

At end-December 1998 there were 91 companies on the Main List, 40 on the Investors' List and one company on the Prelist of the HEX, Helsinki Exchanges. At end-June 1999 total market capitalization was FIM 1091.2 (EUR 183.5) billion for the Main List, FIM 10.3 (EUR 1.7) billion for the Investors' List and FIM 0.8 (EUR 0.1) billion for the NM List. Domestic bonds and debentures in circulation at end-June 1999 amounted to FIM 323.1 (EUR 54.3) billion; government bonds accounted for 82 % of the total. Share turnover on the HEX, Helsinki Exchanges amounted to FIM 323.0 (EUR 54.3) billion in 1998. In January–June 1999 share turnover amounted to FIM 239.4 (EUR 40.3) billion.

VISITING SCHOLARS PROGRAMME

BANK OF FINLAND

***The Bank of Finland**, the national central bank, has 750 employees, some 30 of whom are involved in research. The Bank is located in Helsinki.*

The Bank of Finland welcomes applications from foreign and Finnish scholars for a post under the Bank's Visiting Scholars Programme at the Research Department. Scholarships for six months are available for faculty or post-doctoral level research projects in two main research areas:

(1) The modelling of monetary policy
(2) The future of the financial services sector.

In the area of monetary policy modelling, we are especially interested in incorporating the analysis of credibility and policy uncertainty in applied models that could be used to analyze monetary policy in practice. The second area aims at illuminating the ongoing structural transformation of the global financial services industry, as driven by electronification and increased competition in particular. This area includes stability and other public policy aspects of the transformation.

A visiting scholar will be expected to conduct research based on a mutually agreed research plan. Articles stemming from the research are expected to be included in the Bank's Discussion Papers and may be published elsewhere as well. A visiting scholar should normally also give a lecture at the Bank to an audience of economists on his or her research topic as well as interact with other researchers engaged in projects in the same area.

Remuneration for visiting scholars will be commensurate with their research experience.

Persons interested in applying are invited to send

– a brief research proposal concerning either of the two areas

– a CV specifying the applicant's academic and research background, with the names of two or three referees

to: Research Department
Bank of Finland
P.O.Box 160
Helsinki, Finland
Fax: +358 9 183 2560
Email: Kaisa-Liisa.Nordman@bof.fi

Inquiries: Juha Tarkka, Head of Research Department,
phone +358 9 183 2581, email Juha.Tarkka@bof.fi
or
Jouko Vilmunen, Research Supervisor, Research Department
phone +358 9 183 2594, email Jouko.Vilmunen@bof.fi

SUOMEN PANKKI • FINLANDS BANK

Balance sheet of the Bank of Finland, million EUR

		1999			
		28.5.	25.6.	30.7.	27.8.
Assets					
1	**Gold and gold receivables**	411	411	397	397
2	**Claims on non-euro area residents denominated in foreign currency**	7 573	7 726	7 618	7 572
2.1	Receivables from the IMF	938	932	902	887
2.2	Balances with banks and security investments, external loans and other external assets	6 636	6 793	6 716	6 685
3	**Claims on euro area residents denominated in foreign currency**	464	339	485	523
4	**Claims on non-euro area residents denominated in euro**	1 699	5 092	0	94
4.1	Balances with banks, security investments and loans	1 699	5 092	0	94
4.2	Claims arising from the credit facility under the ERM II	0	0	0	0
5	**Lending to financial sector counterparties of euro area**	750	1 282	1 368	535
5.1	Main refinancing operations	714	1 246	1 248	393
5.2	Longer-term refinancing operations	34	34	119	140
5.3	Fine-tuning reverse operations	0	0	0	0
5.4	Structural reverse operations	0	0	0	0
5.5	Marginal lending facility	0	0	0	0
5.6	Credits related to margin calls	0	0	0	0
5.7	Other lending	2	2	2	2
6	**Securities of euro area residents denominated in euro**	0	0	0	0
7	**General government debt denominated in euro**	0	0	0	0
8	**Intra-Eurosystem claims**	2 563	4 483	5 799	1 549
8.1	Participating interest in ECB	70	70	70	70
8.2	Claims equivalent to the transfer of foreign currency reserves	699	699	699	699
8.3	Claims related to the issuance of ECB debt certificates	0	0	0	0
8.4	Other claims within the Eurosystem (net)	1 794	3 715	5 031	780
9	**Other assets**	636	623	662	661
Total assets		14 096	19 956	16 330	11 331

Totals/sub-totals may not add up because of rounding.

		1999			
		28.5.	25.6.	30.7.	27.8.
Liabilities					
1	**Banknotes in circulation**	2 555	2 676	2 654	2 604
2	**Liabilities to euro area financial sector counterparties denominated in euro**	2 039	1 857	1 656	1 736
2.1	Current accounts (covering the minimum reserve system)	2 039	1 855	1 656	1 736
2.2	Deposit facility	0	2	0	0
2.3	Fixed-term deposits	0	0	0	0
2.4	Fine-tuning reverse operations	0	0	0	0
2.5	Deposits related to margin calls	0	0	0	0
3	**Liabilities to other euro area residents denominated in euro**	2	2	2	1
3.1	General government	0	0	0	0
3.2	Other liabilities	2	2	2	1
4	**Liabilities to non-euro area residents denominated in euro**	5 043	10 951	7 516	2 506
5	**Liabilities to euro area residents denominated in foreign currency**	0	0	0	0
6	**Liabilities to non-euro area residents denominated in foreign currency**	185	173	90	60
6.1	Deposits, balances and other liabilities	185	173	90	60
6.2	Liabilities arising from the credit facility under the ERM II	0	0	0	0
7	**Counterpart of special drawing rights allocated by the IMF**	181	182	185	185
8	**Intra-Eurosystem liabilities**	0	0	0	0
8.1	Liabilities related to promissory notes backing the issuance of ECB debt certificates	0	0	0	0
8.2	Other liabilities within the Eurosystem (net)	0	0	0	0
9	**Other liabilities**	152	176	193	206
10	**Revaluation account**	823	823	917	917
11	**Capital and reserves**	3 116	3 116	3 116	3 116
Total liabilities		14 096	19 956	16 330	11 331

Charts

1. Finland: key economic indicators
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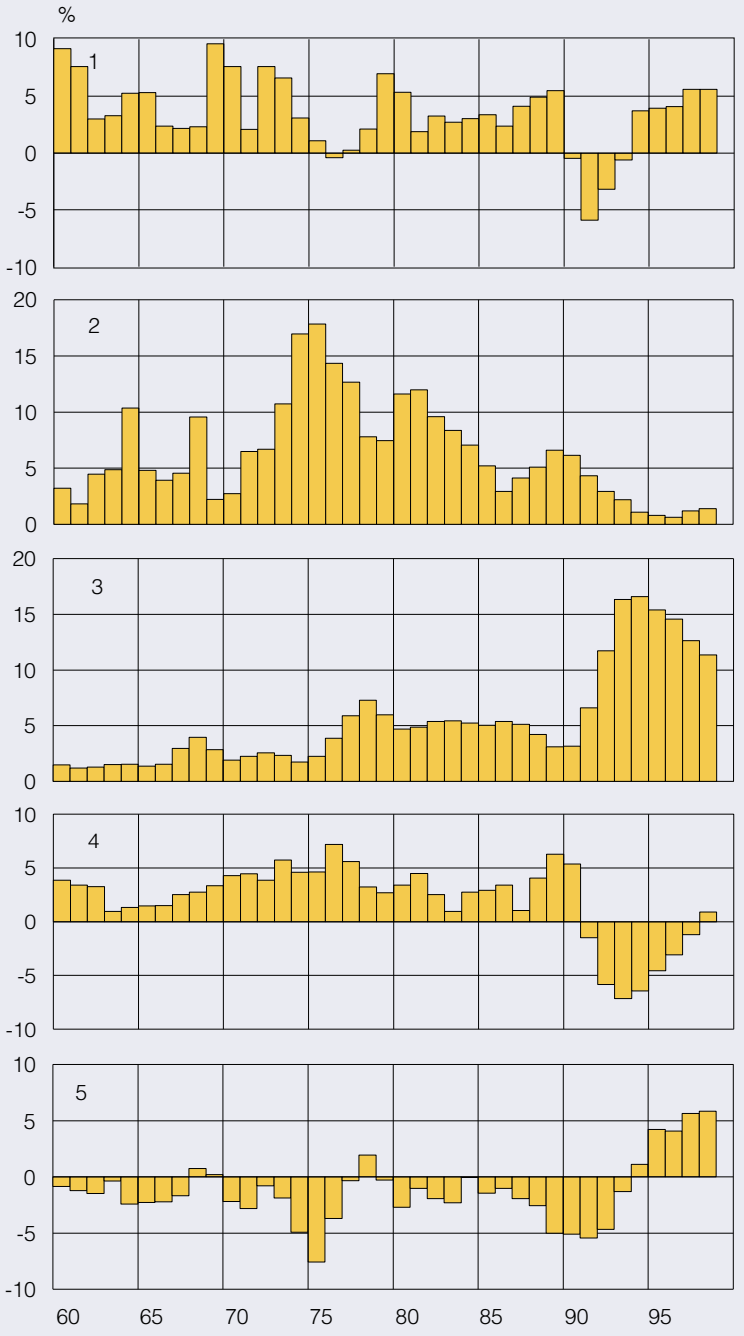
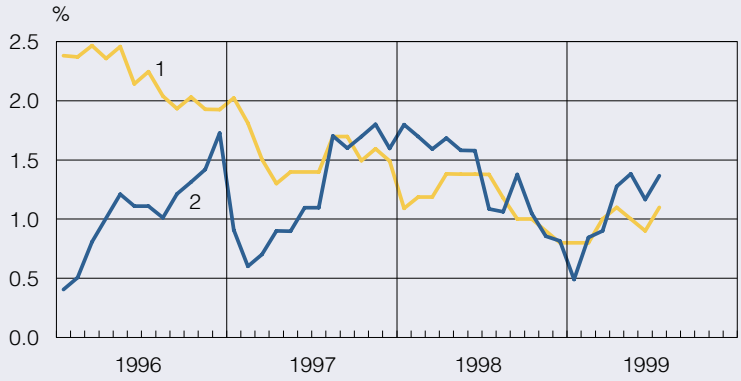
58. Selected asset prices in Finland

1. Finland: key economic indicators



1. GDP, volume change from previous year
2. Consumer prices, change from previous year
3. Unemployment rate
4. General government fiscal position, % of GDP
5. Current account, % of GDP

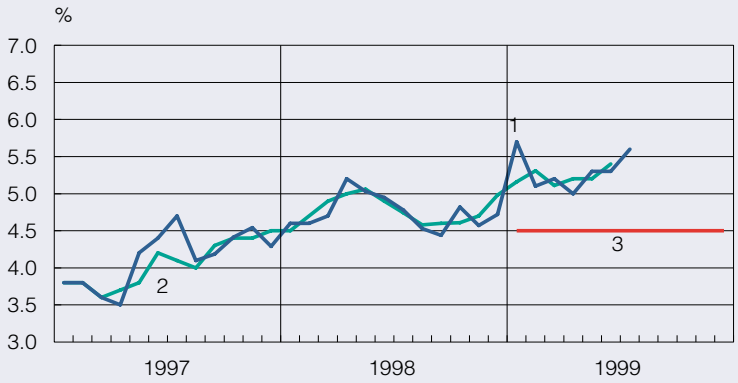
2. Price stability in the euro area and Finland



Harmonized Index of Consumer Prices, 12-month percentage change

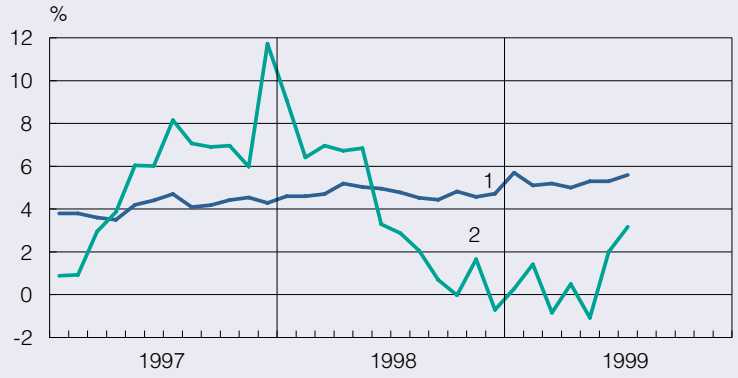
1. Euro area countries
2. Finland

3. Monetary aggregates for the euro area



1. M3, 12-month percentage change
2. M3, 12-month percentage change, smoothed by means of a 3-month moving average
3. Eurosystem's reference value for the growth of M3

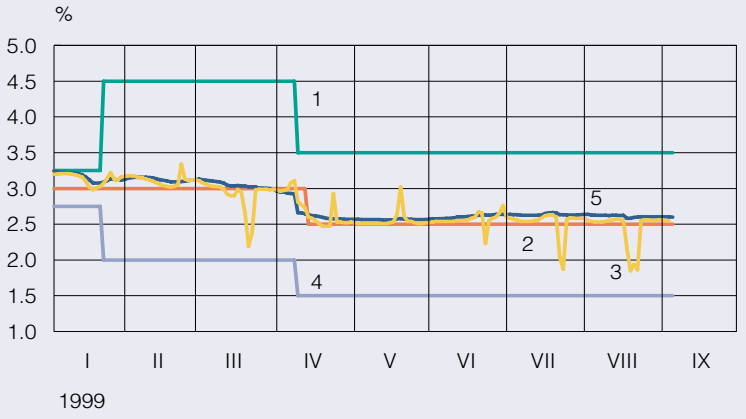
4. Growth of the money stock in the euro area and Finland



12-month percentage change

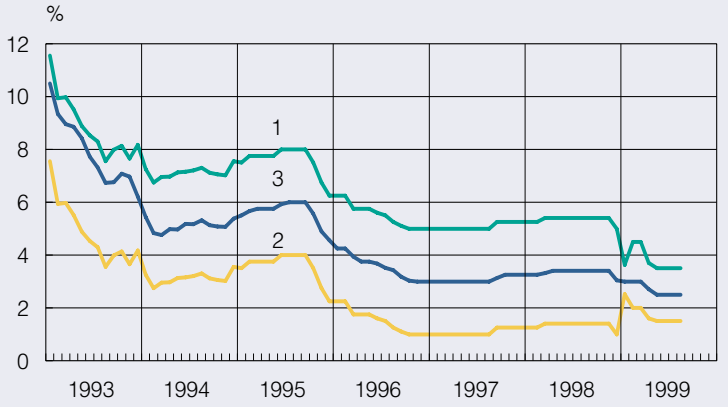
1. M3 for the euro area
2. Deposits and other liabilities of Finnish monetary financial institutions included in M3

5. Eurosystem interest rates and money market rates



1. Marginal lending rate
2. Main refinancing rate
3. Eonia rate
4. Deposit rate
5. 1-month Euribor

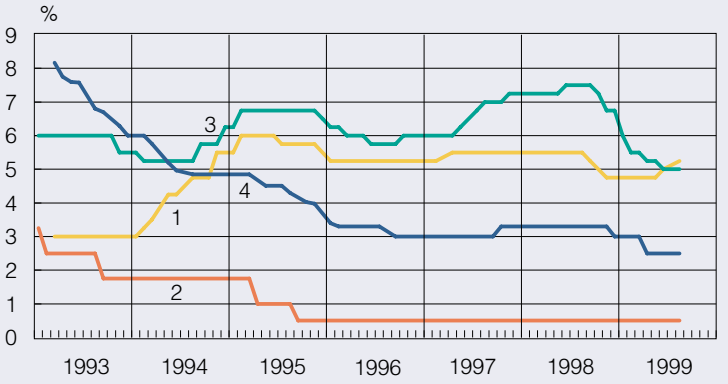
6. Eurosystem (Bank of Finland) interest rates



Bank of Finland interest rates until end-1998

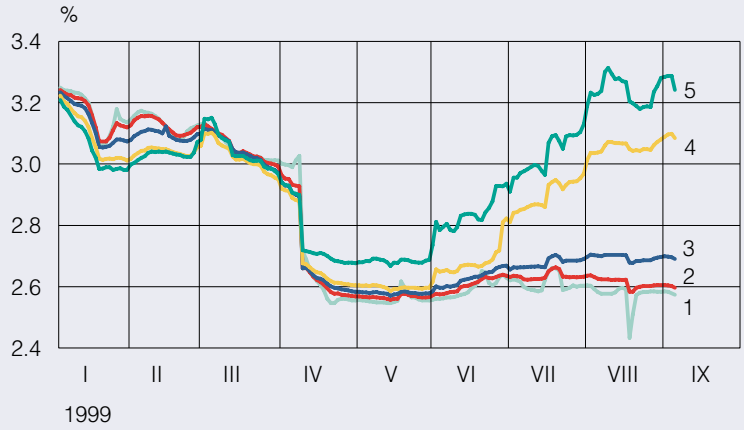
1. Marginal lending rate (liquidity credit rate until end-1998)
2. Deposit rate (excess-reserve rate until end-1998)
3. Main refinancing rate (tender rate until end-1998)

7. Official interest rates



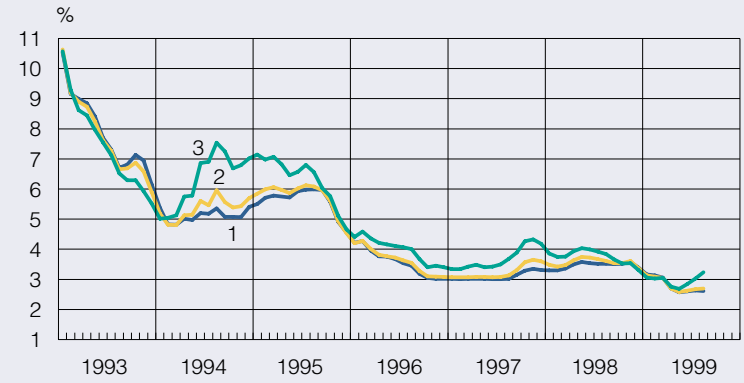
1. USA: fed funds target rate
2. Japan: discount rate
3. United Kingdom: base rate
4. Eurosystem: main refinancing rate (German repo rate until end-1998)

8. Euribor rates, daily values



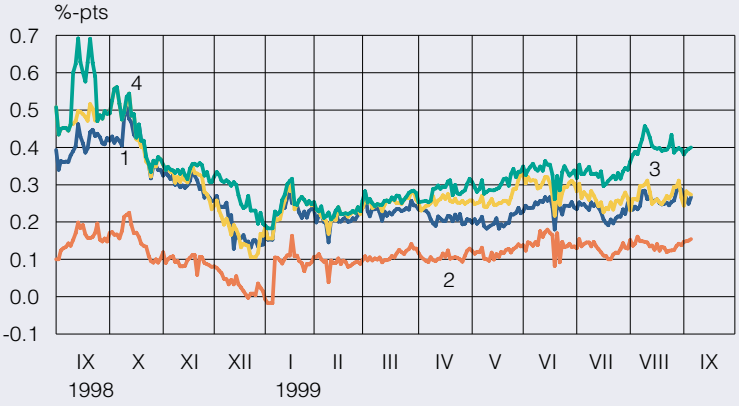
1. 1-week
2. 1-month
3. 3-month
4. 6-month
5. 12-month

9. Euribor rates, monthly values



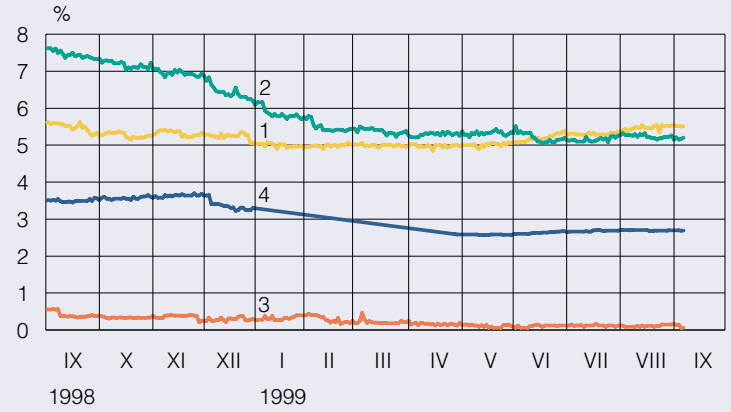
Helibor rates until end-1998
1. 1-month
2. 3-month
3. 12-month

10. Differentials between ten-year yields for Germany and selected euro area countries



1. Finland
2. France
3. Italy
4. Largest differential

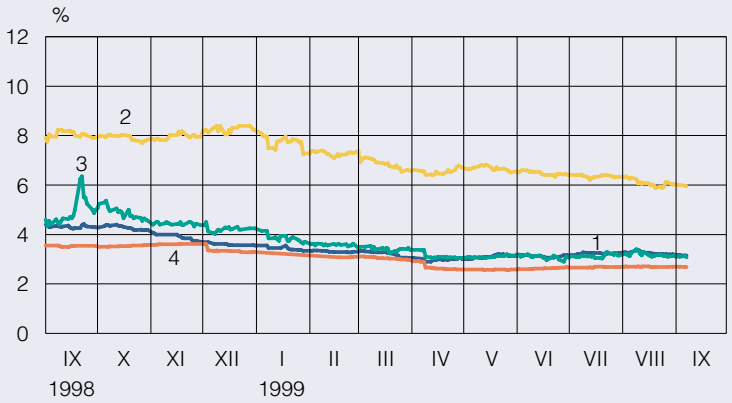
11. International three-month interest rates, daily values



Interbank rates

1. United States
2. United Kingdom
3. Japan
4. Euro area
   (Germany until end-1998)

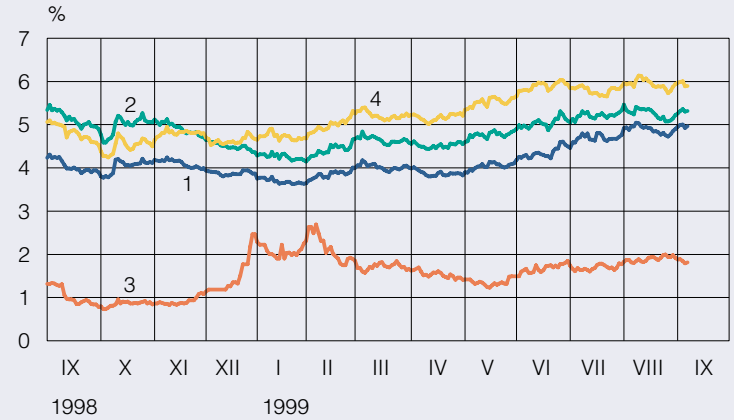
12. Three-month interest rates in the Nordic countries, daily values



Interbank rates

1. Sweden (Stibor)
2. Norway
3. Denmark
4. Finland (Euribor; Helibor until end-1998)

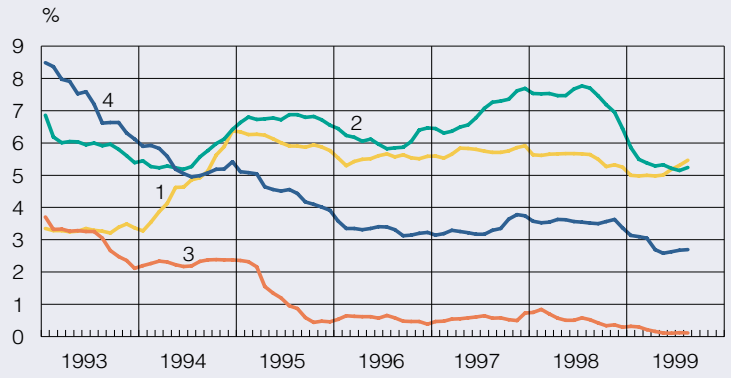
13. International long-term interest rates, daily values



Yields on ten-year government bonds

1. Germany
2. United Kingdom
3. Japan
4. United States

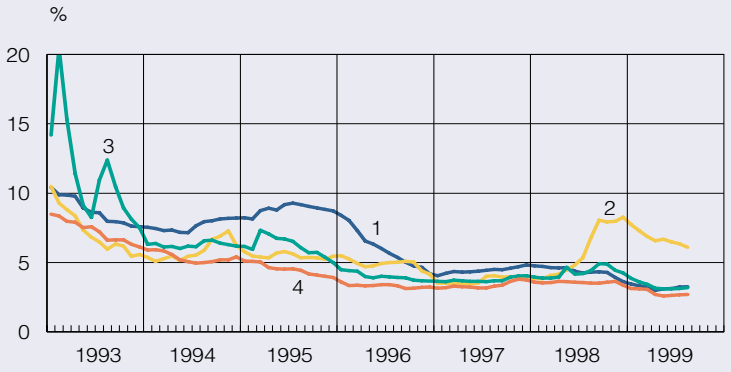
14. International three-month interest rates, monthly values



Interbank rates

1. United States
2. United Kingdom
3. Japan
4. Euro area
   (Germany until end-1998)

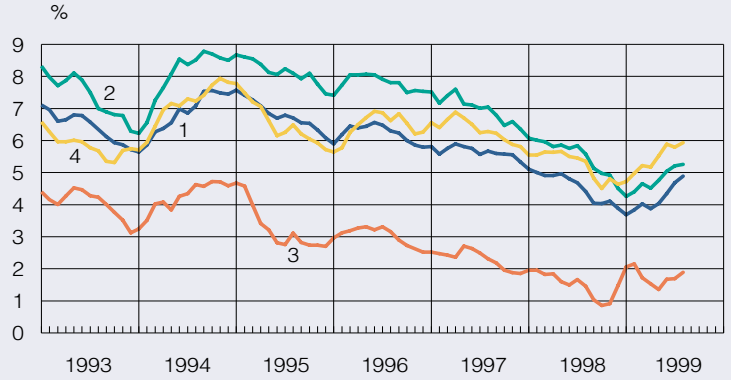
15. Three-month interest rates in the Nordic countries, monthly values



Interbank rates

1. Sweden (Stibor)
2. Norway
3. Denmark
4. Finland (Euribor; Helibor until end-1998)

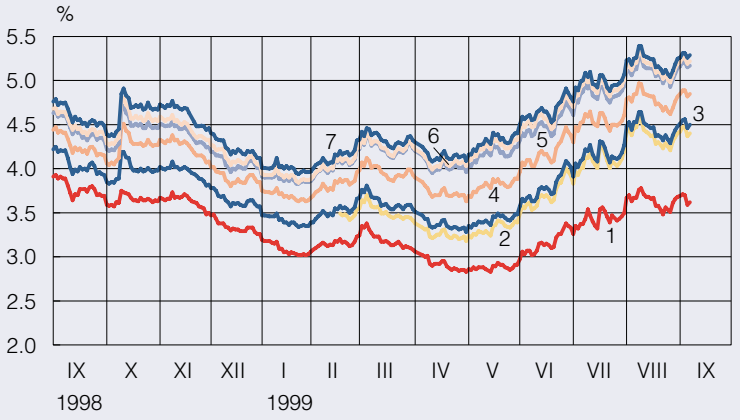
16. International long-term interest rates, monthly values



Yields on ten-year government bonds

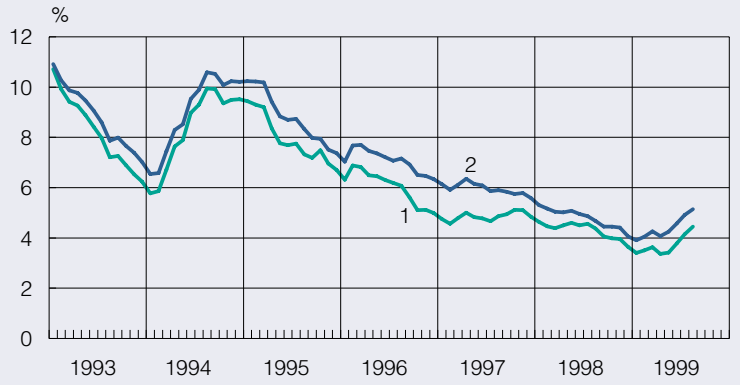
1. Germany
2. United Kingdom
3. Japan
4. United States

17. Yields on Finnish benchmark government bonds



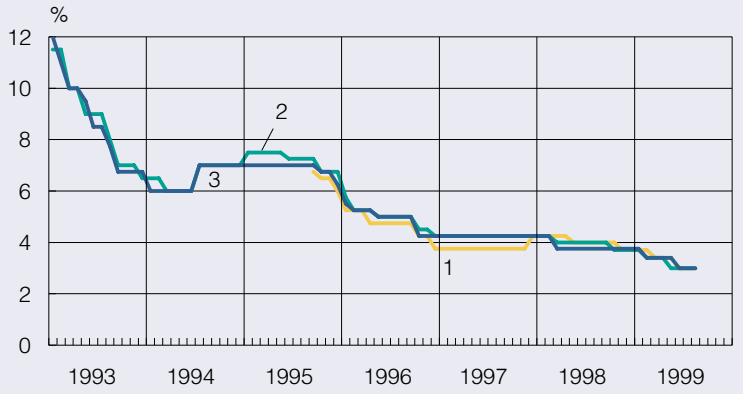
1. Bond maturing on 15 September 2001, 10 %
2. Bond maturing on 12 November 2003, 3.75 %
3. Bond maturing on 15 March 2004, 9.5 %
4. Bond maturing on 18 April 2006, 7.25 %
5. Bond maturing on 25 April 2008, 6 %
6. Bond maturing on 25 April 2009, 5 %
7. Bond maturing on 15 October 2010, 8.25 %

18. Yields on five and ten-year Finnish government bonds



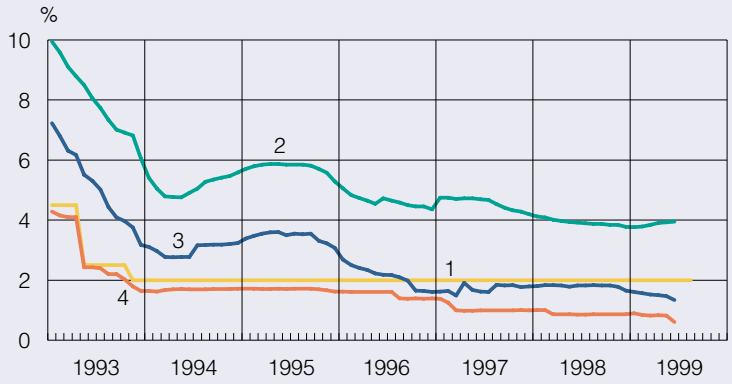
1. 5 years
2. 10 years

19. Bank reference rates in Finland



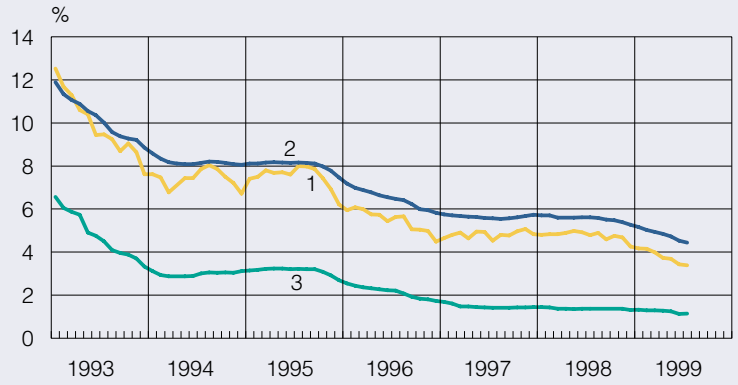
1. Merita prime
2. Leonia prime
3. OKOBANK group prime

20. Bank deposit rates in Finland



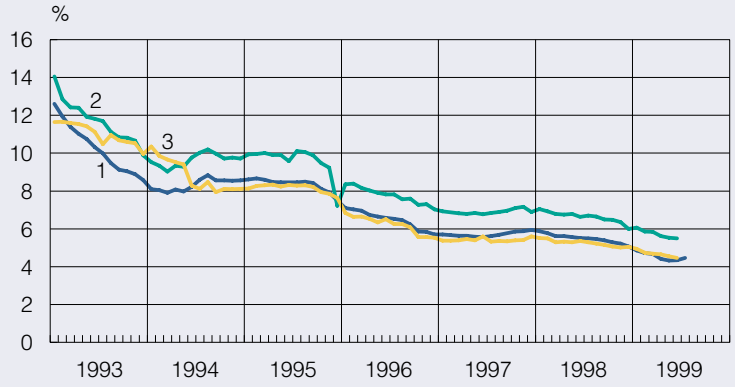
1. Rate on tax-exempt transaction accounts (upper limit)
2. Average rate on fixed-term deposits subject to withholding tax
3. Average rate on cheque and transaction accounts subject to withholding tax
4. Average rate on tax-exempt cheque and transaction accounts

21. Bank lending and deposit rates in Finland



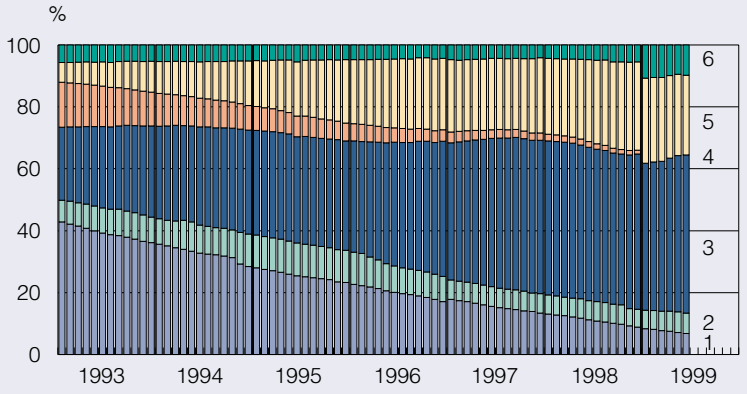
1. Rate on new lending
2. Average lending rate
3. Average deposit rate

22. Interest rates charged by Finnish banks on new lending to households



1. New housing loans
2. New consumer credits
3. New study loans

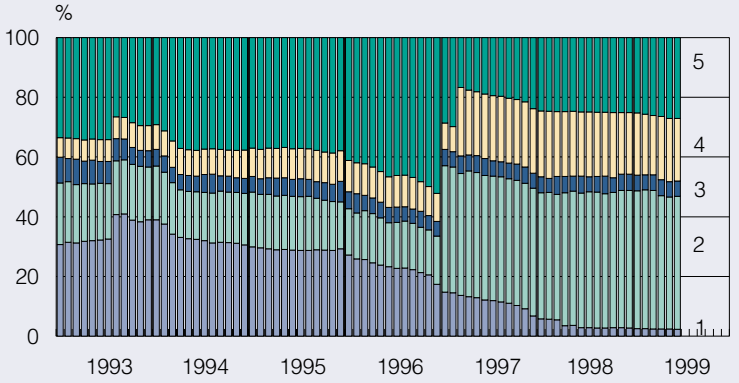
23. Stock of bank lending in Finland



Interest rate linkages, percentages

1. Linked to base rate
2. Fixed-rate
3. Linked to Euribor (Helibor until end-1998)
4. Linked to 3 and 5-year reference rates
5. Linked to reference rates of individual banks (prime rates etc)
6. Other

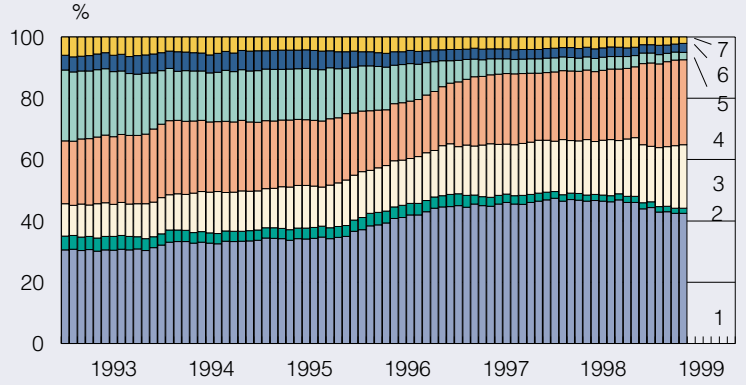
24. Stock of bank deposits in Finland by interest rate linkage



Interest rate linkages, percentages

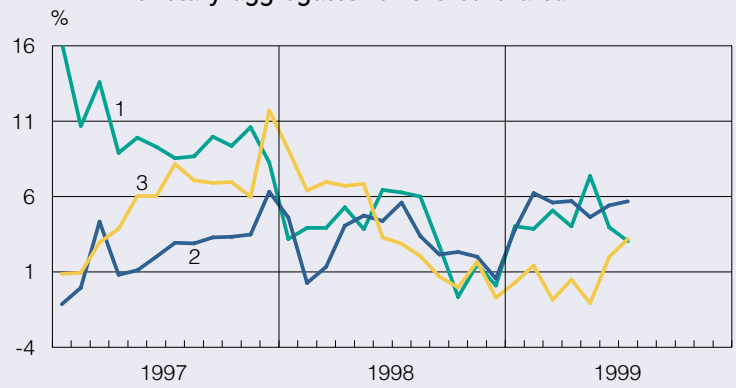
1. Linked to base rate
2. Fixed-rate
3. Linked to Euribor (Helibor until end-1998)
4. Linked to reference rates of individual banks (prime rates etc)
5. Other

25. Stock of bank deposits in Finland by tax treatment



1. Tax-exempt cheque and transaction accounts
2. Cheque and transaction accounts subject to withholding tax
3. Other taxable cheque and transaction accounts
4. Tax-exempt fixed-term accounts and other accounts
5. Fixed-term accounts and other accounts subject to withholding tax
6. Other taxable accounts
7. Foreign currency accounts

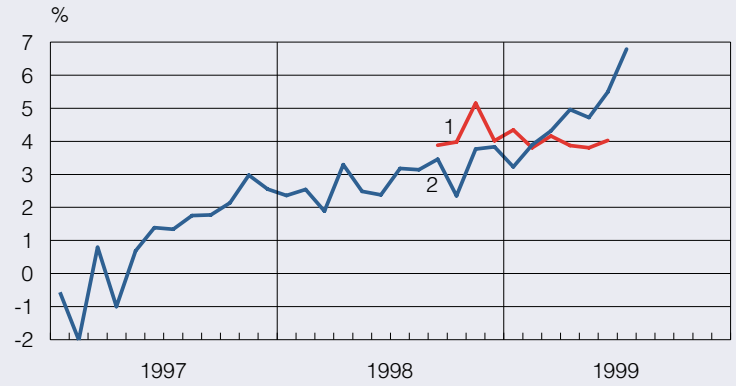
26. Liabilities of Finnish monetary financial institutions included in monetary aggregates for the euro area



12-month percentage change

1. Items included in M1: transaction accounts (=overnight deposits)
2. Items included in M2: all deposits except fixed-term deposits of over 2 years
3. Items included in M3: M2 deposits plus certain securities and other items

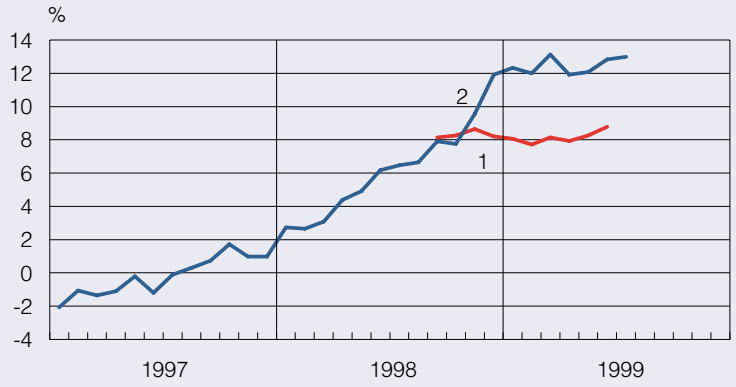
27. Euro area and Finnish banks: growth of deposits



12-month percentage change

1. Deposits of euro area residents with euro area banks
2. Deposits of Finnish residents with Finnish banks

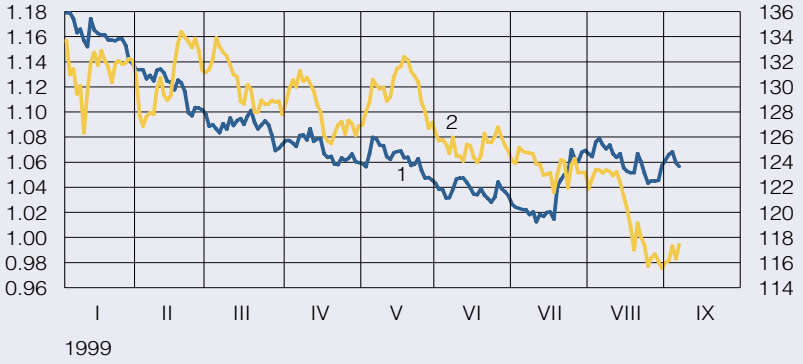
28. Euro area and Finnish banks: growth of lending



12-month percentage change

1. Lending by euro area banks to euro area residents
2. Lending by Finnish banks to Finnish residents

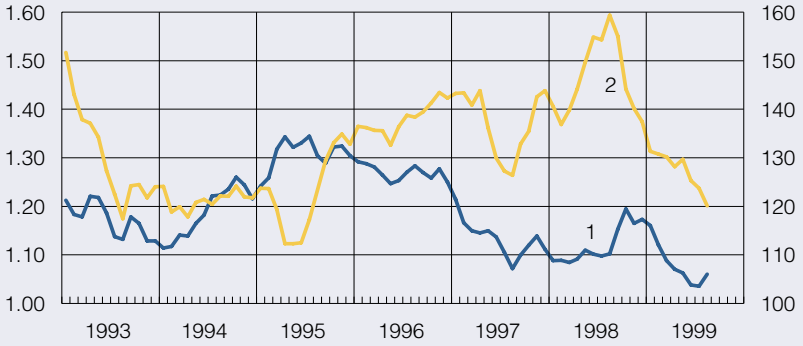
29. Euro exchange rates against the US dollar and the yen, daily values



Rising curve indicates appreciation of euro

1. Value of one euro in US dollars (left-hand scale)
2. Value of one euro in Japanese yen (right-hand scale)

30. Euro exchange rates against the US dollar and the yen, monthly values

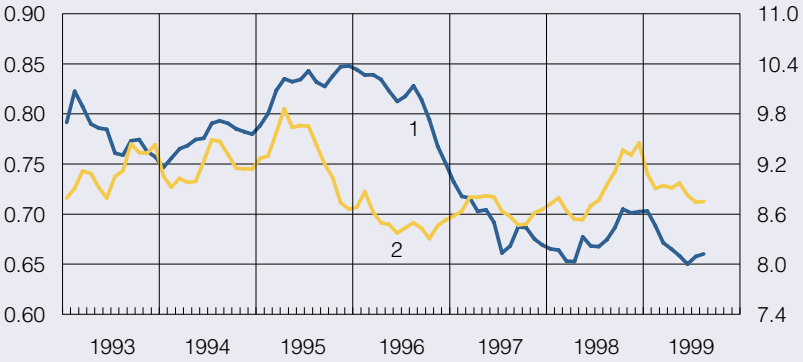


(ecu exchange rate until end-1998)

Rising curve indicates appreciation of euro

1. Value of one euro in US dollars (left-hand scale)
2. Value of one euro in Japanese yen (right-hand scale)

31. Euro exchange rates against the pound sterling and Swedish krona

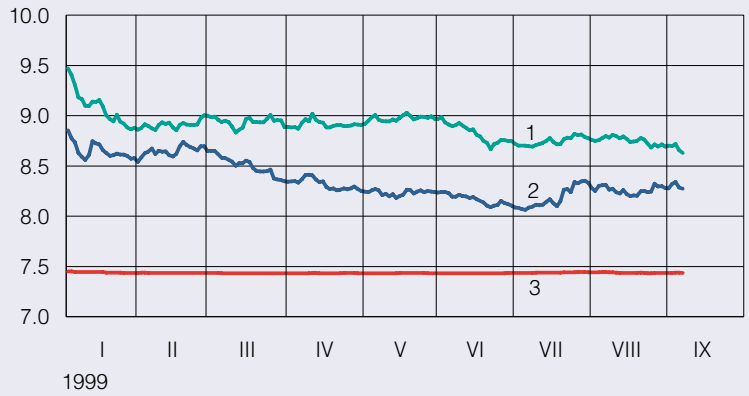


(ecu exchange rate until end-1998)

Rising curve indicates appreciation of euro

1. Value of one euro in pounds sterling (left-hand scale)
2. Value of one euro in Swedish kronor (right-hand scale)

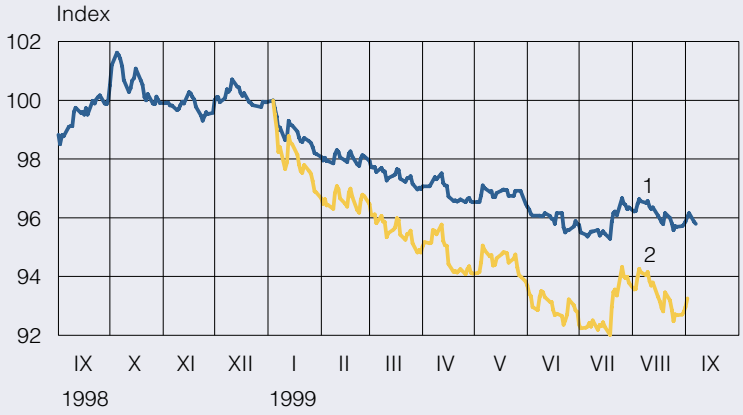
32. Euro exchange rates against the Scandinavian currencies



Rising curve indicates appreciation of euro

1. Value of one euro in Swedish kronor
2. Value of one euro in Norwegian kroner
3. Value of one euro in Danish kroner

33. Finland's trade-weighted indicator of competitiveness, daily values



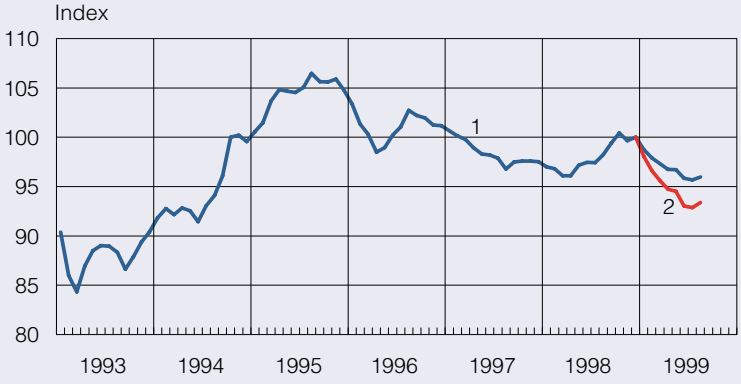
4 January 1999 = 100

Rising curve indicates decrease in Finland's price competitiveness

Former Bank of Finland currency index

1. In relation to all countries (incl. euro area)
2. In relation to countries outside the euro area

34. Finlands trade-weighted indicator of competitiveness, monthly values



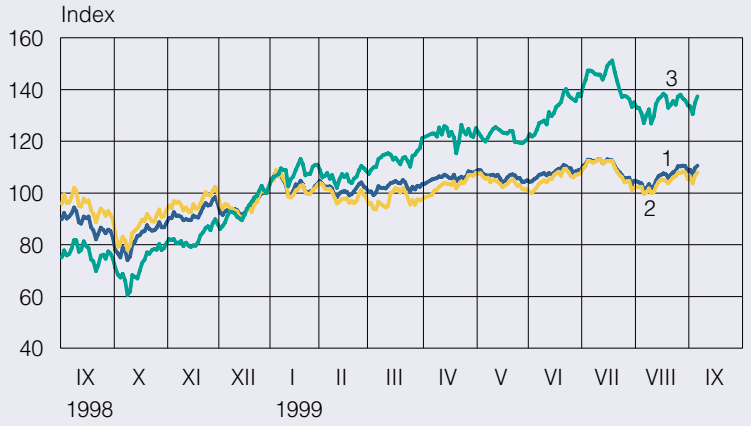
December 1998 = 100

Rising curve indicates decrease in Finland's price competitiveness

Former Bank of Finland currency index

1. In relation to all countries (incl. euro area)
2. In relation to countries outside the euro area

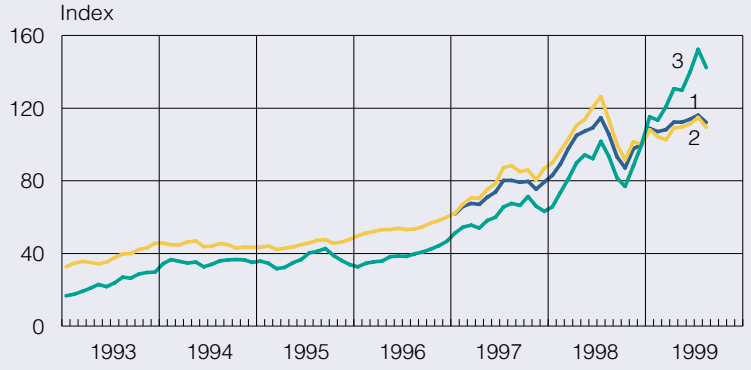
35. Selected stock price indices in the euro area, daily values



30 December 1998 = 100

1. Euro area:
   Dow Jones Euro Stoxx index
2. Germany: DAX index
3. Finland: HEX all-share index

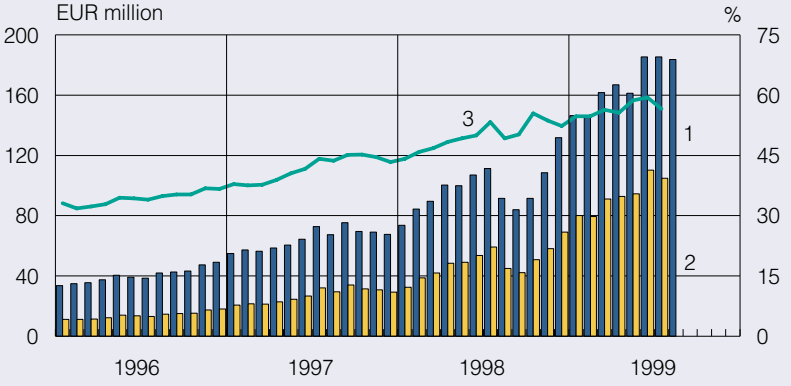
36. Selected stock price indices in the euro area, monthly values



30 December 1998 = 100

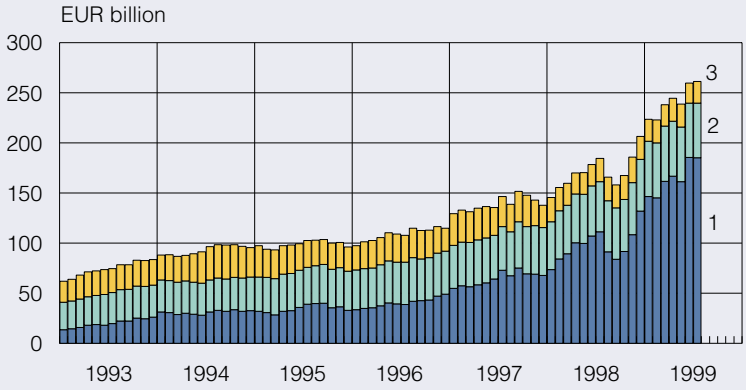
1. Total euro area:
   Dow Jones Euro Stoxx index
2. Germany: DAX index
3. Finland: HEX all-share index

37. Listed shares in Finland: total market capitalization and non-residents' holdings



1. Market capitalization of all listed shares (left-hand scale)
2. Market capitalization of non-residents' holdings (left-hand scale)
3. Market capitalization of non-residents' holdings as a percentage of total market capitalization (right-hand scale)

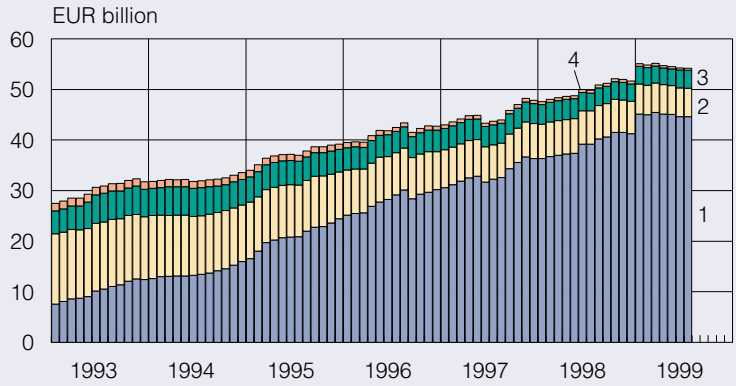
38. Securities issued in Finland



End-month stock

1. Market capitalization of shares
2. Stock of bonds, nominal value
3. Outstanding money market instruments

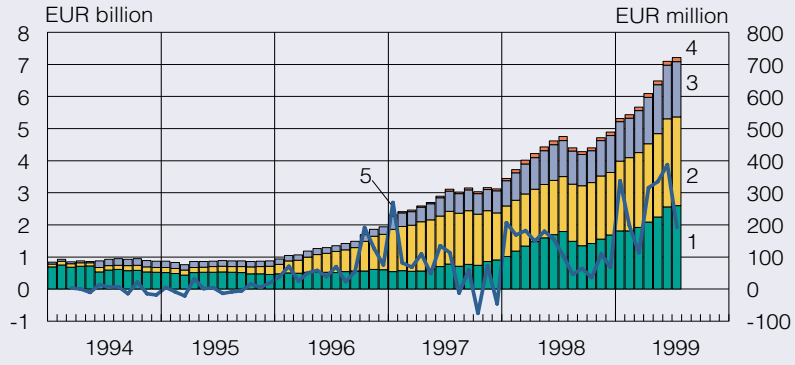
39. Bonds issued in Finland



End-month stock

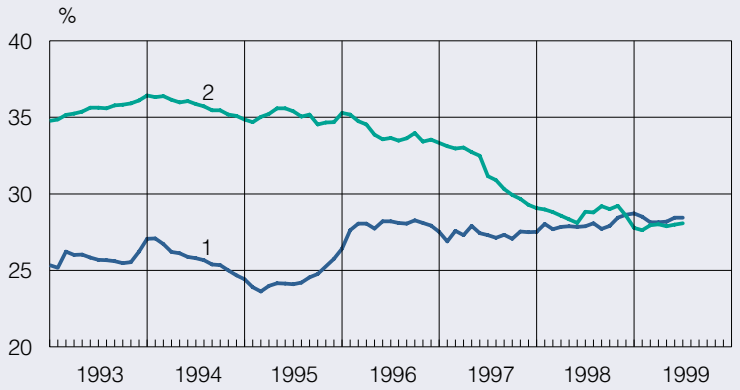
1. Central government
2. Financial institutions
3. Companies
4. Other

40. Mutual funds registered in Finland



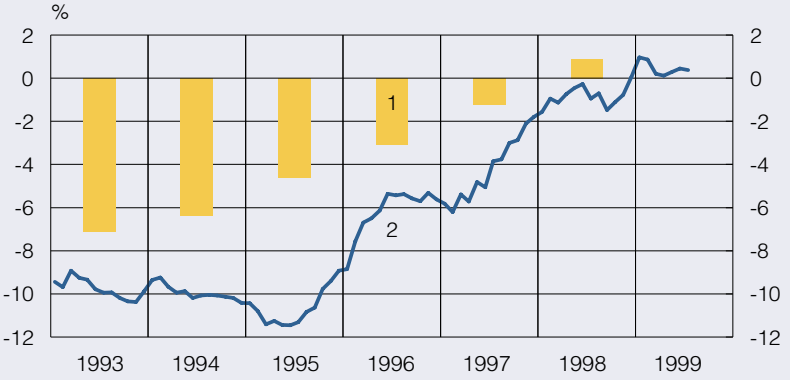
1. Equity funds (left-hand scale)
2. Fixed income funds (left-hand scale)
3. Balanced funds (left-hand scale)
4. Risk funds (left-hand scale)
5. All funds: net subscriptions (right-hand scale)

41. Central government revenue and expenditure in Finland



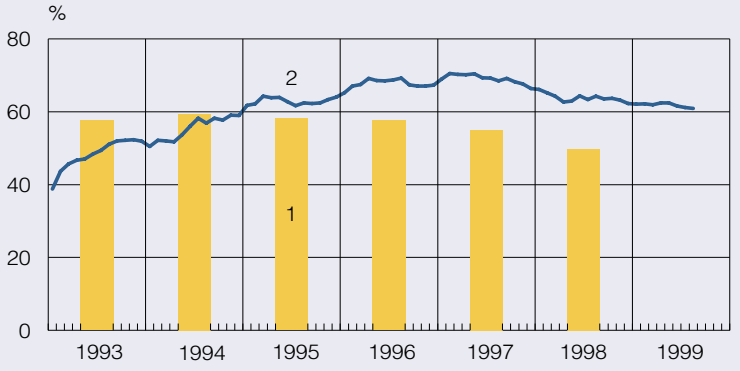
Excluding financial transactions
12-month moving totals, % of GDP
1. Revenue
2. Expenditure

42. Public sector balances in Finland



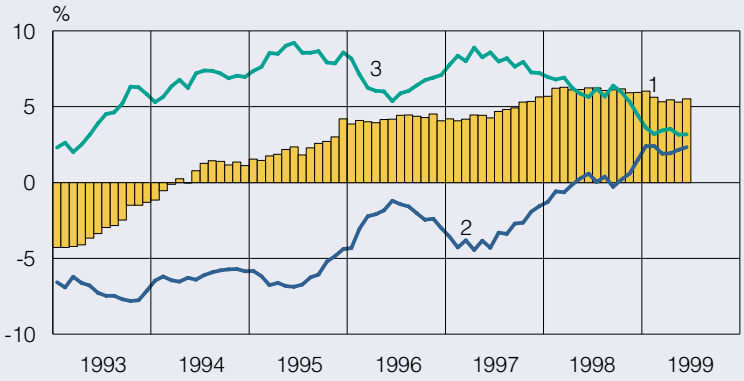
% of GDP
1. General government fiscal position
2. Central government revenue surplus
12-month moving total

43. Public debt in Finland



% of GDP
1. General government debt
2. Central government debt

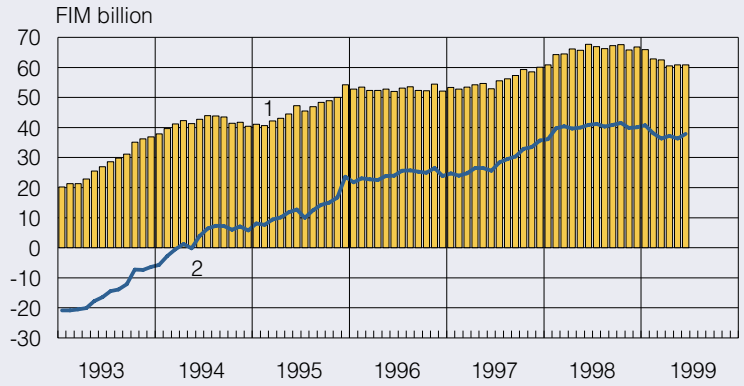
44. Net lending in Finland by sector



Main sectoral financial balances, 12-month moving total, % of GDP

1. Current account
2. General government sector
3. Private sector

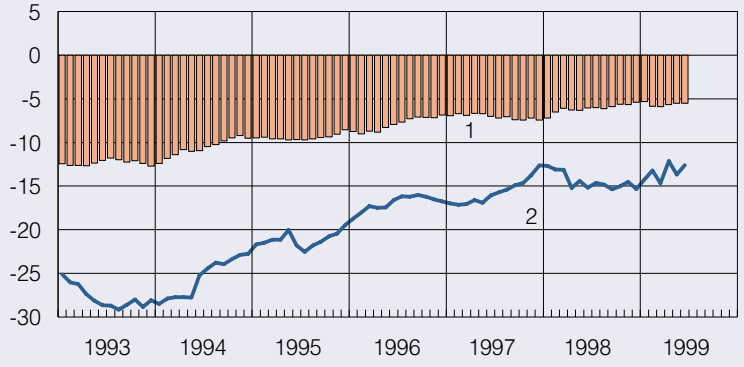
45. Finland: goods account and current account



12-month moving totals

1. Goods account, fob
2. Current account

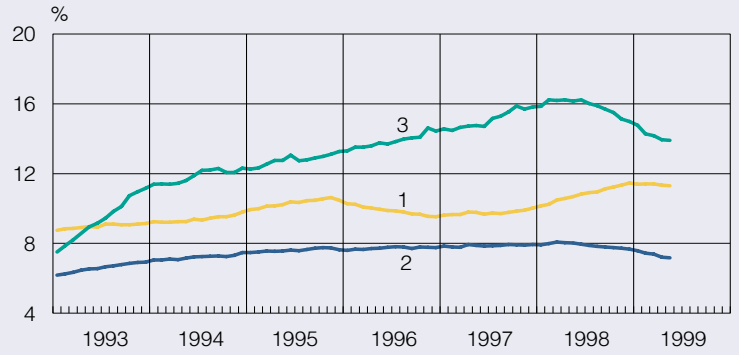
46. Finland: services account and income account



12-month moving totals

1. Services account (trade in goods, fob)
2. Income account

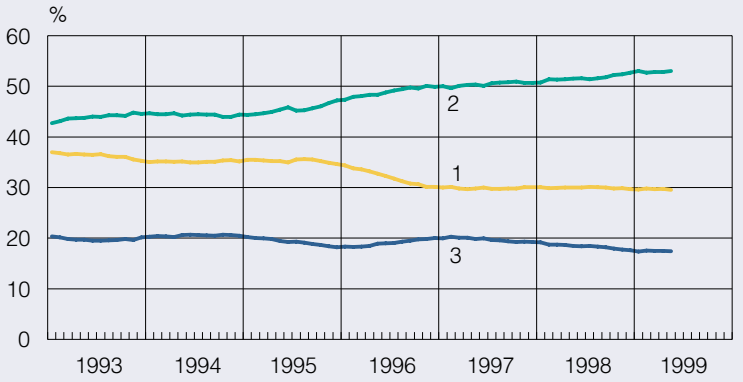
47. Regional distribution of Finnish exports



12-month moving totals, % of GDP

1. Euro area
2. Other EU member states
3. Rest of world

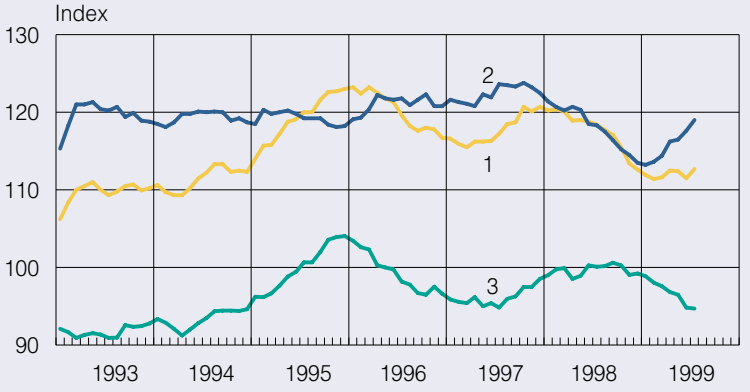
48. Finnish exports by industry



12-month moving totals, percentage of total exports

1. Forest industries
2. Metal and engineering industries (incl. electronics)
3. Other industry

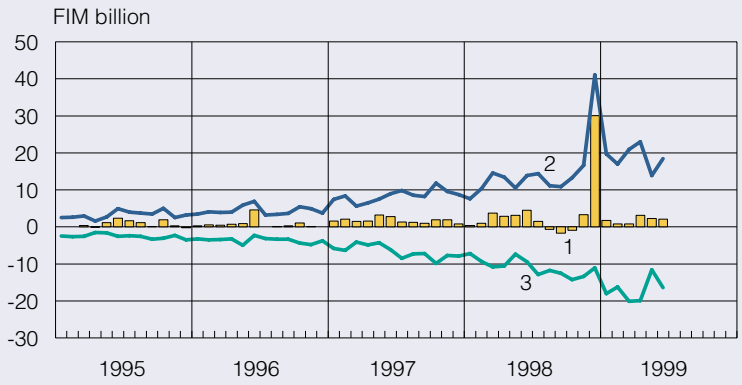
49. Finland's foreign trade: export prices, import prices and terms of trade



1990 = 100

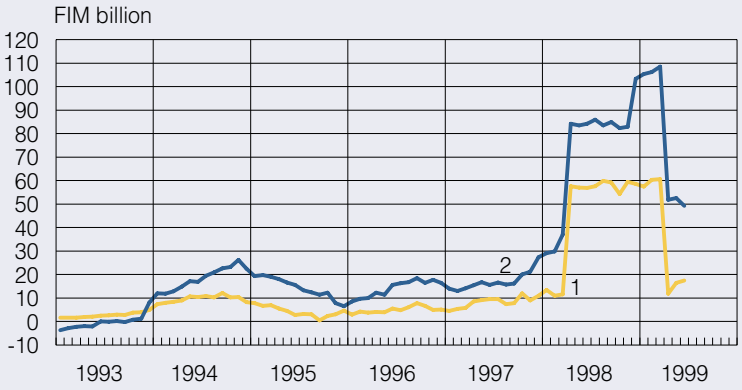
1. Export prices
2. Import prices
3. Terms of trade

50. Non-residents' portfolio investment in Finnish shares



1. Net sales
2. Sales to non-residents
3. Repurchases from non-residents

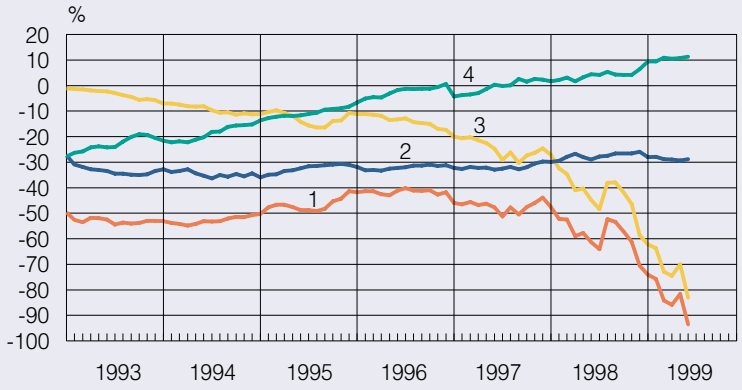
51. Finland: direct investment



12-month moving totals

1. In Finland
2. Abroad

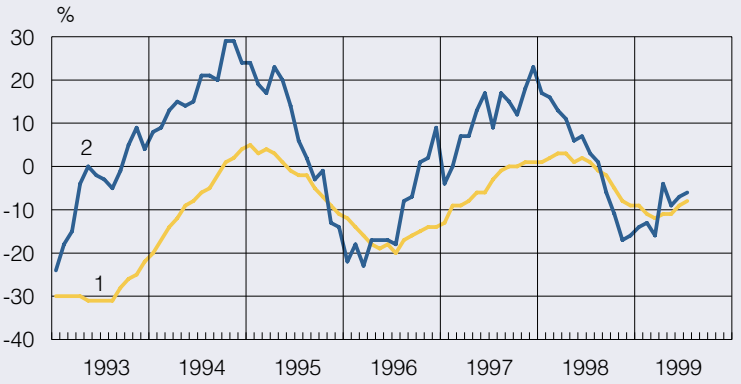
52. Finland's net international investment position



% of GDP

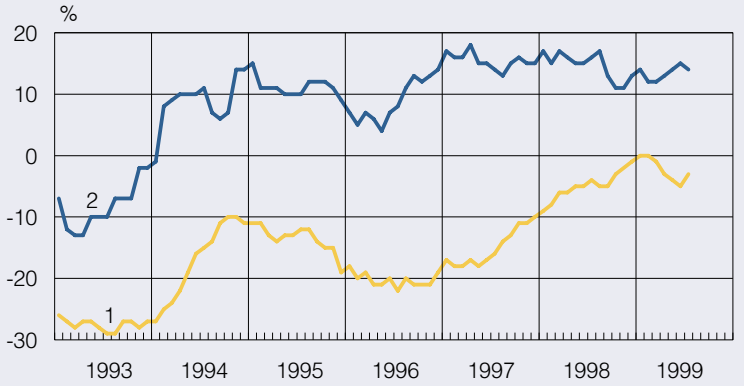
1. Net international investment position
2. Net international investment position of central government
3. Listed shares
4. Other items (excl. reserve assets)

53. Industrial confidence indicator in the euro area and Finland



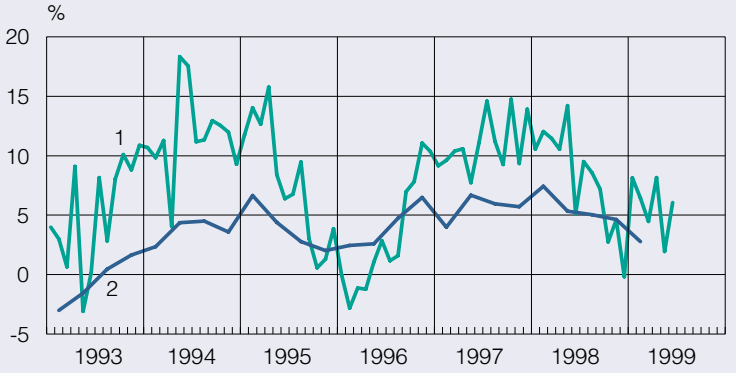
1. Euro area countries
2. Finland

54. Consumer confidence indicator in the euro area and Finland



1. Euro area countries
2. Finland

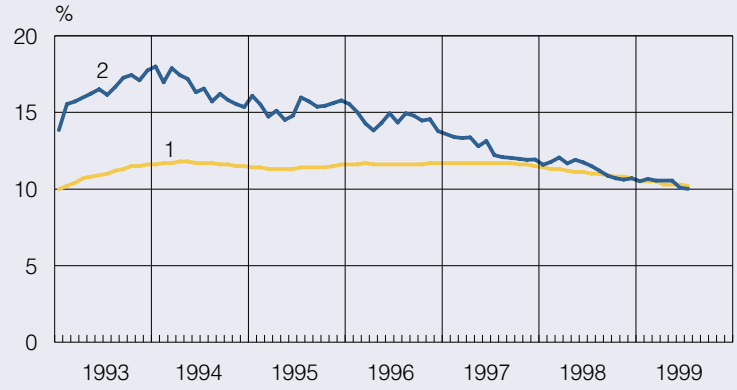
55. Finland: GDP and industrial production



Percentage change from previous year

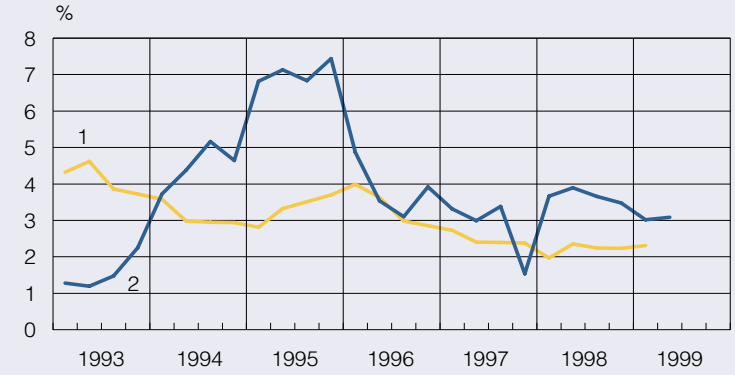
1. Industrial production
2. Gross domestic product

56. Unemployment rate in the euro area and Finland



1. Euro area countries
2. Finland

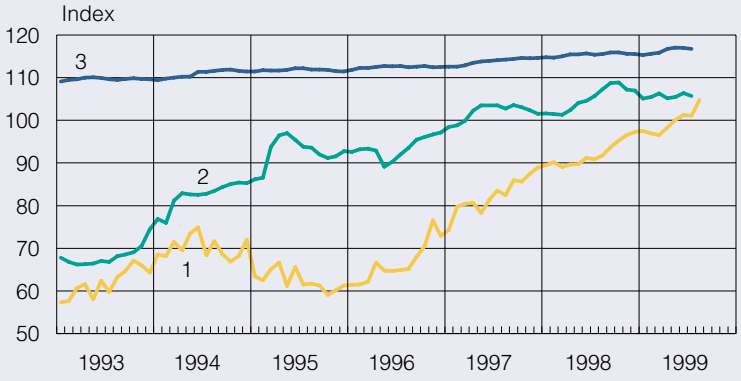
57. Level of industrial earnings in the euro area and Finland



Percentage change from previous year

1. Euro area countries
2. Finland

58. Selected asset prices in Finland



January 1990 = 100

1. Housing prices (old two-room flats; debt-free price per m^2)
2. Stumpage prices
3. Consumer prices

The Organization of the Bank of Finland

1 July 1999

The Parliamentary Supervisory Council

Ilkka Kanerva, Chairman, Virpa Puisto, Vice Chairman,
Olavi Ala-Nissilä, Ben Zyskowicz, Antero Kekkonen, Anneli Jäätteenmäki,
Martti Tiuri, Kari Uotila, Mauri Pekkarinen

Anton Mäkelä, Secretary to the Parliamentary Supervisory Council

The Board

Matti Vanhala
Governor

Esko Ollila
Deputy Governor

Matti Louekoski
Member of the Board

Matti Korhonen
Member of the Board

Heikki T. Hämäläinen, Secretary to the Board

Pentti Koivikko, Director

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Pentti Pikkarainen
Economics
Kari Puumanen*
Antti Suvanto*

Markus Fogelholm
Market Operations

Antti Juusela
Communications

Taina Kivelä
Internal Audit

Heikki T. Hämäläinen
Management
Secretarial Staff

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International Secretariat

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Information Technology

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Urpo Levo
Payment Instruments

Esa Ojanen
Administration

Juha Tarkka
Research
David Mayes*

Martti Lehtonen
Statistics

Antero Arimo
Publication and
Language Services

Pekka Sutela
Institute for
Economies in Transition

* Adviser to the Board
** In addition to own duties

Branch offices: Kuopio, Oulu, Tampere, Turku

The Financial Supervision Authority functions as an independent body in connection with the Bank of Finland; the Director General is K. Jännäri.