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- Monetary policy and economic outlook
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Monetary policy and economic outlook

The world economy made a rapid recovery in the early part of 2002. Output growth has continued since then, but at a lower rate than expected in the spring. The near-term outlook is for moderate growth. According to recent forecasts by international organisations, world economic growth should pick up gradually over the course of 2003–2004. There is however still a considerable risk of slower-than-expected growth. The redressing of imbalances in the US economy is a slow process, and the threat of an attack on Iraq is keeping oil and other markets in a state of uncertainty.

In the present situation, the euro area is not an engine of growth for the world economy. GDP growth has been sluggish this year, while the inflation rate has stayed above 2% pa. Forecasts however indicate that inflation should recede somewhat in 2003–2004. A serious problem in connection with inflation prospects is the persistent rise in service prices. In addition, differences in inflation rates across euro area countries have remained substantial.

The problems of balancing public finances in EU countries have worsened this year. It is quite possible that in some member countries the general government deficit will exceed the 3%-of-GDP limit defined in the Stability and Growth Pact and that the goal of balancing public sector finances will be pushed further into the future. Although the budget problems of these countries are real, there is no cause for exaggeration. We are still far from the huge budget deficits of the old days. However, in terms of credibility of economic policy coordination and requisites for the conduct of monetary policy, it is important to meet commitments and to respond as quickly as possible when goals are missed.

In the first half of 2002 the Finnish economy, led by exports and private consumption, moved onto a path of slow recovery. It is expected that growth will pick up in 2003 and accelerate further in 2004, nearly in line with the Bank of Finland's September forecast. However, this is conditional on the assumed recovery of the world economy. Inflation, as measured by the harmonised index of consumer prices, is expected to remain in 2003 slightly below the 2% forecast of September.

Despite sluggish growth, Finland is still running a general government surplus. Continued surpluses are essential, even as conditions tighten in the coming years. Pressures will cumulate for increases in public health care and social service expenditures, while the need to increase the employment rate argues for further easing of taxes on labour.

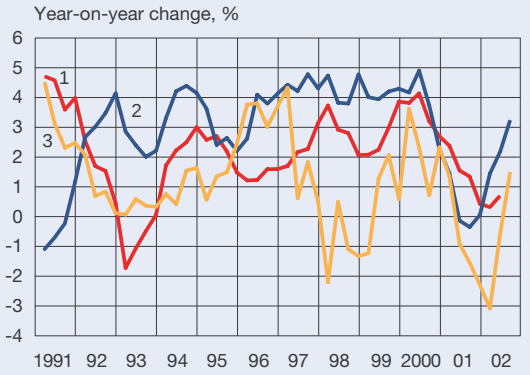
The comprehensive wage settlement means predictable cost developments and stability over the coming years. However, in the low-wage sectors the cost burden will weaken the job outlook also in the future.

World economy slowly picking up

World economic growth in 2001 was just over 2%. Growth accelerated in the early part of 2002, but has subsequently been more sluggish than expected. As autumn approached, economic prospects faded again in many countries and the widespread optimism of the spring turned more pessimistic. This was reflected especially in the stock markets, where prices declined sharply in the early autumn. The near-term outlook is for sluggish growth. However, according to recent forecasts, the world economy should recover gradually in 2003 and gain momentum in 2004.

Growth of the US economy accelerated in the early part of 2002, led primarily by private consumption and inventory investment (Chart 1). Consumption continued to support economic growth as the year moved on. Households' consumption was bu-

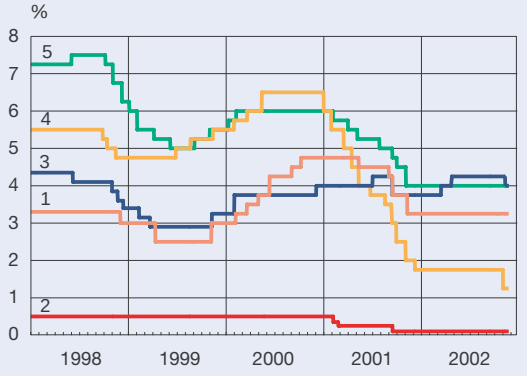
Chart 1. Real GDP growth



1. Euro area
2. United States
3. Japan

Sources: Eurostat and OECD.

Chart 2. Policy rates



1. Eurosystem: main refinancing rate / minimum bid rate (German repo rate until end-1998)
2. Japan: discount rate
3. Sweden: repo rate
4. United States: fed funds target rate
5. United Kingdom: repo rate

Source: Reuters.

oyed by continued fairly good employment conditions, highly advantageous financing terms on car purchases, and mortgage refinancing spurred by low interest rates and rising housing prices.

It is estimated that US economic growth has slowed down again in the final quarter of 2002. Private consumption finally seems to be losing steam, and the economy has received less support than before from public consumption. Companies' propensity to invest continues to be dampened by uncertain prospects and low capacity utilisation. Even though in the early part of the year investment in computer hardware and software bounced back from a sharp drop, investment in machinery and equipment has not yet taken off. According to many forecasts, US economic growth should gradually accelerate in 2003. But there is a fairly high probability of a weaker-than-forecast outcome.

Since the end of 2001, US monetary policy has been highly accommodative. The Federal Reserve at that time lowered the target for the federal funds rate to 1.75% (Chart 2). The policy rate was cut by another 50 basis points in November 2002. Despite the easy monetary policy, inflation pressures have remained subdued. The rate of increase in the CPI was about 2% pa in the autumn (Chart 3). Containment of inflation is largely due to an abundance of unused capacity, rising unemployment and increased competition. Service prices, however, have continued to markedly outpace other consumer prices.

Japan's economy recovered in the early part of 2002, supported by demand coming from other Asian

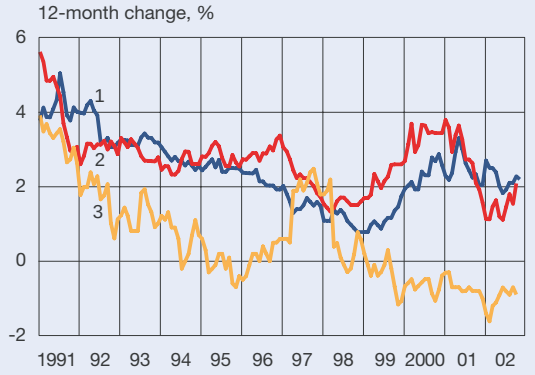
countries and the United States. The situation has made a turn for the worse in recent months, as export growth has weakened. Despite a pick-up in private consumption, domestic demand is not providing the needed stimulation to the economy. If the deflation and banking problems continue, Japan's economic growth will be moderate, at best. The high indebtedness of the public and corporate sectors continues to keep alive the threat of a crisis, and finding a controlled solution is a huge challenge for economic policy. The Japanese government announced a package of measures at the end of October, aimed at preventing a deflationary spiral and facilitating banks' handling of problem loans. In addition, the Bank of Japan eased monetary policy further eg by stepping up its purchases of long-term government bonds.

The other Asian countries have generally continued to post robust economic growth, thanks to export activity and, in certain countries, also domestic demand. Especially in China growth has been strong, which has buoyed growth not only for the other economies in the region but also for the world economy. China's membership in the WTO, large infrastructure investments, and direct investments by foreign companies have boosted China's economic growth.

The key exchange rates have fluctuated largely in line with relative economic prospects. The euro appreciated against the dollar in the spring and early summer, as doubts increased as to the sustainability of the US recovery. Questions about corporate accounting practices accelerated the dollar's slide. The value of the euro stabilised later, when euro area prospects also weakened (Chart 4).

Movements in long-term interest rates have been particularly pronounced in the autumn months. In

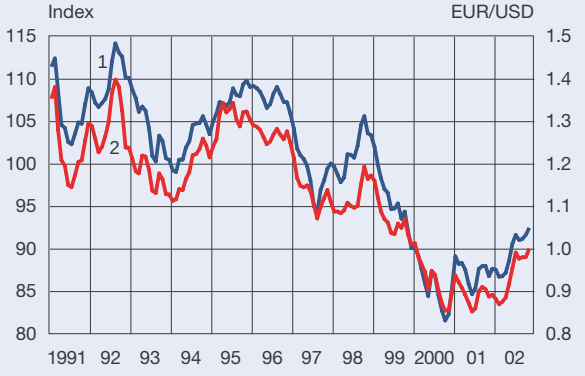
Chart 3. Rise in consumer prices



1. Euro area
2. United States
3. Japan

Sources: Eurostat and OECD.

Chart 4. Euro's effective and USD exchange rates



1. Index, 1999 Q1 = 100[1] (LHS)
2. USD-value of one euro[2] (RHS)

[1] Prior to 1999: trade-weighted index of currencies of the euro area countries; rising curve indicates euro appreciation.

[2] Until 31 Dec 1998: ecu rate.

Source: European Central Bank.

October the yield on ten-year US government bonds fell to about 3.5% in response to the weakening economic outlook, and euro area interest rates also declined. At their lowest, long-term real rates were around 2% – very low by historical standards. Interest rates have risen subsequently as share prices recovered from a steep drop in early autumn.

Euro area growth problems

Euro area GDP growth picked up in the early part of the year but remained modest. Exports and consumption have been positive for growth whereas the decline in investment has continued for a second year. The investment take-off may be further delayed, as business confidence has remained weak. It is estimated that the economy will continue to struggle as the year winds down, and growth for the whole year could be less than 1%.

According to forecasts by international organisations, euro area growth will gradually pick up in the course of 2003, in the wake of the world economy. Private consumption and inventory investment should support growth; later, a start-up in fixed investment will add further stimulus. Growth of private consumption in the euro area is abetted by a moderate level of consumer indebtedness, steady developments in housing assets, and a low level of interest rates.

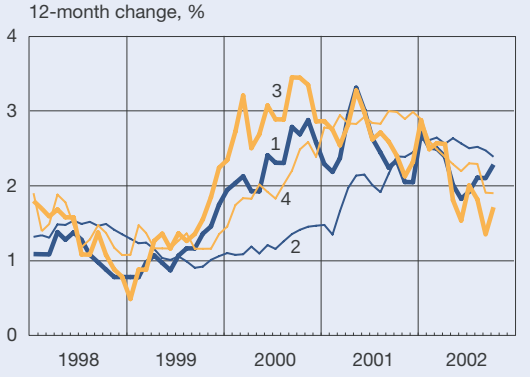
The euro area unemployment rate stayed just above 8% during late summer and early autumn, despite sluggish economic growth. Several forecasts see little change in the unemployment rate in 2003, after which it should decline as economic growth picks up.

Problems in achieving fiscal balance in the public sector have worsened in some EU countries in the course of 2002. The reason for the problems is that these countries failed to take advantage of the earlier high-growth years to strengthen their finances, as the common commitments would have required. Many other EU countries have achieved fiscal balance that can withstand normal business cycle fluctuations, in accord with the Stability and Growth Pact. The public finance situation even in the problem countries is not yet, in itself, a cause for alarm. Nonetheless, in terms of future coordination of economic policies and requisites for the conduct of monetary policy, the situation would raise concerns should the mutually agreed aims not be achieved.

Inflation stubborn in the euro area

Consumer prices in the euro area have been rising at more than 2% pa (the upper boundary of price-stability as defined by the Governing Council of the ECB) for nearly three years, except for a few months (Chart 5). Inflation has been kept alive primarily by

Chart 5. Harmonised index of consumer prices



1. Euro area: total index
2. Euro area: total index excl. energy and unprocessed food
3. Finland: total index
4. Finland: total index excl. energy and unprocessed food

Source: Eurostat.

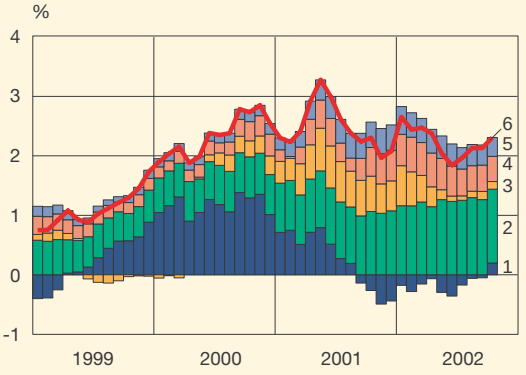
Box. Service prices have risen fast in the euro area

In recent months euro area consumer prices have risen at a rate just over 2% pa. Over half of the rise is attributable to service prices (Chart A). This reflects the importance of services in total consumption, as nearly 40% of total weighting in the euro area HICP is accounted for by services, as well as the rapid rise in service prices. The price rise began to accelerate in the latter half of 1999, and this year the rate of increase has been over 3%. By contrast, the rise in prices of industrial goods (excl. energy products) has decelerated this year.

The increase in service sector inflation is not a question of individual euro area countries or a few services; it is more widespread. The inflation rate for services has increased in recent years in all the euro area countries. Especially noticeable pick-ups have occurred in Ireland and some countries of southern Europe, eg Portugal. In these countries, service inflation has traditionally been higher than the average for the euro area. But service inflation has also accelerated in Germany and France as well as Finland.

Even if one looks at individual services, it becomes clear that the inflation pick-up has been broad-based. It spans the services of hotels, cafes and restaurants, as well as education and recreation and culture (Chart B). In 2002 the prices of health services have also been rising faster than

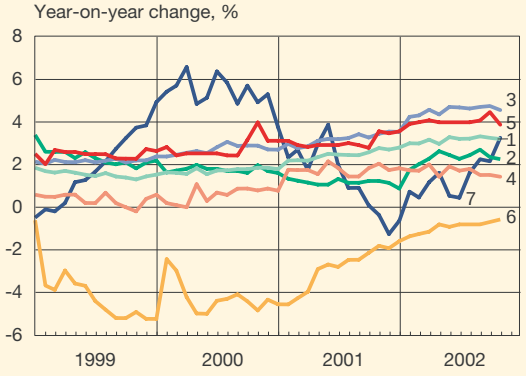
Chart A. Euro area inflation: sectoral contributions



1. Energy
2. Services
3. Unprocessed food
4. Industrial products (excl. energy)
5. Processed food
6. Euro area inflation

Sources: Eurostat and Bank of Finland.

Chart B. Service prices in the euro area



1. Services, total
2. Health services
3. Hotels, cafes and restaurants
4. Recreation and culture
5. Education
6. Communication
7. Transport

Source: Eurostat.

before. In contrast, prices of communication – eg telephone – services have declined in recent years. This derives from a freeing of competition in these markets in many countries and technological progress, which is reflected in rapid productivity growth. The price decline has however come to halt in the course of this year.

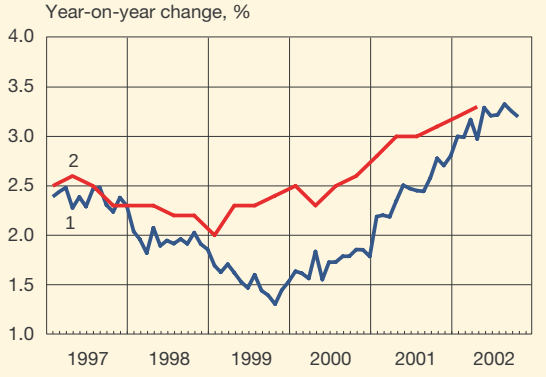
There is no one-single factor behind the inflation pick-up in the service sector. Euro depreciation and the sharp rise in the world market price of crude oil after the start of 1999 might offer a partial explanation for the behaviour of service prices. But because both direct and indirect effects of the rise in import prices should gradually dissipate, the recent continuation of the price rise cannot be based on these factors.

This year's acceleration of service price inflation has received wide media attention, since it is often associated with the launch of euro cash. The launch has in fact affected some service prices. In many countries, prices did rise, especially for the services of hotels, cafes and restaurants, at the turn of the year, as companies rounded off prices. But, in terms of service inflation as a whole, this effect has been minor, and it is fair to assume that it ran its course in the early months of 2002. Yet the rapid rises in prices of hotel, cafe and restaurant services, and many other services have continued through the most recent months. The price rise has been particularly visible in the countries of southern Europe, where tourism is a key industry.

One might consider looking for more basic causes of service price inflation than those sighted above. These are related to labour productivity and its growth in the services, as well as wage developments. Labour productivity growth is generally slower in the service sector than in the industrial sector. If wages rise at the same rate in all sectors of the economy, cost pressures will be greater in the service than in the industrial sector because of weaker productivity performance, and this will be reflected in faster rising prices in the service sector. This is apparently what has happened to an extent also in the euro area. The rate of increase in wages has accelerated in recent years at the same time as service price inflation has accelerated (Chart C).

Service prices can also be affected by changes in the structure of demand in favour of services. Moreover, wage and other costs can more easily be passed on to service prices at times when the demand for services is growing.

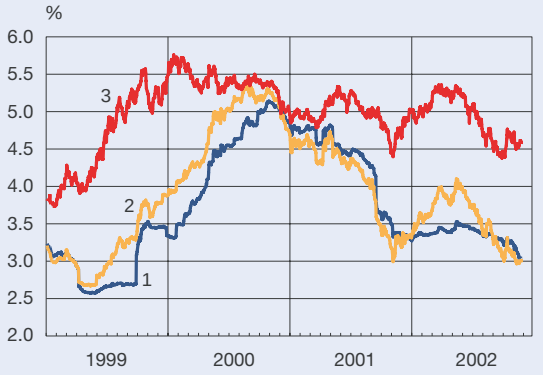
Chart C. Service prices and wages in the euro area



1. Services
2. Monthly earnings

Source: Eurostat.

Chart 6. Euro area interest rates



1. 3-month EURIBOR
2. 12-month EURIBOR
3. Average 10-year government bond yield

Source: Reuters.

a rapid rise in service prices (Box). Recent forecasts by international organisations call for a modest slowing of euro area inflation in 2003 and further slowing in 2004.

Inflation differentials across euro area countries have remained substantial. In Germany and several neighbouring countries, inflation has been below 2%, whereas in southern Europe, Ireland and a few other countries the rise in prices has been considerably faster.

Robust growth of euro area money supply continues

Easy monetary conditions continue in the euro area. The broad monetary aggregate, M3, has been growing at a rate of about 7% pa. The abundance of liquidity is related to the uncertainty hanging over the financial markets and a low level of interest rates, which have spurred the demand for liquid instruments. Simultaneously, the growth of lending to the private sector has slowed to just over 5% pa. Because the euro area money supply has increased substantially in the last couple years, the euro area now has abundant liquidity. It appears that in the current economic situation the ample stock of liquidity is not causing notable inflation pressure.

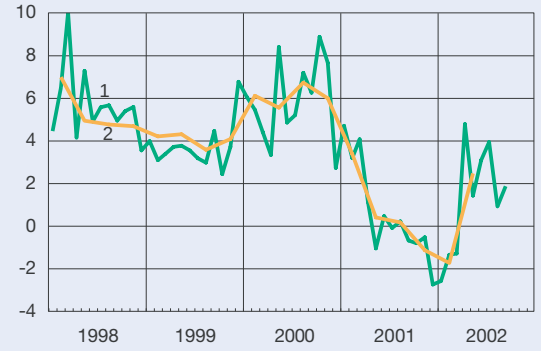
The minimum bid rate on the Eurosystem's main refinancing operations has been 3.25% since November 2001. Nonetheless, money market rates have been fairly volatile this year, which illustrates how the market's interest rate expectations move with the economic outlook (Chart 6). Since last summer, interest rates have declined substantially, along with a firming of expectations of a fall in policy interest rates.

Unemployment expected to increase in Finland

Finnish economic growth was only just under 1% in 2001, which was notably lower than the average for the euro area (Chart 7). In the first half of 2002 growth accelerated modestly, led by exports and private consumption. Output of electronics products in particular has picked up, but modest output gains have also been posted in the other metal and engineering and the forestry industries (Chart 8). The latest indicator data suggest Finnish economic performance in the second half of 2002 will accord fairly closely with the Bank of Finland's macroeconomic forecast of

Chart 7. Finland's total output

Change on year earlier, %

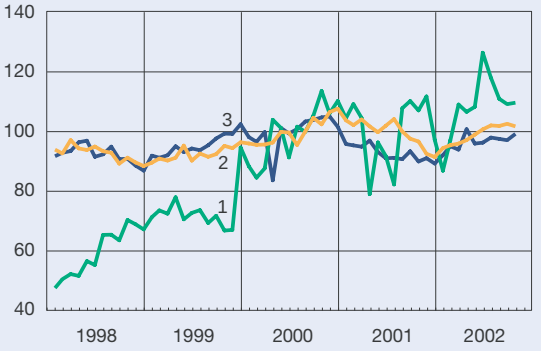


1. Monthly indicator of total output
2. GDP

Source: Statistics Finland.

Chart 8. Manufacturing output by sector

Index 2000 = 100, seasonally and calendar effect adjusted



1. Electronics industry
2. Metals excl. electronics
3. Forest industries

Source: Statistics Finland.

September 2002. Hence, for the year as a whole, economic growth should be about 1.5%. Finland's economic growth is expected to pick up in 2003, nearly in line with the September forecast, although the outlook for the start of 2003 has weakened somewhat compared to what it was earlier. Growth is predicted to accelerate further in 2004. The growth outlook is, however, conditional on the assumed recovery in the world economy.

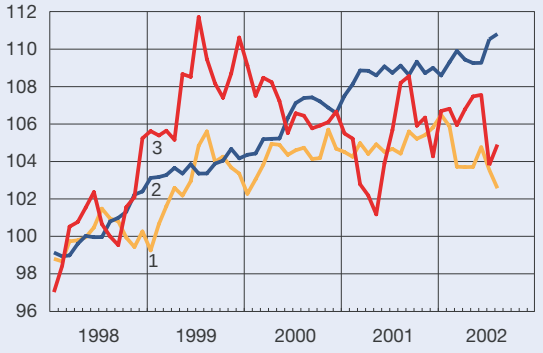
In the third quarter of 2002 industrial output increased by nearly 4% compared to the year-earlier period. However, a weakening of confidence in the industrial sector in the autumn points to a poorer sales outlook for the early months of 2003. The situation in the forestry industry has in fact remained sluggish. By contrast, mobile phone sales seem to be quite brisk.

Private consumption could continue its moderate uptrend over the coming months, since survey data indicate consumer confidence has remained fairly strong. Confidence is also indicated by the extension of brisk housing sales, which in turn spurs investment in housing. On the other hand, companies' investments in machinery and equipment have remained modest.

Since the end of 2000 Finland's unemployment rate has stayed in the region of 9%. The weakness of economic growth thus has not yet been reflected in rising unemployment. In fact, employment has developed somewhat more positively than was fore-

Chart 9. Employment in Finland by sector

Index 1998 = 100,
seasonally adjusted, 3-month moving average



1. Manufacturing
2. Services
3. Construction

Source: Statistics Finland.

casted by the Bank of Finland in September, thanks largely to employment growth in the service sector (Chart 9).

The relatively good employment performance reflects both the recent structure of economic growth and continued 'labour hoarding'. Companies have tried to hang on to employees even as the economy performs poorly. The number of persons employed in industry is nonetheless already on the decline and local governments' financial difficulties are expected to start gradually impacting the labour market. As a result, the unemployment rate will probably start to climb again in the coming months. The rise should be only temporary, provided economic growth picks up in 2003, as predicted.

Wage increases under the recent comprehensive wage settlement are moderate on average. In a challenging economic environment, the labour market peace enabled by the wage agreement is a valuable thing. However, in the low-wage sectors the cost burden will weaken the job outlook also in the future.

Inflation remains subdued

The rate of increase in Finnish consumer prices has slowed in 2002 (Chart 5). As in the euro area as a whole, Finnish inflation has been maintained mainly by service prices, whereas the rise in prices of industrial goods has decelerated. The latter trend may partly reflect heightened competition in certain categories of consumption goods, as more foreign companies have moved into the Finnish markets.

Inflation as measured by the harmonised index of consumer prices is expected to accelerate to around 2% pa as the year winds down but to slow again in 2003. For 2003 as a whole, inflation should be slightly below the 2% rate forecasted in September.

Finnish economy running a savings surplus

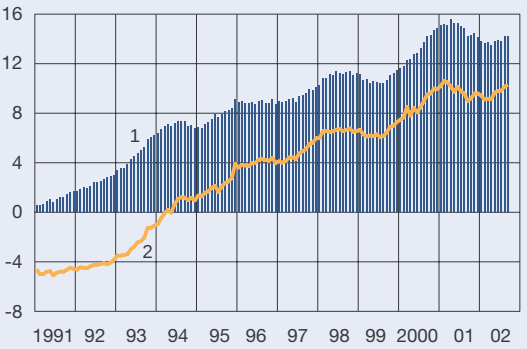
The Finnish economy has long been marked by large savings surpluses, reflected in a large BOP current account surplus and banks' abundant liquidity (Chart 10). Accordingly, banks have been competing for loan customers while a low level of interest rates has stimulated demand. The stock of housing loans has posted particularly robust growth. In the autumn the growth rate was 10% compared to 2001.

Public finances squeezed

Sluggish economic growth, tax easing and a meltdown of exceptional revenue items are eroding the general government surplus. Central government finances may nonetheless remain moderately in the black over the years 2002–2004, as forecasted by the Bank of Finland in September. The central government's income tax revenues have increased only mod-

Chart 10. Finland's goods and current account balances

EUR bn, 12-month moving totals



1. Goods account
2. Current account

Source: Bank of Finland.

estly in the first half of 2002, while total expenditure is estimated to grow by some 7% on the year-earlier period. The general government sector will clearly remain in surplus, due to surpluses in statutory social security funds.

Households' tax burden will be eased yet this year, but the trend is likely to come to an end next year. Neither the measures included in the Government's 2003 budget proposal nor the tax solutions included in the comprehensive wage settlement will be enough to further reduce taxation, especially as many local governments are now raising taxes. Households' average tax rate will thus remain at a higher level than before the early-1990s' recession.

Pressures to increase spending on public health care and social services are on the rise while the need to increase the employment rate argues for further easing of taxes on labour. The general government financial position will be weakened over the next few years if we are unable to finance the growth in expenditures on health care and social services by cutting other public expenditures and raising the efficiency of producing public services. An increase in employment would reduce the pressures toward weakening public finances.

The present labour market and public finance problems are mainly structural in nature and must be resolved regardless of current business cycle conditions. Solutions to these problems cannot be left for future economic growth, since there are many signs that, for demographic reasons alone, growth rates will on average be lower than past rates.

2 December 2002

■ Key words: inflation, monetary policy, economic situation

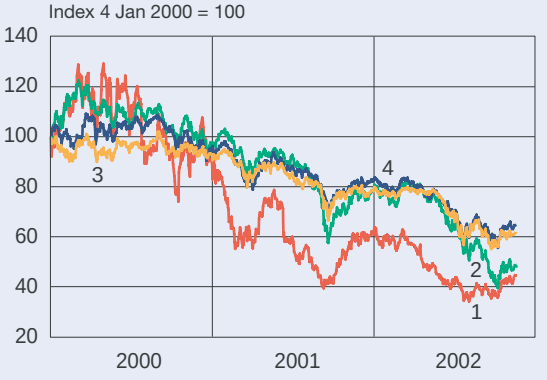
Financial stability in Finland

The international financial system has recently shown a remarkable capacity to bear risk and adjust to changing conditions. The system has generally performed adequately in the face of sluggish economic performance worldwide, a steep drop in share prices (Chart 1), and financial market problems and economic crises in certain countries. The resilience can be partly attributed to greater reliability of international payment and settlement systems; greater diversification of finance channels; development of new financial instruments and risk management methods; and successful actions by public authorities. It is nonetheless clear that the international financial system has become more fragile in the course of 2002.

Should economic growth in the major economic regions turn out to be notably slower than forecasted, financial stability would be threatened in a number of ways. Negative growth would reduce the ability of indebted households and companies to meet their obligations, which would in turn reduce the profitability of banks and other financial intermediaries. Slower-than-expected growth would also reduce investors' confidence in companies' long-term prospects, and this would further depress share prices and widen spreads on corporate debt.

US economic growth was strong in the third quarter of this year, but fourth-quarter growth is expected to be slower. Uncertainty is reflected in the Federal Reserve's November decision for a 50-basis-point cut in its policy interest rate. The more pessimistic prognostications suggest the United States is heading into a long period of Japan-like sluggish economic growth following the burst of an asset-price bubble. The US economy is, however, now in a better position than Japan's at the start of the 1990s, inter alia because of the strength of financial institutions' balance sheets and profitability. The latest interim financial reports of the largest US banking groups are generally good – some better than expected.

Chart 1. Stock indices in Europe and USA



1. HEX all-share
2. DAX
3. FTSE 100
4. S&P 500

Sources: HEX and Bloomberg.

Japanese banks have been stuck in a difficult situation because of a poorly performing economy and a huge amount of problem loans. Public authorities' recent attempts to resuscitate a banking system that is struggling with problem loans have met with mixed reactions. In September the Bank of Japan announced its intention to purchase shares from the largest banks at market price and in October to increase its purchases of government bonds by 20%. At the end of October the Government announced a reform programme aimed inter alia at tightening accounting rules on banks' problem loans; creating a new institution that would purchase loans from financiers of troubled companies other than the primary financier-banks; and arranging capital support and guarantees for companies. But implementation of the programme could once again prove difficult. Even in the best-case scenario, resuscitating Japan's banking sector will take years. The risk of international contagion of these problems is however contained by Japanese authorities' apparent reluctance to allow important banks to fail and by foreign banks' long-standing preparations for the problems of the Japanese financial system.

The improved risk-bearing capacity of the international financial system is further evidenced by the fact that serious problems in the financial systems of some Latin American countries and Turkey have not spread as did the problems of Asia and Russia in 1997–1998. The threat of contagion could increase if swift and credible solutions are not found for the problems of Argentina and Brazil.

The global problems of the financial industry have this year also included investment banks' poor financial performance and insurance companies' difficulties due to declining share prices and large compensation payments. Many investment banks have laid off large numbers of employees, and their problems have reduced the profitability especially of large international banks.

Insurance companies' profitability and capital adequacy have been weakened particularly by the decline in share prices. There is a clear need to monitor the financial health of insurance companies since their problems could spread across the securities markets and banking sector. Insurance companies' investment decisions can affect the stability of the securities markets – prices and liquidity – especially if the problem insurance companies are suddenly forced to unwind positions. Their problems may also infect financial conglomerates' member-banks.

EU area financial conditions

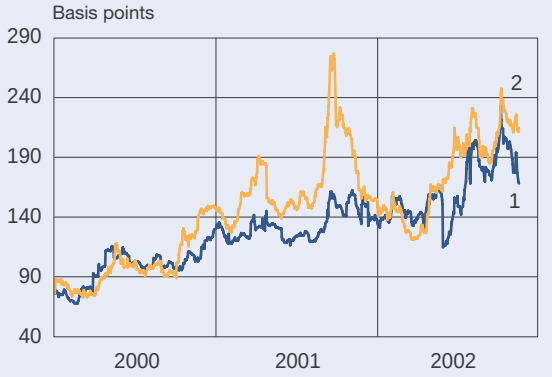
The financial system of the EU area is marked by considerably more uncertainty than before regarding both macroeconomic performance and financial conditions. This year's weak economic performance has further strained the risk-bearing capacity of the financial system. Nonfinancial companies' confidence has generally weakened, which has delayed investments and hence reduced the demand for finance. Uncertainty has also been exacerbated by the public finance problems in many EU countries. Despite problems in the operating environment, the EU area's financial system as a whole has performed fairly well. However, there are pronounced differences across EU countries' financial systems, in terms of both risks and risk-bearing ability.

For the banking sector, which is key to financial stability, profitability has weakened in the EU area in the course of 2002. The causes are unfavourable developments concerning the international investment banks, declines in securities-related income and increases in loan loss provisioning. Also in the background in some of the countries have been over-capacity and inefficiency in the banking sector. Developments in profitability have not been uniform across or within the different countries. Particular concern is focused on the German banking sector, where the difficulties stem from a combination of poor macroeconomic performance and structural problems.

The weakening outlook for creditworthiness of EU area companies, which began last year and has continued in 2002, is reflected inter alia in the various credit risk measures derived from market prices. It is noteworthy that differences in creditworthiness within the corporate sector have increased, which explains why default risks associated with the more financially stressed companies have increased more than the average-credit-risk indicators. A number of ICT companies in particular have suffered a diminution of creditworthiness.

EU area banks have mitigated the effects of credit risk increase in the corporate sector via asset securitisation, use of credit derivatives, etc. Use of these techniques enables risk diversification in the

Chart 2. Interest rate spreads: BBB vs AAA bonds
(approx. 8-year maturity)



1. USD-denominated
2. Euro-denominated

Source: Merrill Lynch.

markets and thus promotes stability. However, there are some concerns here in that the risks could cumulate in those market participants whose risk awareness and risk-bearing abilities are not yet up to par.

From the stability standpoint, it is noteworthy that in recent years banks have clearly become more closely linked across national borders via the interbank markets. The interbank markets, where trading is mostly in unsecured instruments, are the most likely channels for contagion of problems of the most vulnerable subsectors. The risk of contagion is exacerbated by the channelling of intra-EU cross-border transactions through a small group of banks.

Uncertainty has also had a definite impact on the securities markets. Total euro-denominated bond issuance did however increase slightly in the first three quarters of 2002 compared to the year-earlier period. Corporate bond issuances decreased over the same period, by nearly 40%, partly as a result of reduced M&A activity, teleoperators' increased resort to shareholders for financing, and large interest rate spreads for companies with poor credit ratings (Chart 2).

Prospects for the European financial system have worsened in the course of 2002, partly because of wide fluctuations and a downtrend in share prices (Chart 1), which have reduced market activity and hence fee income from investment-bank and securities brokerage services for both banks and investment firms. Moreover, the decline in share prices has affected capital positions of banks and especially insurance companies. The increase in cross-sector ownership linkages has in many cases increased banks' indirect shareholding risks, especially via banks' life insurance company subsidiaries.

Among emerging market economies, EU area banks' risk exposures are concentrated in Latin America and in the EU accession countries. Links between the financial sectors of EU and accession countries have increased significantly in the last few years, but in absolute terms the EU banks' exposures vis-à-vis accession country banks are still modest. While overall developments in the accession country banking sectors have been fairly stable, there are wide differences between countries and between banks in the same country.

Outlook for the Finnish banking sector

Conditions are presently stable in the Finnish banking sector. Changes in the operating environment and a weakening of cost efficiency have eroded banks' profitability but have not led to an increase in loan losses during the first three quarters of this year. The major risks for the banking sector are tied to macroeconomic performance and international linkages.

Table. Key data on selected deposit bank groups

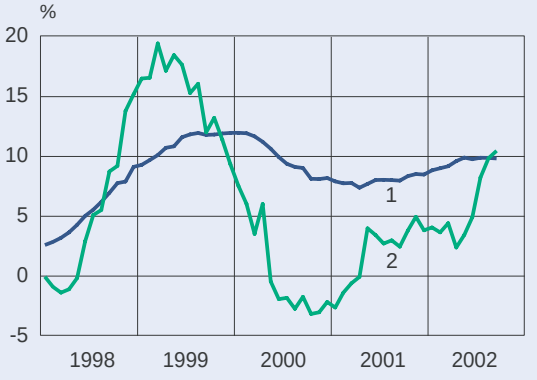
	Net interest income, EUR m			Operating profit, EUR m			Expenses, % of income		Capital adequacy ratios, 30 Sep 2002	
	1–9 2002	1–9 2001	Change %	1–9 2002	1–9 2001	Change %	1–9 2002	1–9 2001	Tier 1 %	Total %
Nordea Group	2 566	2 613	–1.8	1 101	1 460	–24.6			7.0	9.0
* Nordea Group, banking	2 796	2 776	0.7	1 298	1 505	–13.8	64	56		
Sampo Group				440	1 018	–56.8			17.0	15.9
* Sampo Group, banking and investment services	337	356	–5.3	212	244	–13.1	61	57		
OKO Bank Group	637	657	–3.0	341	366	–6.8	60	53	13.3	15.0
* OKO Bank Consolidated	120	111	8.1	64	69	–7.2	55	49	7.0	11.3
Finnish Savings Banks Group	152	167	–9.0	65	87	–25.3	69	60	13.7	16.4
* Aktia Savings Banks plc	56	59	–5.6	19	27	–29.6	78	70	9.6	13.3
Local cooperative Banks	61	64	–4.7	25	30	–16.7	67	61		20.7
Bank of Åland plc (Group)	24	25	–5.2	11	13	–15.4	69	65	8.6	11.3
Total excl. Nordea	1 211	1 269	–4.6	654	740	–11.2				

Sources: Banks' interim reports and Bank of Finland calculations.

Shrinking net interest income and rising costs have squeezed Finnish banks' profitability, which nonetheless remains at a fairly high level (Table). The lower average level of market interest rates in 2002 compared to 2001 explains the decline in banks' net interest income, as bank lending rates react more quickly than deposit rates to movements in market rates. Households' continuing strong demand for loans and an increase in companies' demand for loans, on the other hand, have had a positive effect on banks' net interest income (Chart 3).

Finnish banks' non-interest income items have remained surprisingly steady during the first three quarters of 2002. In this respect, the Finnish banking sec-

Chart 3. Growth rates for deposit bank lending

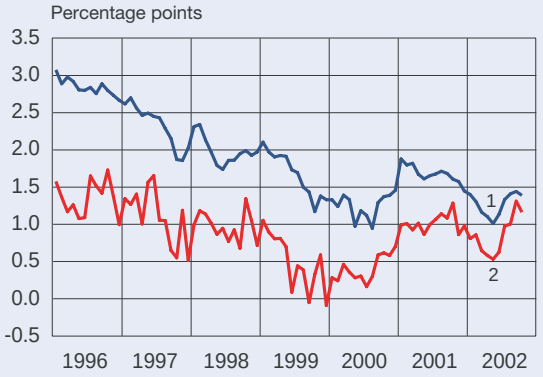


1. Households, 12-month change, %
2. Companies, 12-month change*, %

* Incl. loans to housing corporations from 2001.

Source: Bank of Finland.

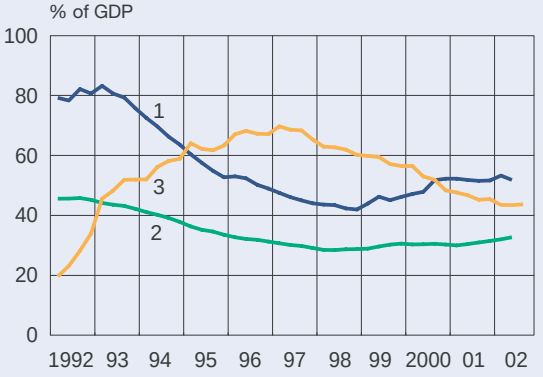
Chart 4. Interest rate margins on deposit bank lending



1. Average interest rate on new lending to households minus 12-month EURIBOR
2. Average interest rate on new lending to companies minus 12-month EURIBOR

Source: Bank of Finland.

Chart 5. Indebtedness by sector



1. Companies (excl. housing corporations)
2. Households
3. Central government

Sources: Statistics Finland, State Treasury and Bank of Finland.

tor differs from many other EU-country banking sectors, in which declines in these items have weakened financial results.

Banks' costs have increased notably, due inter alia to staff increases. Because of lower incomes and higher costs, Finnish banks' efficiency – excellent in recent years – has declined.

Interest rate margins on bank lending (average rate on new loans minus reference rate) have been narrow in recent years (Chart 4). The narrow margins derive in part from banks' cost efficiency and tight competition, especially in lending to large companies and housing loans. Borrowers, of course, have benefited from the situation. From the standpoint of stability, it is important that margins be sufficiently wide to cover banks' risks.

By historical standards, indebtedness of households and companies (Chart 5) is still reasonable, but there is reason to monitor closely the growth of indebtedness. Demand for housing loans has been

spurred by exceptionally low interest rates. The banks need to ensure that customers' debt servicing ability can withstand a possible rise in the level of interest rates. Finnish nonfinancial companies' capital position is still quite solid, and the low level of interest rates has eased the debt servicing task. Despite the abrupt decline in GDP growth in 2001, non-performing loans and loan losses, relative to lending stock, have remained quite low for most banking groups.

Loan losses usually follow, with a certain lag, poor developments in the macroeconomy. During the boom of the late 1990s, however, lending growth was at no point as explosive as in the late 1980s, before the banking crisis. If the Finnish economy grows as fast as forecasted, domestic loan losses will not pose a threat to banks' stability. Cause for concern about increases in loan losses is not likely unless the outcome for economic growth is significantly worse than forecasted growth. There may be greater credit risks connected with Finnish banks' foreign assets.

Financial groups operating in Finland have set ambitious goals for growth and returns. From the stability standpoint, it is essential that banks not try to grow by taking on excessive risks, and their solvency ratios should be commensurate with risks.

The operating environment for the financial markets is undergoing enormous changes in the context of technological advance, global integration of financial markets, and changes in saving patterns. Mergers among banks and insurance companies, domestic and cross-border, can be viewed as reactions to these changes. Financial groups and their supervisors face big challenges as they try to keep internal and external monitoring on top of the changes.

Outlook for Finnish securities markets

Although the long-lasting downtrend in share prices came to a halt in the autumn – at least for the time being (Chart 1) – the uncertainty associated with economic performance is still apparent in wide swings in market prices. Despite the uncertainty, trading in the Finnish stock market has remained active, nor has investor confidence been shaken. The number of shares traded on the Helsinki stock exchange in January-October was 18% higher than in the year-earlier period. Stock market liquidity has been concentrated largely on the HEX Main list, which accounts almost alone for the increase in turnover. Besides share trading, there was rapid growth in the trading of warrants.

Within the bond market, trading in government benchmark bonds between primary dealers was moved in the spring to the electronic MTS Finland trading system, with good results. As regards transparency in the secondary market for government bonds, however, the trading-system changes have been problematic, as dissemination of information on primary dealers' trades outside of the MTS Finland system has become more difficult. Since June there have been seven market makers besides the ten primary dealers, as well as three other participants, who have been using the system. Trades executed in the MTS Finland system are settled in the Euroclear or Clearstream system, whereas debt issuance occurs in the Finnish Central Securities Depository.

There have been no serious problems with the infrastructure of the domestic markets, although a few disturbances have occurred, in connection with information and communication systems. Certainty of settlement in connection with HEX share trades has stabilised at a very high level. During the present year the settlement rate, ie the portion of timely settlements in share trades, has stayed close to 99%. Nonetheless, in order to further the development of the marketplace for share trading and reduce systemic risk, HEX will in 2003 start settling share trades in a new HEXClear system based on real-time gross settlement. It is intended that at a later stage the HEXClear system will be extended to the settlement of trades in debt instruments.

The future of the Finnish securities market infrastructure is tightly tied to international developments in securities marketplaces and settlement systems. European securities market infrastructure is still in a state of ferment, nor is it possible to predict what will happen to that infrastructure over the long run. As integration of the securities markets proceeds, the global dimension becomes more prominent, as is seen in the September agreement between the Euronext stock exchange group and the Tokyo stock exchange, as well as the cooperation between the US Nasdaq and German banks and regional stock exchanges in forming the Nasdaq Deutschland stock exchange.

In connection with the international consolidation trend, more attention is being paid to the securities markets of countries applying for EU member-

ship. HEX has been active in this area and has specified its Baltic operations as a single business area; the last expansion here was the acquisition of a majority holding in the Riga stock exchange group, which includes, besides the stock exchange, the Latvian central securities depository. Many accession countries' stock exchanges have shown an interest in cooperative efforts with the HEX, which clearly presents some challenges.

Stability of payment systems

Overall, the euro area large-value payment systems have functioned well. Thanks to thoroughly tested contingency and business continuity arrangements, the TARGET (Trans-European Automated Real-time Gross settlement Express Transfer) system – maintained by the EU area central banks and ECB – has been highly reliable, except for a few technical hitches. The Bank of Finland's interbank payment system, BoF-RTGS, which is part of the overall TARGET system, was technically revamped in the autumn and the new version successfully brought on stream in mid-November.

In October the ECB Council set out developmental principles for a new-generation TARGET2 payment system and decided that EU accession countries would have the option of joining TARGET upon joining the EU. All of the present EU members are also participating in the system. Accession countries can either develop their own systems or participate with other central banks in a flexible arrangement. The latter option could reduce central banks' costs and operational risks associated with system development under tight schedules. Implementation of TARGET2, however, will require re-evaluation of back-up plans and technical risks.

The currency markets have been a major global source of interbank risks. The September launch of CLS Bank (Continuous Linked Settlement Bank) was an important advance in control of settlement risk in currency trade. The CLS system has functioned reliably right from the start. Looking ahead, the bank's owners intend to expand operations to include more currencies and possibly settlement of trades in securities and other assets. This will bring challenges for the system's risk management. Moreover, having trade settlement for the major currencies concentrated in future in a single system will expose participants to the operational risks of CLS Bank. Operating timetables for the CLS system place heavy operative demands also on central bank payment systems such as TARGET, since euro-denominated time-critical payments associated with CLS settlements are executed in TARGET.

In response to criticism concerning lack of efficiency in cross-border retail payments, EU area banks in May presented a comprehensive plan for developing retail payment services. This SEPA (Single Euro Payment Area) report included a proposal for a new infrastructure for handling cross-border euro-denominated credit transfers. Key to the most likely new infrastructure would be a Europe-wide clearinghouse that would handle the bulk of cross-border credit transfers. The prime weakness of the model is the concentration of risks in a single system, which, on the other hand, might increase the standardisation of payment messages and hence improve the efficiency of payment flows.

The POPS (interbank online express transfers, cheques and bank drafts) and PMJ (retail payments) systems, which are maintained by domestic banks, have functioned well in 2002. Their reliability depends primarily on the reliability of the banks' internal systems. As yet, not all retail payment services are under official supervision, but it is anticipated that changes in credit institution legislation will improve the situation. The Commission has also begun to appraise needs for changes in EU payment system legislation, in an effort to remove any remaining legal risks and barriers to efficiency.

Important regulatory-supervisory developments in the financial markets

Considering the changes taking place in financial-system structure, instruments and technology, it is crucial for stability that financial regulation and supervision be kept up to date. Globalisation of the financial system and rapid spread of changes across borders have given rise to a situation wherein authorities develop regulation and supervision increasingly on the basis of international cooperation.

The most important project in global-level regulation is the work on new capital adequacy requirements by the G10 countries' Basel Committee on

Banking Supervision. The committee intends to complete its work in 2003, so that the new requirements can be in place by end-2006. In October a study was initiated on the practical effects of the reform, based on banks' calculations (Quantitative Impact Study 3). In spring 2003, the committee will publish – for commentary – a new version of the proposal. The new requirements are based on more detailed breakdowns of credit risks and should impact banks' risk taking and supply of funding. In the discussions on the reform, concern has been raised about the complexity of the new requirements and their possible procyclical effects. Overall, the reform is seen as raising banks' risk awareness and hence as positive for financial stability. The changes in EU capital adequacy requirements apply to investment firms as well as banks.

An EU regulation issued in July improves the international comparability of companies' financial results. According to the regulation, companies listed in member states, including banks and insurance companies, are required to draw up financial statements in accord with International Accounting Standards (IAS) as from the start of 2005. Member states may also allow or require other companies to follow the IAS. In the summer the Commission released a proposal for amending directives on financial statements, which aims at removing inconsistencies between directives and IAS and enabling development of financial reporting by companies not affected, even after the amendments, by IAS.

Another effort to improve international comparability of companies' financial results is the October agreement between the International Accounting Standards Board, which is responsible for IAS, and the Financial Accounting Standards Board (FASB), which sets US standards for financial statements, on greater unification of standards for financial reporting by 2005.

Reform of EU financial regulation and supervision is in progress, on the basis of a report prepared by the Economic and Financial Committee. The report includes a proposal to extend an approach to securities market regulation and supervision – espoused by a group led by Alexandre Lamfalussy – so as to include banks, insurance companies and financial conglomerates operating across sectors.

From the standpoint of regulation of the EU financial system, progress has recently been made in drafting some key directives. A directive on financial collateral arrangements was adopted in June. Its purpose is to ease pledging and use of collateral as well as its realisation in the event of pledgor bankruptcy, and it applies to collateral arrangements between pledgor and pledgee among central banks, financial institutions and large organisations.

In November the EU Parliament gave final approval to a directive that changes regulation and supervision of financial conglomerates, that had been previously approved by the Council. The directive includes new regulations on credit institutions, insurance companies, and investment firms that belong to financial groups. An aim of the change is to ensure that a financial group has sufficient own funds to prevent the use of the same capital as risk buffer for two or more companies in the group.

In November the Council came to political agreement on a proposal for a directive on prospectuses, which the Commission had issued in revised form in August. According to the directive, a prospectus approved in one member state can be used in securities offerings in all member states. In October, the Commission issued a revised proposal on a directive on take-over bids after Parliament had rejected an earlier proposal in 2001, and in November it issued a proposal on revising the directive on investment services.

Developments in domestic legislation

From the standpoint of developing Finnish financial supervision, the key regulatory project is a Government bill presented in October concerning the Financial Supervision Authority. The bill makes more precise the aims and tasks of the FSA and assigns responsibility for overseeing the purposefulness and effectiveness of FSA operations to the Parliamentary Supervisory Council. The bill would also change provisions on FSA decision-making procedures and supervisory powers. The bill would not alter the FSA's connection with the Bank of Finland, ie as part of the administrative structure of the Bank but independent in operational decision.

Another Government bill was presented in October, this one on changes in the legislation covering emergency situations so as to meet the needs arising from developments in the financial markets and in-

surance sector. One of the changes in the Emergency Powers Act would increase the Council of State's powers to regulate the financial markets and insurance sector in emergency situations. The Government also proposed several other legislative changes, which would obligate certain financial and insurance entities to be prepared to maintain essential operations in emergency situations.

In the spring Parliament received a Government bill based on a proposal by the working group on banking services. The bill, which would amend the Credit Institutions Act and related legislation, is still under parliamentary consideration. The bill would also give the right to accept repayable-on-demand funds (for holding in customer accounts) from the public to companies other than deposit banks and savings associations. However, deposit banks would retain the sole right to apply the word 'deposit' to such funds and to have them covered by the deposit guarantee. Another aim of the bill is to implement the directive on e-money.

The working group on the structure of the book-entry securities system has completed its work. The group's report sets out alternative procedures for effecting a tiered holding structure parallel to the current direct holding system and analyses the effects on different securities market activities. The group called for continued monitoring of EU regulatory efforts and deliberative domestic preparations.

In the spring the Ministry of Finance established a working group on legislative needs regarding maintenance of competition between providers of savings, investment and life insurance products. The group is slated to continue its work until May 2003.

22 November 2002

■ Key words: financial system, stability, banking sector, securities markets, payment and settlement systems

Financial balance in the euro area

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Financial conditions in the euro area have remained fairly stable during the euro's four years of existence. In many countries, the general government fiscal position has remained in better balance than before, thanks to the Stability and Growth Pact. As an offset, the indebtedness of euro area companies and households has accelerated to an extent, albeit the trend has recently slowed somewhat. By contrast, the balance sheet items of euro area monetary financial institutions (MFIs) and the area's external capital flows have fluctuated widely in the same four years. While movements have not caused any serious problems in the financial markets, they have fuzzied somewhat the interpretation of monetary developments.

The monetary policy interest rate for the euro area has during the time of the euro moved within the fairly narrow range of 2.5–4.75%. Both the nominal and real interest rates have remained at historically very low levels. Stable developments – and expectations – vis-à-vis the financial markets are attested to by the fact that long-term yields on government bonds have stayed in the region of 4–5%.

The euro exchange rate, on the other hand, has fluctuated a great deal. The euro's dollar value began a steady decline from 1.17 at the start of 1999 to about 0.85 toward the end of 2000. In the spring of 2002 the trend was reversed and the euro appreciated to roughly par with the dollar. The euro's trade-weighted exchange rate has followed a similar path, except that the volatility has been only about half that vs the dollar, as the other European currencies have generally moved in line with the euro.

The primary objective set for ECB monetary policy is price stability. The ECB Governing Council has made the objective more specific: euro area consumer price inflation of less than 2% pa over the medium term. As a basis for its monetary policy decisions, the ECB applies a strategy that includes two 'pillars'. These concern developments in, first, the monetary aggregate M3 and its component parts and, secondly, a wide range of other economic and financial variables such as inflation prospects and a number of real economic variables.

So far, fairly good success has been achieved as regards the price stability objective. Nonetheless, since introduction of the euro, the average rise in consumer prices has stayed near the upper limit. This applies also to the near-term inflation outlook.

Euro area financial balance has remained good

For the euro area as a whole, aggregate savings and investment are nearly in balance, which is reflected in the near-zero balance on the area's BOP current account. Since mid-2001 the euro area has posted a small financial surplus. The levels of savings and investment are reasonable by international standards, both amounting to just over 20% of GDP. Both are noticeably lower than corresponding figures for Japan and many other Asian countries whereas, compared to the United States, the savings ratio in particular has been much higher.

Budgetary policy based on the public finance criteria specified in preparation for Economic and Monetary Union and the later-agreed Stability and Growth Pact clearly helped to boost public sector savings in euro area countries in the late 1990s. However, already in 2001 there was some weakening of the financial position of the public sector, and the deficit rose to 1.4% of GDP. For 2002, deficits in several countries will approach the 3% limit prescribed in the Stability and Growth Pact.

The ratio of private savings to GDP has declined slightly since euro launch, especially as regards households. Because investment has simultaneously

increased, companies and households have been obliged to take on more debt. The growth of private debt has nonetheless remained more subdued in the euro area than in the United States.

Finland's financial surplus has been larger than that of the whole euro area. The investment ratio is about the same as the euro area average while the savings ratio has been about 5 percentage points higher. Indebtedness of Finnish households and companies is quite low, by euro area standards.

Growth of monetary aggregates slightly faster than intended

Growth of monetary aggregates and credit extended by monetary financial institutions (MFIs) has been quite robust, and volatile, since the launch of the euro. While the volatility has not been exceptionally high by international standards, it has complicated estimation of the inflation-effects of money growth. Euro area external capital flows have also been somewhat unstable.

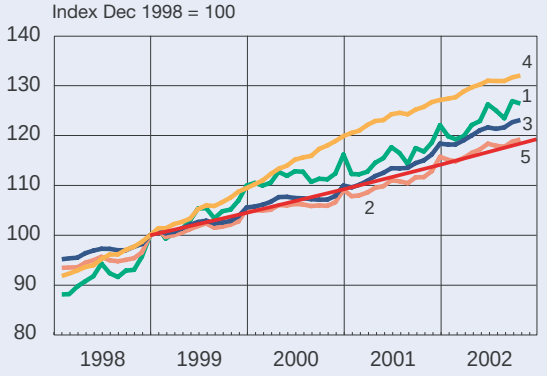
The ECB has defined a reference value for yearly M3 growth, which has been 4.5% from the start. The figure is based on the under-2% inflation rate, potential output growth of 2–2.5%, and a decline in the velocity of money circulation of 0.5–1%. The first pillar of monetary policy strategy also involves analysis of other MFI balance sheet items. In so far as the structure of the MFI sector balance sheet does not change significantly over time, other key balance sheet items – in particular, credit extended to the public – should grow roughly in line with the reference rate for M3 growth.

Items concerning private sector lending and deposits have, since introduction of the euro, increased at the M3 reference rate or faster (Chart 1). The growth of MFI lending to the public has been almost double the M3 reference rate. The rapid lending growth that started with the launch of the euro was due to a spate of company buyouts and expansion of the stock markets. Recently, companies' demand for credit has eased and lending has focused more on housing markets, where low interest rates have spurred the demand for credit. In several countries – Finland included – housing market activity has accelerated and housing prices have generally shot up.

M3 growth was roughly in line with the reference rate until the middle of 2001, after which it has risen at a considerably faster rate, 7–8% pa. The cumulative nominal money gap is now 4–5%, ie the excess amount of M3 is equivalent to one year's growth, in terms of the reference rate.

The sharp increase in the money supply in autumn 2001 has been viewed as an effect of general uncertainty due to the September terrorist attack on

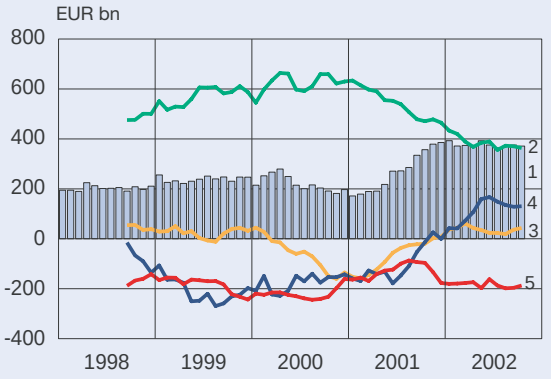
Chart 1. Euro area money stock and bank lending



1. M1
2. M2
3. M3
4. Lending
5. Yearly ref value for M3, cumulated

Source: ECB.

Chart 2. Growth of euro area money stock and counterparts, 12-month mov total



1. M3 money supply
2. Lending to euro area (excl. public sector)
3. Lending to public sector
4. Net foreign assets
5. MFIs' longer-term lialibilities (– increase)

Source: ECB.

the United States and the weakening of the economy, which was reflected, inter alia, in the broad and steep decline in share prices. Without question, uncertainty has affected the demand for liquidity, but the connection eg with the stock markets is not at all clear. Trades in secondary stock markets, as in other secondary markets, do not release funds on net for other instruments. The money supply generally increases only if share trades are financed by bank credit. However, in an open economy, the portfolio for the whole economy can change eg so that the supply of shares decreases and the money supply increases, if shares are sold to nonresidents. In fact, this is what happened in the euro area last year. The uncertainty story seems questionable also because, despite the fact that uncertainty has affected the broad sweep of western economies, not all of these have experienced rapid growth of the money stock.

There are apparently no definitely identifiable reasons for the behaviour of the money supply. It is linked to the flow of capital into the euro area. The generally low level of interest rates has increased the propensity to hold funds in low-interest-bearing deposits. Another factor affecting the money supply was the early-stage slowness of the lending pickup in some of the euro countries. Since the introduction of the euro, cross-country differences in lending and deposits have been sizeable. In Germany in particular the monetary aggregates have increased sluggishly, whereas in many of the smaller countries credit and money supply have posted robust growth.

In Finland developments in MFI lending and in the money supply have been much in line with euro area averages. Finland's contribution to euro area M3 has, to be sure, grown quite slowly, mainly because much of the money formerly placed in Finnish MFIs by insurance companies and other investors has been moved into other parts of the euro area in connection with the elimination of exchange rate risk.

Developments in money and credit aggregates linked to external capital flows

Because lending by euro area MFIs has grown notably faster than M3, the MFIs have had to cover the difference by tapping other financing sources. Lending has been financed partly by long-tem deposits and securities that are not included in the monetary aggregates and partly by non-euro area sources (Chart 2). There have also been reductions in lending to the public sector, but these have been of little significance because many euro area central governments have been only modestly in debt to MFIs.

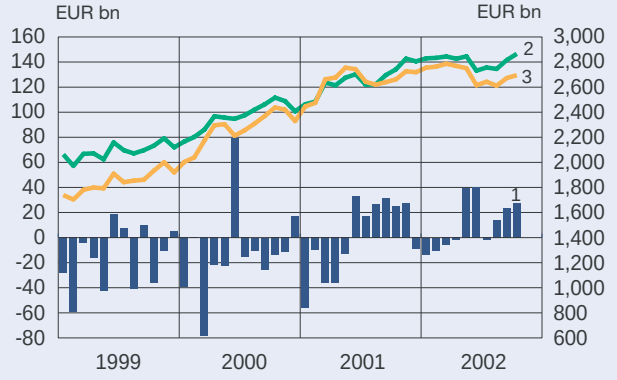
Non-euro area financing has been very important for euro area MFIs. The MFI sector became rapidly indebted to non-euro area entities during the

years of rapid lending growth in 1999–2000, but since mid-2001 they have generally reduced their net debt to them (Chart 3). Fluctuations in assets and liabilities vs non-euro area entities are often clearly linked to wide swings in the money supply. Eurosystem operations in the currency markets have been (end-2000) quite limited, nor have the resulting changes in central bank money been particularly important as regards the liquidity of euro area MFIs or the public.

MFIs' external items are included in the euro area balance of payments. Because the euro area current account balance has remained close to zero, the growth of MFIs' non-euro area assets derives largely from other sectors' capital imports into the euro area. Likewise, the growth in MFI liabilities is probably the result of capital exports from the euro area effected by companies and other investors. Direct investments by companies and financial institutions (excl. MFIs) have, since euro launch, been outward from the euro area on net. For the first couple years, outward investment in shares and bonds also exceeded inward investment, for the euro area. One reason for this was that non-euro area borrowers made extensive use of the new euro-denominated bond markets, which attracted funds mainly from the euro area. Investment flows reversed direction in 2001, and since then the euro area stock markets, in particular, have attracted large amounts of funds.

These fairly pronounced international capital flows of companies and other investors (excl. MFIs)

Chart 3. Euro area MFIs' foreign items



1. Assets increase +, Liabilities increase – (LHS)
2. Assets, stock (RHS)
3. Liabilities, stock (RHS)

Source: ECB.

Chart 4. Euro's external value

1. Euro's narrow trade-weighted currency index, 1999 Q1 = 100 (LHS)
2. USD-value of one euro (RHS)

Source: ECB.

have been reflected also in currency market pressures; as in 1999–2000, when capital exports were linked to selling pressure on the euro (and depreciation), and in 2001–2002, when occasional capital imports were linked to euro appreciation (Chart 4). Such connections between capital flows and the exchange rate are frequent short-run market phenomena, but in the longer run the connection is generally not so clear, as exchange rates are determined by many different and varying factors. There is no solid reason for viewing changes in capital flows as specific causes of changes in exchange rates, since it is more likely that behind both are differences in expectations regarding returns from different economies, as well as other fundamental investment considerations.

The international capital flows of a small euro country such as Finland affect only liquidity conditions. Flows into the euro area no longer have exchange rate consequences and external flows are too small to have a notable impact on the exchange rate. Capital flows have caused large gyrations in the Finnish money market, especially since insurance funds moved in euro area securities in connection with the elimination of exchange rate risk.

Financial developments in the early years of the euro area can also be seen as a step-up in euro area entities' company acquisitions and securities investments in non-euro area countries, because of a relatively low level of interest rates. This activity also weakened the euro. Interest in this type of investment receded in 2001, which had a dampening effect on euro area banks' lending. Because at the same time investors from outside the euro area began to invest in euro area shares, liquidity conditions improved for residents who sold shares. This became apparent in an increase in M3, and at the same time euro area MFIs' net claims on non-euro area MFIs increased.

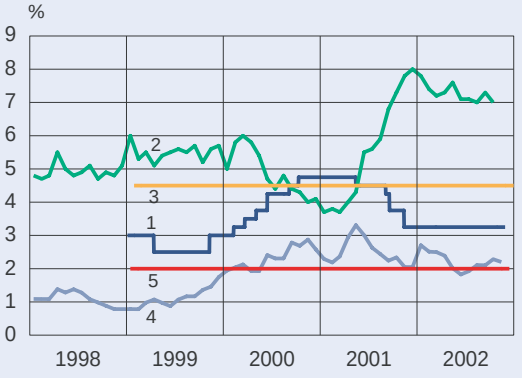
Instigation for these financing linkages has certainly come from different quarters. Euro area investors' aim at times – as in the uncertain situation in autumn 2001 – has undoubtedly included the raising of liquidity, eg by selling shares to nonresidents. In so far as uncertainty subsides, the increase in liquidity will be temporary, and the financing will be used partly to make commodity purchases and investments that boost demand and price pressures.

Money supply and inflation

M3 growth has not been a good predictor of monetary policy decisions over the short run. The ECB has in fact been outspokenly flexible as regards M3, apparent at once in the fact that the money supply is not specified as a target variable of monetary policy but instead a reference value is defined for its growth rate. The ECB has also emphasised the importance of developments in credit and other financial items. Interest rate decisions appear to be more closely associated with the rate of increase in euro area consumer prices (Chart 5).

The importance of monetary expansion is however attested to by the fact that, ever since the launch of the euro, inflation and the monetary aggregates have moved in sync. The cumulative increase in M3

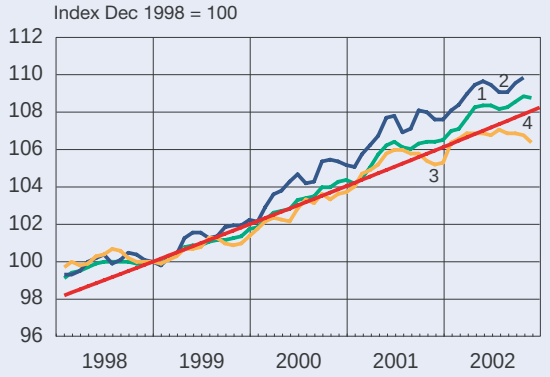
Chart 5. Eurosystem monetary policy



1. Main refinancing rate/min bid rate
2. M3, 12-month change, %
3. Reference value for M3 growth
4. 12-month change in HICP, %
5. Upper limit for price stability

Sources: ECB and Eurostat.

Chart 6. Euro area price level and inflation paths



1. Euro area
2. Finland
3. Germany
4. 2% inflation path

Sources: Eurostat and Statistics Finland.

has exceeded the 4.5% reference value, and the average rise in consumer prices has marginally breached the 2% upper limit associated with price stability (Chart 6). The above-reference-value growth of money must stem from inflation or a decline in velocity of circulation, since actual euro area output growth has accorded with the 2–2.5% potential rate. Finnish developments correspond fairly well with euro area averages, if one takes into account the transfers abroad of assets, especially Finnish money market paper.

Thus, from a longer-term perspective, the first pillar has worked as anticipated. Because inflation has stayed close to the upper limit specified for price stability, ECB monetary policy for the euro period cannot be characterised as particularly tight in respect of the primary objective. The growth rates of money and credit have in 2002 continued to exceed the reference value for M3 growth. Before long, these growth rates will have to be brought down close to the reference value. Of course, the money-inflation nexus is not straightforward. Liquidity clearly affects the inflation rate, but often inflation affects the quantity of money that is needed. Moreover, other general inflationary factors such as cost pressures affect both of them.

When looking at inflationary factors, one should pay attention to international capital flows. Large investment flows in all likelihood affect, at least temporarily, both the euro area money supply and the euro's exchange rate. Sizeable flows of international capital into the euro area can be expected to strengthen the euro and increase the euro area public's liquidity. These factors have offsetting affects on inflation. Whereas euro appreciation has a downward impact on the price level, via euro-valued foreign trade prices; liquidity growth adds to internal (upward) price pressures. This story seems to describe this year's actual developments. To be sure, price pressures have surfaced mainly in the housing market and less in consumer prices.

Financial balance in the euro area appears to be continuing on a generally good path. This is not, of course, to say that no problems are forthcoming. In many countries, public sector finances are not developing according to objectives. Developments in deposits and lending, as well as in inflation rates, have differed widely across regions. In many cases the differences are natural and justifiable, also in the context of monetary union; but if they continue for a long time, they could foment imbalances within the euro area. The financial institutions of the different euro area countries are also quite different – also in terms of efficiency and solidity. Even though the interbank money markets are already tightly integrated, there are still barriers to efficiency in many other markets.

8 October 2002

■ Key words: euro area finance, money supply, capital flows, price stability

New legislation to diversify financial services

by **Karlo Kauko**, Economist
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At present, a revision of Finnish legislation pertaining to the financial markets is in progress. In March 2002 Parliament received a Government bill (33/2002) that would amend a number of laws and implement an EU directive pertaining to e-money issuers.

The range of services provided by credit institutions would change only moderately under the legislative revision. Perhaps the key reform from households' perspective would be that nonfinancial companies could offer customer accounts to their customers.

Customer accounts

In Finland only banks have traditionally had the right to collect deposits from the public. Other companies have been able to collect funds from the public only via the capital markets, eg by issuing shares or debt securities. The Government bill would change the situation. It is proposed that companies not approved as credit institutions be granted the right to collect repayable-on-demand funds from the public for placement in customer accounts, which would in many ways resemble bank accounts. For example, in Sweden a customer account system, much like that proposed for Finland, has been in operation for many years and is fairly popular.

In Finland too, a similar system has long operated in many cooperative retail stores. The stores' own savings associations issue accounts that closely resemble bank deposit accounts, albeit these are not covered by the deposit guarantee. References to cooperative savings associations would be rescinded as part of the legislative reform, and in the future cooperatives would be able to collect funds from their customers under the same legislation as limited liability companies. Thus the reform would reduce the importance, vis-à-vis services offered, of an entity's organisational form. To be sure, the proposal would allow the savings associations to continue to operate for several years in accord with the old legislation. There is only one significant difference between the customer account system and the traditional cooperative savings associations. Savings associations have collected funds only from members (ie owners) of their respective cooperatives, whereas in the new system the company can collect repayable funds from anyone. It will not be necessary to invest capital in the service provider in order to open an account.

A company accepting funds from its customers cannot, however, function exactly like a bank. Funds in an account can be used only for purchasing goods or services from the company collecting the funds or another company in the same group. Cash withdrawals can also be made, but bills – eg electricity bills – cannot be paid directly (eg by giro or cheque) from a customer account provided by a department store. The maximum amount that can be accepted from a single customer will be EUR 3000.

Under the proposed legislation, a company that collects funds from its customers must report on this activity to the Finnish Financial Supervision Authority (FSA), which would not however actually supervise it. The FSA could prevent the activity if it does not conform to the statutory limits and requirements on such activities.

Repayable funds collected in customer accounts are not to be called 'deposits', nor are these covered by deposit guarantees. Thus the customer's rights are ensured only by the company's ability to pay. If the company cannot service its debts, the customer cannot demand payment from the government any more than from an insurance fund. The customer bears the loss alone, unless the service provider itself has made arrangements to secure the customer's assets. In accord with good business practice, the company would

be expected to inform the customer of the lack of deposit guarantee. It would not be realistic to assume that all customers will look into the matter on their initiative. It is hoped that the media will understand the importance of informing the public of the difference between a customer account and a bank deposit. The worst case scenario in the poor communications case is that a company that is losing money, excessively in debt, and barred from other financing by a poor credit rating could begin to collect low-interest risk capital from uninformed customers.

Under the proposed system, the company collecting customers' funds would obtain a type of debt financing from its customers. The aim of the legislation is not however, according to the legislative rationale, to create a new form of finance for these companies but rather to increase households' options. In addition to cash itself and banks' transaction accounts, there would be a third means of holding money intended for making daily purchases. The reform would increase competition and alleviate the service access problem caused by the contraction of banks' branch networks. It would also level the playing field among different forms of company organisation.

From the company's perspective, the customer account system could be a good way of making it easier for customers to pay and of strengthening customer loyalty, and companies have shown a definite interest in such an arrangement. Under the old legislation, retail stores have actually offered their customers not only savings association accounts but also special accounts, arranged in cooperation with deposit banks. Although the store's trade name and logo have been more obviously in the public eye in the context of marketing these accounts than have the bank's, the customer's account is actually in the bank that is partnering with the store.

New regulations for e-money

A new payment instrument has gradually taken its place alongside banknotes and coins, the traditional types of cash. This new e-money resembles traditional cash in many ways and can take the form eg of a smart card or digital cash loaded on a computer hard disk. This money moves across the memories of various technical devices, and the holder need not at any stage be in direct contact with the issuer. Nor does the issuer need to know who the money-holders are. An e-money holder, like a banknote holder, normally does not receive interest. Traditional banknotes and coins are issued only by central governments and central banks, whereas e-money issuers are usually private firms.

Issuers may collect fees from consumers spending e-money or the recipient businesses – possibly both. An e-money issuer's asset-liability structure may be such that interest income clearly exceeds interest expenses. The issuer sells its payment instruments to the public and acquires interest-free liabilities. The funds received can then be profitably invested. Hence the issuer has interest-earning assets and interest-free liabilities, and so enjoys the benefits of seigniorage.

E-money is perhaps most useful in Internet commerce. Card-stored money is used in connection with certain ATMs and perhaps – in place of coins – for small purchases in common retail outlets. Compared to credit and debit cards, e-money ranks high in terms of anonymity: the payer can, if desired, withhold his identity from the seller.

As yet, these payment instruments have not achieved wide popularity. In Finland, Automatia Rahakortit Oy and the three largest banking groups have maintained a payment card system for many years, but most consumers have not acquired the devices needed for using such money, nor have payment cards been otherwise widely used. The need for e-money could increase if online commerce gained in popularity.

Regulation of e-money by authorities is a new development. In Finland's old legislation, there are no regulations pertaining exactly to e-money. The European Parliament and EU Council in September 2000 issued a directive on the activities of e-money issuers (2000/46/EU). It is intended that a Government bill be presented that would implement the directive's minimal provisions in Finland but would not go further toward more comprehensive regulation of e-money.

The revised legislation allows for two types of e-money: single-use and multi-use e-money. Single-use e-money is accepted in payment only by the issuer. This type of money can be distributed by companies among their customers and accepted in payment, subject to roughly the same conditions as for customer accounts. Multi-use e-money, by contrast,

can be accepted in payment more widely. The right to issue this type of money will be limited to credit institutions. Avant is a multi-use e-money system owned by the large Finnish banks.

Legislation covers payment organisations

The payment organisation is a new concept in Finnish legislation, which under the Government bill would be incorporated into national law along with the directive on e-money. A payment organisation would be a credit institution specialising in payment transmission and e-money issuance. The two functions are closely linked in the new credit institution legislation.

A payment organisation would collect repayable funds from the public only for purposes of payment transmission and e-money issuance. It would not lend to the public but would instead invest eg in government debt instruments or deposits in other credit institutions. According to the bill, it must at all times hold low-risk, liquid assets amounting to at least its total outstanding issuance of e-money plus debt incurred in connection with payment transmission. Capital requirements for a payment organisation differ substantially from those for other credit institutions. Its own funds must amount to at least 2% of debts deriving from payment transmission and e-money issuance. E-money will be repayable on demand at nominal value. These regulations are based on the directive on e-money issuers. In adopting the directive's regulations into Finnish legislation, it is ensured that Finnish e-money issuers can operate also in other EEA countries.

Other reform measures

The Government bill on amendment of credit institution legislation also includes regulations on outsourcing of credit institution operations. Use of agents in offering banking services would be allowed, subject to certain requirements, including notification to the FSA. Use of an agent cannot hinder risk control nor internal monitoring. A credit institution must be able to obtain from an agent all such information as needed for its own risk control and official supervision. The FSA will have the right to prohibit use of an agent if these conditions are not met. A bank will also be able to offer services via an agent in an area lacking adequate customer base to warrant the establishment of a branch office. The reform would also be good regional policy, as it could improve service access in sparsely populated areas.

It is proposed that a legislative provision be included that would give everyone the right to basic banking services. Banks' would have the right to refuse services to someone only for special cause, which would have to be specified. The bill does not contain details on acceptable causes. In the rationale for the legislation, examples are presented in which a customer had previously broken an agreement and in which a bank had the right to refuse credit services to a person whose credit standing was unclear. The banks' obligation to provide services will hardly prevent them from being at all selective as to customers: the typical agreement may contain provisions that will attract only desired clientele.

The new legislation will also introduce a new term, 'credit organisation', to denote a credit institution that is not a deposit bank. Such credit institutions are already in existence. Finance companies, credit card firms and mortgage banks are credit institutions that are not deposit banks. Thus the legislative change would not be earth-shaking. A credit organisation cannot collect deposit funds from the public nor funds that it would not be obliged to repay on demand. The bill does include one exception to the prohibition. If a company issues e-money, it can accept repayable-on-demand funds for this purpose. Instead of collecting deposit funds, a credit organisation would be able to raise finance eg by issuing certificates of deposit and bonds. Such debts are not repayable on demand but instead have pre-specified maturity dates.

31 October 2002

■ Key words: customer account, e-money, financial regulation

Network-based payments and e-settlement – a long-term perspective[1]

by **Harry Leinonen**, Adviser to the Board
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Current payment clearing conventions, albeit now electronically automated, have evolved out of paper-based physical processing and transport. In order to further increase efficiency and improve services, payment systems need to be re-engineered. The main drivers for change will be

- the possibilities of modern network-based real-time processing
- the need for a clear and universal account number convention
- the benefits of a direct decentralised interbank settlement facility, ie e-settlement.

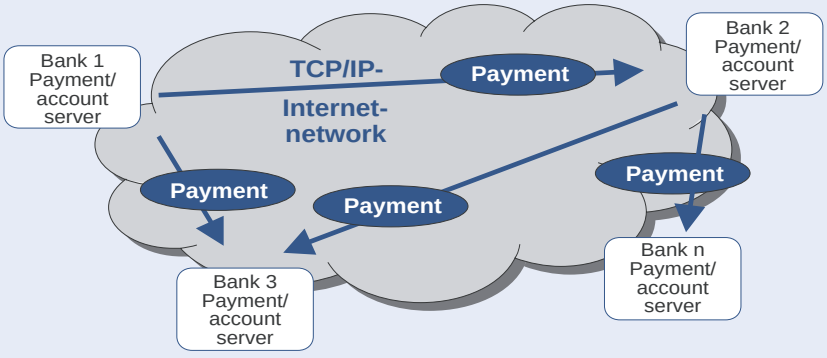
The new technology of telecommunications – mainly Internet technology (TCP/IP) based networks, security facilities such as public key infrastructure (PKI) and hardware-secure modules (eg chip cards or secure PC boards), real-time processing, low cost and efficient server hardware, etc – will be the basis for this re-engineering.

At the Bank of Finland the 'E-settlement Prototype Project' was launched in order to determine the possibilities and benefits related to the new technologies for payment processing. This article provides a broad summary of the findings of the project.

Connecting networks

Today everybody is connected via networks. Using Internet and email we can send different kinds of messages, virtually in real-time, to most of the bank employees in the world. However, we lack these possibilities for payment messages. By extending the decentralised network concept of Internet to payments using secure and dedicated TCP/IP networks like SWIFTnet, we can build a new end-to-end and straight-through-processing (STP) payment process without any intervening clearing and sorting centres. The network sorts the payments by transporting them to the given network address in the same way that an email is routed to the given network server as described in Chart 1. In the email system, banks have email/mailbox servers. In a network-based payment

Chart 1. Direct interbank communication in a network-based infrastructure



[1] The views expressed here are those of the author and do not necessarily reflect the views of the Bank of Finland.

Chart 2a.
Standardised account addresses in a common account number space

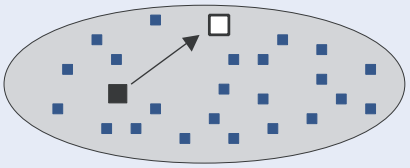
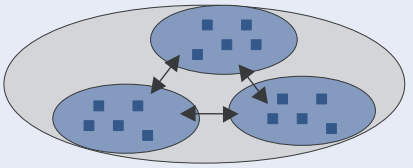


Chart 2b.
Interoperable bridges between service providers sharing the common account number space



system, the banks will need payment/account servers; otherwise, the concept is quite similar.

International bank account number

In order to route payment messages efficiently, in a network-based solution or any traditional system, one would need a universal account number convention, which clearly indicates the address of any account in the system. This could be compared to the address of mailboxes in Internet or international GSM-telephone numbers for routing sms-messages, as shown in Chart 2a. The international account number IBAN (International Bank Account Number) seems to be the preferred option. If all banks implement IBANs properly, the customer will need only to state the correct IBAN and the payment will be routed to the proper account. This will require that the systems have search tables from which the right BIC (Bank Identification Code), bank name, network address etc can be found, based on the IBAN. These kinds of modules and search tables are emerging[2]. Without a universal account number-space, efficient cross-border STP cannot be achieved. Interoperable bridges are needed to route payments between the accounts of different service providers, as described in Chart 2b.

Settlement challenges

The network environment is decentralised, and telecommunication builds bridges between the different independent but interoperable entities in the network. As regards payments, these bridges must transfer payment messages as well as interbank settlements. This is the main difference as compared to other messaging systems. In a decentralised network-based environment, the settlement method should also be decentralised, for the sake of efficiency. In this environment, the settlement method will need to entail immediate finality between all the different participating service-providing institutions (mainly banks). The proposed e-settlement model introduces new automated and electronic possibilities for interbank settlements. E-settlement is one possible settlement method for the next generation of payment systems that can already be employed in current payment systems.

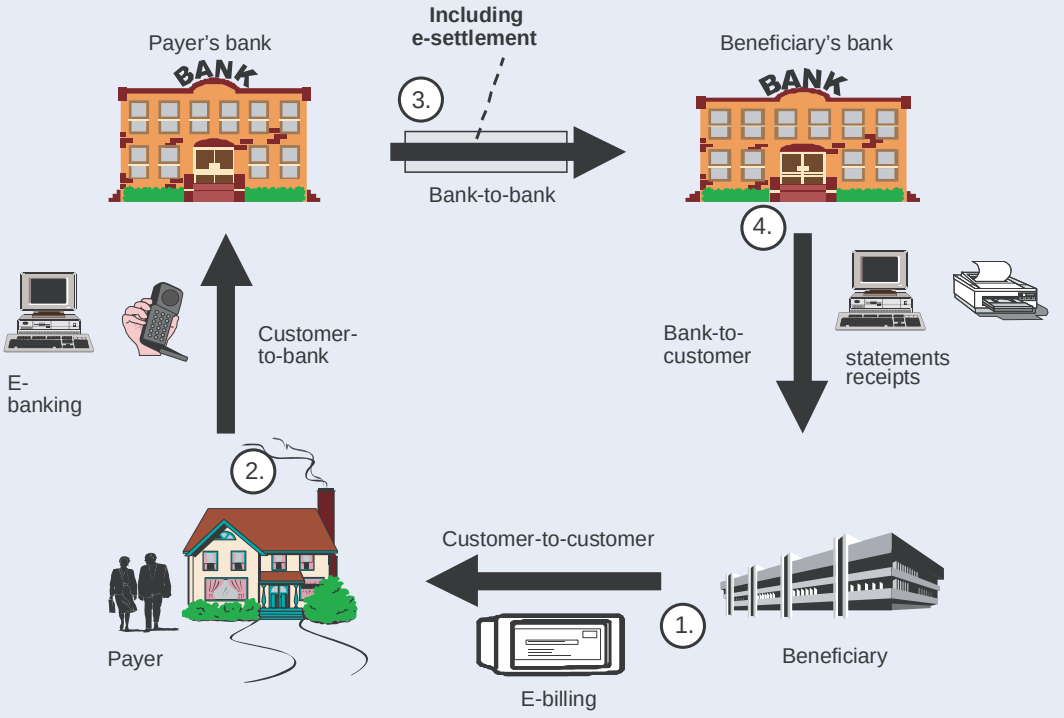
The interbank settlement process itself will have to be a well-integrated part of the payment process, with end-to-end control from sending to receiving bank. In order to support rapid payment transfers, the settlement method must also support real-time processing. An efficient settlement system also supports continuous reconciliation – for immediate error detection. It is also important that most of the security and control features be built into the system, to enable immediate reaction.

The e-settlement process is designed to support and accomplish final interbank settlement in central bank money in real-time for end-to-end payments in the STP mode. It should be seen as one essential part of the whole payment (credit transfer) circle, as described in Chart 3.

(1) The payer receives a bill or other instruction from the beneficiary concerning a payment to be made. (2) The payer then sends the instruction to his bank for processing and routing to the beneficiary's bank. (3) The interbank leg includes e-settlement, so that the beneficiary's bank receives both the payment message and the final settlement. (4) The benefici-

[2] For details on IBAN, see the Thomson Financial Publishing website: www.tfp.com/payment.shtml or the European Committee for Banking Standards (ECBS) website: www.ecbs.org

Chart 3. E-settlement as part of the credit transfer circle



ary's bank can then inform the beneficiary as to the incoming/final payment. This credit-push/credit-transfer type of payment is the most convenient and efficient payment type in a network real-time world. It includes fewer processing and transportation legs than electronic credit/debit card payments, direct debits, or electronic cheques. In credit transfers, the payer's bank identifies its customer, checks the payment instruction, and debits the payer's account; the beneficiary's bank checks the settlement and credits the beneficiary's account. In the future real-time world, payments will be processed within seconds in the same way as email and sms messages are now processed.

The e-settlement solution should be seen as part of the future payment infrastructure, which will support increased

– e-commerce via Internet
– real-time security and money market deals and transfers
– mobile payments (currently GSM-based but soon UMTS-based)
– cross-border volumes.

The payment world (for all types of payments) will be changing, as will all other messaging systems, from slower-paced batch processing to immediate real-time service, integrated directly with user systems in a global network community.

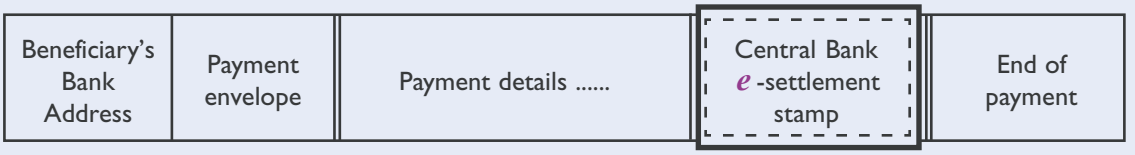
E-settlement

E-settlement provides a solution that can be integrated into current systems, using part of the existing infrastructure, and hence it facilitates a gradual change from current structures to new e-based structures.

The fundamental idea of e-settlement is the attachment of a digital e-settlement stamp to each (current-type) payment message, as shown in Chart 4.

The e-settlement stamp is added to the payment message and serves to transfer central bank money from payer's bank to beneficiary's bank. Final settlement is part of the payment message and takes the form of an electronic central bank draft. The electronic stamp will accompany the payment through the interbank payment network to the receiving bank,

Chart 4. The digital e-settlement stamp as part of the payment message



as shown in Chart 5. The electronic stamp, which can be perceived as a modern version of the central bank draft, is the central-bank-money cover for the payment(s) it accompanies.

The stamps are protected by very strong and modern cryptographic technology (eg PKI). They are produced and decoded by e-settlement modules situated close to banks' payment systems, as shown in Chart 6.

The e-settlement modules are tamper-resistant devices provided by the central bank to each participating bank. These are closely integrated with banks' payment systems, eg directly integrated with the SWIFTnet network access platform CBT (Customer Business Terminal), which makes settlement transfers a highly automated part of payment processing. Integrating the new settlement process will be quite straightforward, given that it will be done on the access-platform (eg SWIFT CBT) level. In traditional RTGS (Real-Time Gross Settlement) systems, banks' settlement accounts are located in the centralised RTGS system. In the e-settlement system, each bank's settlement account is distributed to the bank's own processing site in a central-bank-controlled e-settlement module. This module should be regarded as a completely automated central bank branch serving each participant via a single account. Each bank has access to its own account, as before, but is much more closely integrated in a more automated and efficient way. The distribution of central bank money in electronic format to banks' payment platforms is the essential feature of the e-settlement approach. The distributed e-settlement modules need to be highly secure and to meet at least the same security standards as do traditional RTGS systems. The system should also be generally open and independent, to support the various payment networks used by banks.

Interbank network

A dedicated interbank network (Chart 7) is needed to link together all participating banks and the central bank, for the purpose of processing payments.

The interbank payment network is the essential part of a network-based payment system. All the banks can address each other directly and send payments to each other without a centralised processing and routing site. This is the essential new paradigm introduced by Internet communications (TCP/IP networks). All participants can operate independently; they need only enough networking capacity to meet their own needs. System administration is needed only for actual administrative purposes – not for payment

Chart 5. Combined payment and cover transfer processing in the network

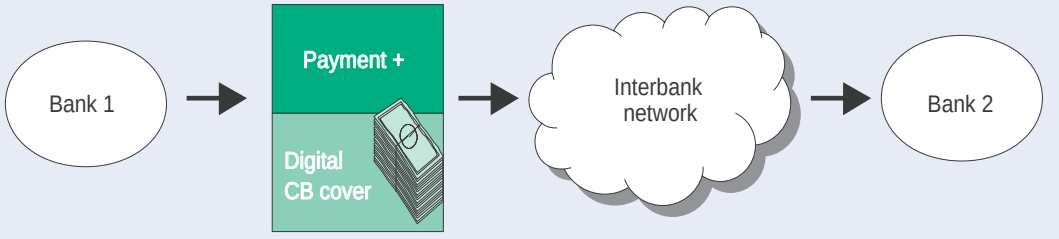
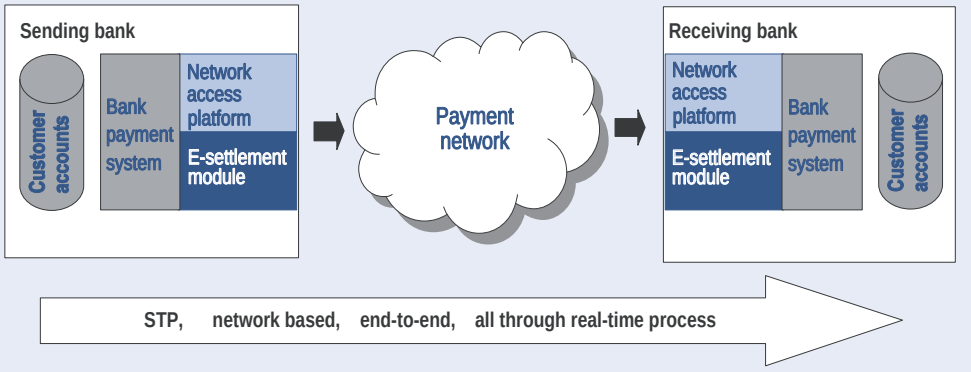


Chart 6. E-settlement modules as closely integrated parts of banks' payment systems



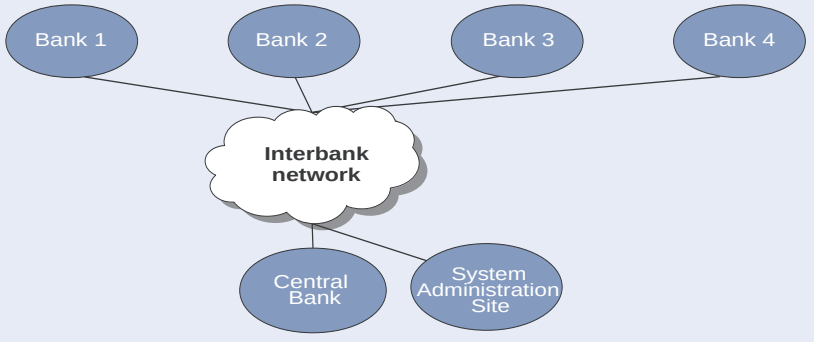
processing. The new SWIFTnet network, introduced by SWIFT, can support direct communications between all participants. There are also national dedicated payment networks with the same capability, eg the interbank network Pankkiverkko in Finland.

Immediate liquidity

For settlement purposes, banks need liquidity. Liquidity is transferred by the central bank to the system (ie e-settlement modules) at the start of the day. It can be increased during the day by the central bank via liquidity transfers or payments to the banks. At the end of the day, liquidity is transferred back to the central bank. The liquidity in the settlement modules is thus composed of positive balances of central bank money, originally in the traditional form of reserve deposits, intraday credits etc, but transferred from the centralised system in the morning to e-settlement modules for use during the day in making e-settlements. In the evening, the liquidity will be transferred back to the centralised accounts for overnight bookings. When, sometime in the future (as predicted), interbank payment systems provide 24-hour/7-day service, the e-settlement modules could be run continuously by simply reporting the balance at the turn of the accounting day.

In a true real-time environment, there is generally little scope for the various types of liquidity saving features, based on delaying/queuing of payments. Customers are waiting for direct confirmation of their payments. A bank that is frequently obliged to inform its customers that payments are queued – waiting for liquidity – will lose customers. In the real-time environment, customers expect direct delivery.

Chart 7. A dedicated interbank network connecting all payment processing participants



Still, the e-settlement module could contain basic queuing facilities for situations in which the available liquidity is not sufficient or customers are willing to accept delays. These would be decentralised queues, designed for different levels of complexity. Bilateral netting could be accomplished in the distributed e-settlement system through bilateral netting requests to check whether there are transactions also queued at the other end. Multilateral netting requires a circular polling method or a centralised netting agent. Different types of netting and advanced liquidity saving features would complicate the system. It is advisable to keep the basic system very simple; possible add-on services should be provided separately.

High security and availability

The system's security features must be carefully designed. The settlement balance and all security keys need to be in tamper-resistant environments, and all encryption algorithms must be highly reliable. There should be no possibility of system intrusion, and any type of 'hacking' should be immediately detectable. The system will be closed, with settlement money circulating among a limited number of trustworthy users. The system will include automated reconciliation at end-of-day, from time to time during the day, and in connection with each transaction. In a network-based environment, all parts – centralised and distributed – must be well secured. A digital/electronic version of the four-eyes principle would need to be implemented. Two different controlling programs and two different encrypted and tamper-resistant storage devices would protect the money balances. The separate controlling functions monitor each other so that there is no individual IT developer or development team having possession of all the necessary programming code. In case of an intrusion attempt, all critical information would be destroyed at the site and the system administrator(s) would receive a security alert.

In a distributed system, a malfunction will generally affect only one participant at a time and only those payments to and from that particular participant. In order for the participant to re-establish normal operations quickly, there should be back-ups and mirrored devices for all critical components. Redundant information in the e-stamps enables parsing of information from completely destroyed IT sites. It also supports direct switching of functionalities and services to working parts of the network. This makes a distributed system more robust than a traditional centralised system.

The benefits

The main benefit of e-settlement is that it enables redesign of the whole payment system process in an efficient way, using new network possibilities. It thereby creates the next generation of payment systems infrastructures and makes the settlement process more efficient. Payment systems will change considerably in the near future due to modern technology, and it would be an advantage to modernise the settlement conventions at the same time.

The decentralised network-based model facilitates direct real-time communication. General standards will result in an STP process. The best example is the current email system and its standards. These are applied worldwide, at exceptionally low costs, and provide an efficient and rapid communication system. Email costs are so low that they are usually included in general overhead; hardly anyone bothers to report them separately. The same type of infrastructure, with additional security elements and the settlement function, could be developed for the payment sector.

The cost-advantage of the e-settlement system is in the low processing costs of adding the e-settlement stamp that enables instant final settlement in central bank money. The extra processing cost of adding the e-settlement stamp will be practically nil. It will be an integral part of the payment process itself. Banks need only invest in low cost equipment. The very low transaction costs for e-settlement will enable banks also to transfer payment flows from centralised processing centre systems to more efficient decentralised network-based communications. The bottlenecks created by centralised resources will disappear and even the dependence on critical centralised resources will be dramatically reduced. E-settlement could offer a solution for integrating the euro-area payment systems, and a multi-currency version could serve an even larger area. In order to achieve large-scale benefits via the e-settlement model, the number of participating banks and the payment flows must be sufficiently large.

Picture. E-settlement prototype configuration

The e-settlement approach will also reduce settlement risk, because all settlements are done in central bank money with immediate finality. The reconciliation and control functions in the system will also reduce the likelihood of errors, or at least speed up the process of finding them. In general, decentralised systems are more resilient than centralised systems.

Prototype experiences

The Bank of Finland has conducted the E-settlement Prototype Project for the purpose of analysing the benefits and challenges of the e-settlement model. The prototype consists of a group of emulated banks sending payments to each other via a TCP/IP network under the control of a liquidity-providing central bank and an administrative centre that monitors system security (see Picture above) The prototype includes, inter alia, the basic core elements of a network-based payment infrastructure (eg TCP/IP network), direct addressing and transfers, multi-level PKI encryption, decentralised account management, liquidity control, and continuous automated reconciliation. Prototype testing has shown that the e-settlement concept is technically possible and reliable. Cost-benefit analyses show that clear advantages can be achieved in all kinds of payment system environments (correspondent banking, ACH – Automated Clearing House – RTGS) by utilising a network-based approach for payments and settlements.

4 November 2002

■ Key words: network-based payment systems, interbank settlement, payment system integration

Results from the Prototype Project are posted on the Bank of Finland's website, www.bof.fi/sc/e-settlement, and in the Bank's Discussion Paper 23/2002 by Harry Leinonen, Veli-Matti Lumiala and Riku Sarlin, *Settlement in modern network-based payment infrastructures – description and prototype of the e-settlement model*. Further information on developments in payment system infrastructures can be found in the Bank's Discussion Paper 17/2000 by Harry Leinonen, *Re-engineering Payment Systems for the E-world*.

Items

Second supplementary budget for 2002

Parliament approved the second supplementary budget for 2002 on 22 November 2002. It shows a surplus of EUR 268 million. The revenue estimate was increased by EUR 370 million and the expenditure estimate by EUR 102 million. Tax revenue was estimated to decrease by EUR 532 million while other revenue – in this case mainly from privatisation – was increased by EUR 902 million, as compared to the regular and first supplementary budgets for 2002.

Finland's arctic-inspired gold euro coin

The Ministry of Finance has minted a limited number of EUR 100 gold coins in celebration of the first year of the euro. The gold coin was struck by the Mint of Finland Ltd and has been on sale since 6 November 2002. A total of 25,000 coins were minted and, due to strong demand, the Mint had sold out by mid-November. This coin is unique both for being the first Finnish gold euro coin and for having a serial number on its edge. The coin measures 22 mm in diameter and weighs 8.6 grams. Each coin is composed of 90% gold, 5% silver and 5% copper. The selling price of the proof-quality coin is EUR 315, plus postage.

This first gold euro coin was designed by Toivo Jaatinen and has been inspired by the scenery of Lapland in the northernmost part of Finland, with its barren and fascinatingly beautiful arctic landscapes. The obverse of the coin features mountain brooks and a pine tree in a stylised landscape, and refers to the gold panning that is still carried out widely in Lapland. The reverse of the coin shows a sequel of sun movements in the northern sky at midnight indicating how the sun does not set during the summer months. The sun shimmers over a lake and on the horizon Lapp fjelds meet with the northern sky and clouds.

Eurosystem monetary policy instruments

15 November 2002

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 Eurosystem monetary policy and have a major impact on the shortest money market rates. From the start of 1999 to June 2000 the main refinancing operations of the Eurosystem were conducted via fixed rate tenders. At its meeting on 8 June 2000 the ECB Governing Council decided that, starting with the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tenders, using the multiple rate auction procedure. The Governing Council also decided to set a minimum bid rate for these operations. The minimum bid rate was initially 4.25%, the same level as applied in the previous fixed rate tender operations. Since then, the minimum bid rate has been changed six times. Effective 14 November 2001, the minimum bid rate is 3.25%. In the new procedure, the minimum bid rate signals the monetary policy stance, which previously was indicated by the rate applied to fixed rate tenders.

The Eurosystem uses the rates on its standing facilities as a corridor for overnight market interest rates. The interest rates on the marginal lending facility and deposit facility are set separately by the Eurosystem.

Effective 9 November 2001, the interest rate on the Eurosystem marginal lending facility is 4.25% and the overnight interest rate on the deposit facility 2.25%.

Open market operations

Open market operations play an important role in Eurosystem monetary policy. They are used for the purposes of steering interest rates, managing market liquidity, and signalling the stance of monetary policy. Open market operations are normally executed by 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 national central banks via standard tenders with two-week maturity. They play a pivotal role in pursuing the purposes of Eurosystem 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 monthly frequency and three-month maturity. These operations are used to provide counterparties with additional longer-term refinancing. These operations are not intended for market signalling and hence they 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 national central banks primarily as reverse transactions, but they can also take the form of outright transactions, foreign exchange swaps or collection of fixed-term deposits. Fine-tuning operations are executed via quick tenders or bilateral procedures. Under exceptional

[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 twelve national central banks in the Eurosystem.

circumstances and by decision of the ECB Governing Council, the ECB may execute fine-tuning operations in a decentralised 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 movements 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 national central banks against eligible assets. The interest rate on the marginal lending facility provides a ceiling for the overnight market interest rate. Counterparties can use the deposit facility to make overnight deposits at 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 minimum reserve system applies to credit institutions in the euro area and is used primarily for stabilising money market interest rates and creating (or enlarging) a structural liquidity shortage. The reserve base for a credit institution is defined in terms of liability items on its balance sheet. The reserve base includes deposits, debt securities issued and money market paper. However, liabilities vs other institutions subject to the minimum reserve system are not included in the reserve base. Liabilities included in the reserve base are subject to a 2% or 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 stabilising interest rates, the Eurosystem minimum reserve system enables institutions to make use of averaging provisions. Compliance with the reserve requirement is determined on the basis of an 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. When the main financing operations are conducted as variable rate tenders, the interest rate on minimum reserves is determined on the basis of the marginal interest rates applied in the tenders held during the maintenance period in question.

With effect from the start of 2001, the group of institutions in Finland subject to the minimum reserve requirement was extended to include all institutions, in addition to deposit banks, that are authorised to operate as credit institutions. The purpose of this change was to bring the definition of institutions subject to the minimum reserve requirement into line the practice applied in other euro area countries. A list of the institutions subject to the Eurosystem minimum reserve requirements is available on the ECB website (https://mfi-assets.ecb.int).

Counterparties to monetary policy operations

Credit institutions subject to Eurosystem minimum reserve requirements may, in general, access Eurosystem standing facilities and participate in the Eurosystem's main refinancing operations and longer-term refinancing operations. The Eurosystem has limited the group 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 group 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 Eurosystem 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 Eurosystem monetary policy instruments is posted on the Bank of Finland's website (http://www.bof.fi/eng/2_rahapolitiikka/index.stm).

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Abstracts

Series E

Edge: a model of the euro area with applications to monetary policy
Mika Kortelainen
23/2002

■ Key words: Edge, rational expectations, heterogeneous expectations, learning, dynamic general equilibrium model

We ask the question: Does it matter whether expections on monetary policy are heterogeneous across agents in the economy? We tackle this issue with the aid of a dynamic general equilibrium model with nominal rigidities. The most important features of the model include consumption/saving decisions according to Blanchard's stochastic lifetimes approach; valuation of private financial wealth according to the present value of capital income; overlapping Calvo wage contracts in the labour market; and a neoclassical supply side with Cobb-Douglas technology. The model is calibrated to match the first and second moments of the publicly available euro area data. In simulation checks we find that the autocorrelation structure of the model, when subjected to stochastic shocks, also resembles that of the euro area data. Furthermore, diagnostic simulation results of the model provide intuitively appealing economic responses. In studying the effect of heterogeneity of expectations, we distinguish between central bank expectations and private sector expectations. The results show that if private sector expectations differ from central bank expectations, there will be real costs to the economy. We also show that the existence of a learning mechanism in the economy results in significantly smaller costs to the economy. And we find that random shifts interpreted as lack of transparency cause changes in private sector expectations, which generate costs in the form of higher variability in the economy. All in all, our results show that heterogeneity of expectations on monetary policy may generate economically significant costs.

Discussion papers

Reconciling the New Keynesian model with observed persistence
Kenneth Leong
19/2002

■ Key words: New Keynesian model, rational expectations, persistence, open economy

Despite sound theoretical foundations, a drawback of the New Keynesian model is its inability to generate adequate persistence in the variables it seeks to explain. A common solution is to modify the model to include lagged variables. However, this is unsatisfactory, as many such modifications depart from the microeconomic underpinnings of the original model. This paper presents results from simulation exercises that support the fully forward-looking New Keynesian model. In particular, we show that the exchange rate channel of monetary policy, which has been largely overlooked in existing studies of persistence, is instrumental in generating inflation persistence. However, the combination of full forward-looking behaviour and an open economy is unable to generate sufficient persistence in the output gap. Adding an autocorrelated noise term to the assumption of rational expectations makes the model capable of generating persistence matching that of US inflation, the output gap, and the nominal interest rate, as well as the real exchange rate.

Inflation dynamics in the euro area and the role of expectations
Maritta Paloviita
20/2002

■ Key words: Phillips curve, expectations, euro area

This paper assesses empirically the two main alternative specifications of the output gap-based Phillips relation for the euro area: the older expectations-augmented Phillips curve and the New Keynesian Phillips curve. The main focus is on the role of expectations and comparison of the two theories. Instead of imposing rational expectations, an alternative and in principle less restrictive approach is applied to operationalising expectations. Direct measures of

inflation expectations, ie OECD forecasts, are used as empirical proxies of economic agents' inflation expectations. The main interest is in the euro area as a whole, although potential heterogeneity of inflation dynamics is also examined across eleven EMU countries. According to the results, inflation expectations are central to the inflation process in all euro area countries. The paper finds evidence that the New Keynesian Phillips curve fits the euro area data slightly better than the expectations-augmented Phillips curve. Research on expectations formation would be an important complement to the present study.

Nonlinear dynamics of interest rate and inflation

Markku Lanne
21/2002

- Key words: nonlinear models, interest rate, inflation, cointegration analysis

According to several empirical studies, US inflation and nominal interest rates, as well as the real interest rate, can be described as unit root processes. These results imply that nominal interest rates and expected inflation do not move one-for-one in the long run, which is not consistent with the theoretical models. In this paper we introduce a nonlinear bivariate mixture autoregressive model that seems to fit quarterly US data (1952 Q1 – 2000 Q2) reasonably well. It is found that the three-month treasury bill rate and inflation share a common nonlinear component that explains a large part of their persistence. The real interest rate is devoid of this component, indicating one-for-one movement of the nominal interest rate and inflation in the long run and thus stationarity of the real interest rate. Comparisons with a linear vector autoregressive model reveal that in policy analysis the consequences of neglecting nonlinearities can be substantial.

Dynamics of investment behaviour in Finland: aggregate and firm level evidence

Jouko Vilmunen
22/2002

- Key words: accelerator, user cost, transmission of monetary policy, panel data

In this paper we estimate reduced form investment equations for Finland using aggregate as well as firm-level panel data. We obtain significant estimates of the accelerator and user-cost effects on investment with both aggregate and firm level data, but these effects appear to be stronger at the aggregate level. Although the response of firms' investment spending to shifts in monetary policy seems to be quantitatively nontrivial, it is surprisingly weak according to the results with firm-level data, and a considerable amount of heterogeneity also exists across firms in this respect. The firm-level estimates do not provide evidence for the existence of binding financing constraints in firms' investment spending, at least among the sampled large firms, as we cannot obtain a significant coefficient estimate on the cash flow variable.

Settlement in modern network-based payment infrastructures – description and prototype of the E-Settlement model

Harry Leinonen – Veli-Matti Lumiala – Riku Sarlin
23/2002

- Key words: network-based payment systems, settlement systems, interbank settlement, payment system integration

Payment systems are undergoing rapid and fundamental changes stimulated largely by technological progress, especially distributed network technology and real-time processing. Internet and e-commerce will have a major impact on payment systems in the future. User demands and competition will speed up developments. Payment systems will move from conventions that were originally paper-based to truly network-based solutions.

This paper presents a solution – E-Settlement – for improving interbank settlement systems. It is based on a decentralised approach to be fully inte-

grated with the banks' payment systems. The basic idea is that central bank money, the settlement cover, is transferred as an encrypted digital stamp as part of the interbank payment message. The future payment systems would in this model operate close to the Internet/email concept by sending payment messages directly from the sending bank's account/payment server to the system of the receiving bank with immediate final interbank settlement without intervening centralised processing. Payment systems would become more efficient and faster and the overall structure would be come straightforward. The E-Settlement and network-based system concept could be applied with major benefits for correspondent banking, ACH and RTGS processing environments.

In order to assess this novel idea, the Bank of Finland built a prototype of the E-Settlement model. It consists of a group of emulated banks sending payments to each other via a TCP/IP network under the control of a central bank as the liquidity provider and an administration site monitoring the system security.

This paper contains an introduction to network-based payment systems and E-Settlement, the specifications of the E-Settlement model and the description, results and experiences of the actual E-Settlement prototype.

Variable rate liquidity tenders

Tuomas Välimäki
24/2002

■ Key words: money market tenders, liquidity policy, bidding, central bank operational framework

This paper constructs an equilibrium model for the short-term money market, when the central bank provides liquidity via variable rate tenders. The relation between market rate of interest and liquidity is derived from a single bank's profit maximisation problem in the interbank market, and the CB determines its liquidity provision by minimising a quadratic loss function that contains both deviations of expected market rate from CB target rate and differences between liquidity supply and target liquidity. We model equilibrium bid behaviour in the tenders and explain the underbidding phenomenon resulting from the minimum bid rate. We also show that, when maturities of consecutive operations overlap, the expected market interest rate will rise above the CB's target whenever a target rate change (hike or cut) is expected to occur in the same reserve maintenance period. Finally, we review the data from the ECB variable rate tenders and find that the ECB has been fairly liquidity oriented in its allotment decisions.

Bank exit legislation in US, EU and Japanese financial centres

Peik Granlund
25/2002

■ Key words: bank, regulation, supervision, reorganisation, liquidation

This paper analyses bank exit (ie reorganisation and liquidation) legislation in selected financial centres: New York, London, Frankfurt, Helsinki and Tokyo. The focus is on bank exit legislation applicable to commercial banks. The legislation is analysed from the perspective of bank stakeholders, ie bank creditors, depositors and bank shareholders. The analysis is restricted to those legislative provisions that provide security and rights for stakeholders in case of bank exit. In addition to current conditions, the paper covers the main legislative changes of the latter part of the 1990s.

Economies of scale and technological development in securities depository and settlement systems

Heiko Schmiedel – Markku Malkamäki – Juha Tarkka
26/2002

■ Key words: securities settlement, economies of scale, technological progress

The paper investigates the existence and extent of economies of scale in depository and settlement systems. Evidence from 16 settlement institutions across different regions for the years 1993–2000 indicates the existence of significant economies of scale. The degree of such economies, however, differs by size of settlement institution and region. While smaller

settlement service providers reveal high potential of economies of scale, larger institutions show an increasing trend of cost effectiveness. Clearing and settlement systems in countries in Europe and Asia report substantially larger economies of scale than those of the US system. European cross-border settlement seems to be more cost intensive than that on a domestic level, reflecting chiefly complexities of EU international securities settlement and differences in the scope of international settlement services providers. The evidence also reveals that investments in implementing new systems and upgrades of settlement technology continuously improved cost effectiveness over the sample period.

Links between securities settlement systems: An oligopoly theoretic approach
Karlo Kauko
27/2002

■ Key words: oligopoly, securities settlement systems

This paper presents a duopoly model of the securities settlement industry. Because pooling a large amount of payments can help in using liquidity efficiently, issuers prefer systems where a large number of securities are issued. If the central securities depositories establish a mutual link that enables investors to make transactions in foreign securities, cost savings can be achieved. However, these links may have unexpected effects on CSDs' pricing, and the issuers' share of the fee burden can increase substantially. It is not advisable to ban additional fees for using the link, as the CSDs might simply increase the fee for domestic transactions.

BOFit Discussion papers

Too many to fail? Inter-enterprise arrears in transition economies
Antje Hildebrandt
11/2002

■ Key words: inter-enterprise arrears, soft budget constraints, transition economies

In advanced market economies, the use of trade credits is an important means of short-term financing and generally considered as being part of normal business practice. Some transition economies, however, have experienced a rapid accumulation of trade credits which have led to interlocking webs of arrears and collective bailouts by the government. In this paper, firm-level data is used to test whether trade credits are just part of normal business practice comparable to more advanced market-economies or whether trade credits represent a systematic phenomena supporting soft budget constraints of firms in transition. The results suggest that trade credits are not just normal business practice but that they can have negative spillover effects on other firms by worsening their financial situation. We conclude that the problem of interlocking effects is more pronounced in countries with less developed institutions, low financial intermediation and, overall, no credible commitment to market economic reforms.

Federal state shareholdings in Russian companies: Origin, forms and consequences for enterprise perfomance
Alexander Muravyev
12/2002

■ Key words: corporate governance, state ownership, firm performance, Russia

This paper studies the impact of federal state shareholdings on the performance of Russian companies. It differs from most similar studies in two respects. Firstly, it focuses on mixed ownership companies rather than conventional state enterprises. Secondly, it distinguishes between several types of federal state shareholdings, namely elected blocks,

residual blocks (which may be held by two bodies with different functions – the Ministry for State Property and the Russian Fund for Federal Property) and golden shares. The paper describes the origin of federal state shareholdings and discusses their possible implications for company performance. Econometric analysis shows that companies with state ownership generally perform worse than the average firm in terms of labour productivity and profitability. However, there are remarkable differences in the performance of companies with different types of state shareholdings. Companies with residual blocks held by the Property Fund are the worst performers, followed by companies with residual blocks held by the Ministry for State Property. Companies with elected shareholdings as well as with golden shares do not differ from the average enterprises in the respective industries. These differences in performance are explained by the different degrees of control the federal state has over enterprises with various types of shareholdings – greater control is associated with better performance. The paper concludes that the government should avoid keeping equity stakes in companies unless there is a good reason to retain them. If the state wants to keep an ownership stake in a company, reliable control structures must be created. Finally, the issue of golden shares in strategically important companies seems to be a reasonable alternative to retaining some control over them through equity ownership.

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 5,181,115 (31 December 2000) and an average population density of 17 per square kilometre. The largest towns are Helsinki, the capital, with 555,474 inhabitants, Espoo 213,271, Tampere 195,468, Vantaa 178,471 and Turku 172,561.

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 its 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 2000 to 1 March 2006, is Ms Tarja Halonen.

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; Centre 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, 1 by the Swedish People's Party, 2 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 a 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. All the Nordic countries joined the Shengen area on 25 March 2001.

Having abolished most quantitative restrictions on foreign trade in 1957, Finland first took part in European free trade arrangements under the aegis 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 start of 1994. Finland became a member of the European Union on 1 January 1995. Finland and ten other EU countries entered Stage Three of EMU in 1999.

The economy

Output and employment. Of the gross domestic product of EUR 119 billion in basic values in 2001, 1.3% was generated in agriculture, hunting and fishing, 2.1% in forestry, 27.7% in industry, 5.8% in construction, 11.1% in trade, restaurants and hotels, 9.8% in transport and communications, 3.7% in finance and insurance, 18.2% in other private services and 20.2% by producers of government services. Of total employment of 2.3 million persons in 2001, 5.8% were engaged in primary production, 27.7% in industry and construction and 66.4% in services.

In 2001 expenditure on the gross domestic product in purchasers' values amounted to EUR 136 billion and was distributed as follows: net exports 8.4% (exports

40.1%, imports –31.7%), gross fixed capital formation 19.8%, private consumption 49.9% and government consumption 21.0%. Finland's tax ratio (gross taxes including compulsory employment pension contributions relative to GDP) was 45.4%.

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, 3.6% in 1980–89 and 1.7% in 1990–99. Finland's GDP per capita in 2001 was USD 23,474.

Foreign trade. EU countries absorb the bulk of Finnish goods exports. In 1997–2001 their average share was 55.3%. Over the same period, Finnish exports to other European countries (including Russia) accounted for 18.6% and to the rest of the world for 26.1%. During the same period the regional distribution of Finnish goods imports was quite similar to that of exports: EU countries accounted for 57.2%, other European countries for 18.4% and the rest of the world for 24.1%.

In 2001 the share of forest industry products in total goods exports was 26.7%, the share of metal and electrical products 55.4% and the share of other goods 17.9%. Raw materials and intermediate goods and energy together accounted for 50.9% of goods imports, capital goods for 24.4% and durable and non-durable consumer goods for 24.7%.

Forest resources. Finland has abundant forest resources but only limited amounts of other raw materials. The growing stock comprises 1,927 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 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 start 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 start of 1999, the currency unit used in Finland is the euro, which is divided into 100 cent. The changeover to euro cash was effected in Finland, as in the whole euro area, at the start of 2002, and the markka ceased to be legal tender as of 1 March 2002.

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 of 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 December 2001). Finland has three major groups of deposit banks with a total of about 1,579 branches. In addition there are five smaller banks and banking groups. The commercial banks have a total of 19 foreign branches, subsidiaries and associate banks and 10 representative offices abroad. There are 40 savings banks, a group of cooperative banks (244) and 42 local cooperative banks. In addition, 7 foreign banks have branches and 5 foreign banks have representative offices in Finland.

Financial markets. The total stock of domestic credit amounted to EUR 119.6 billion at end-June 2002 and was broken down by lender group as follows: deposit banks 63%; insurance companies 4%; pension insurance institutions 12%; other credit institutions 11%; central and local governments and social security funds 10%.

In the money market, the total value of instruments outstanding was about EUR 25.0 billion at end-September 2002; bank certificates of deposit accounted for 52% of the total and Treasury bills, commercial paper and local authority paper for the rest.

At end-September 2002 there were 107 companies on the main list, 29 on the investors' list and 16 on the NM list of the HEX. At end-September 2002 total market capitalisation was EUR 127.7 billion for the main list, EUR 0.45 billion for the investors' list and EUR 0.31 billion for the NM list. Domestic bonds and debentures in circulation at end-September 2002 amounted to EUR 49.9 billion; government bonds accounted for 81% of the total. Share turnover on the HEX amounted to EUR 139.4 billion at end-September 2002.

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, EUR million

		2002			
		30.8.	27.9.	25.10.	29.11.
Assets					
1	**Gold and gold receivables**	505	505	516	516
2	**Claims on non-euro area residents denominated in foreign currency**	8,714	8,914	8,900	9,019
2.1	Receivables from the IMF	863	846	851	852
2.2	Balances with banks and security investments, external loans and other external assets	7,852	8,069	8,049	8,167
3	**Claims on euro area residents denominated in foreign currency**	698	688	688	662
4	**Claims on non-euro area residents denominated in euro**	0	0	0	0
4.1	Balances with banks, security investments and loans	0	0	0	0
4.2	Claims arising from the credit facility under the ERM II	–	–	–	–
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	2,332	2,783	1,857	1,311
5.1	Main refinancing operations	1,620	2,071	1,145	1,311
5.2	Longer-term refinancing operations	711	711	711	–
5.3	Fine-tuning reverse operations	–	–	–	–
5.4	Structural reverse operations	–	–	–	–
5.5	Marginal lending facility	–	–	–	–
5.6	Credits related to margin calls	–	–	–	–
6	**Other claims on euro area credit institutions denominated in euro**	1	1	1	1
7	**Securities of euro area residents denominated in euro**	–	–	–	–
8	**General government debt denominated in euro**	0	0	0	0
9	**Intra-Eurosystem claims**	3,255	3,255	3,312	3,281
9.1	Share in ECB capital	70	70	70	70
9.2	Claims equivalent to the transfer of foreign currency reserves	699	699	699	699
9.3	Claims related to the issuance of ECB debt certificates	–	–	–	–
9.4	Claims related to TARGET and correspondent accounts (net)	–	–	–	–
9.5	Claims related to other operational requirements within the Eurosystem	2,487	2,487	2,543	2,513
10	**Other assets**	864	866	894	886
Total assets		16,369	17,013	16,167	15,677

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

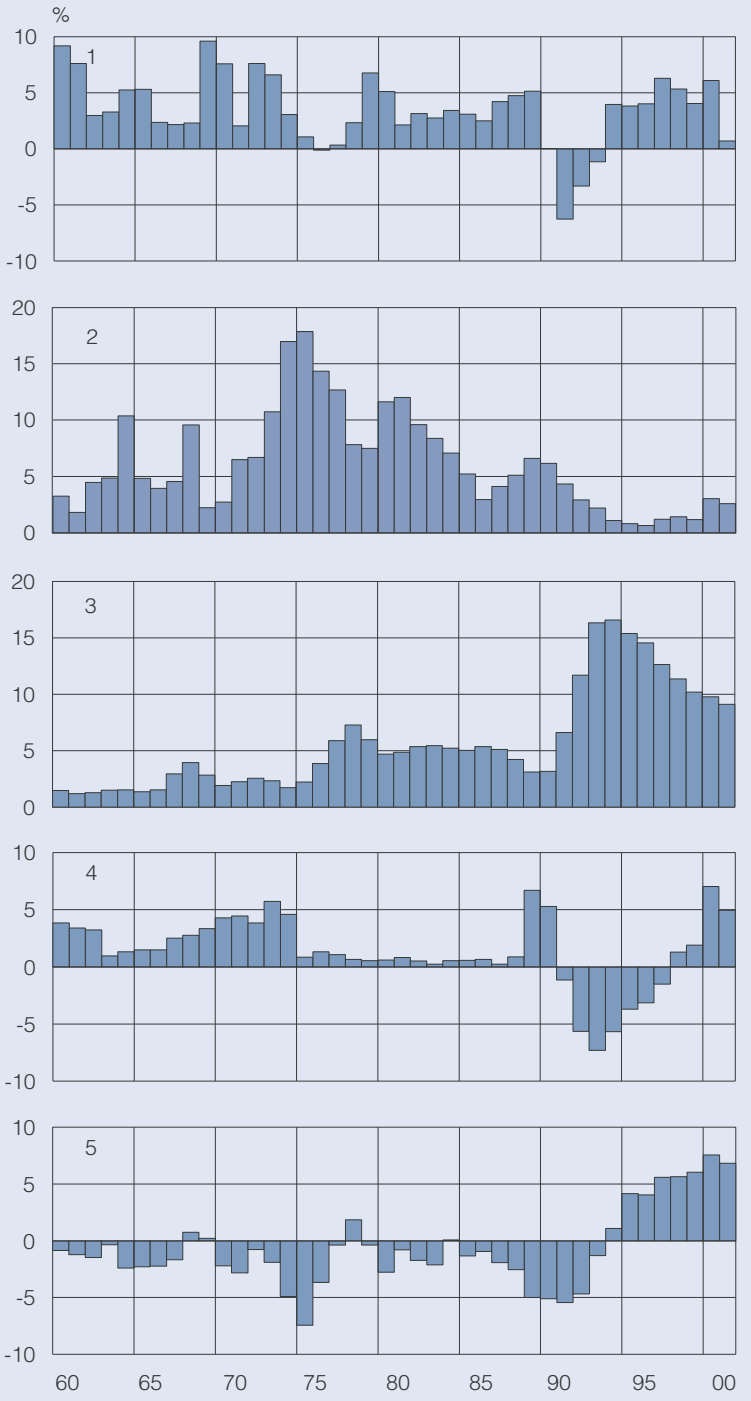
Liabilities

		2002			
		30.8.	27.9.	25.10.	29.11.
1	**Banknotes in circulation**[1]	5,055	5,088	5,195	5,348
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	2,993	2,292	2,630	3,669
2.1	Current accounts (covering the minimum reserve system)	2,993	2,292	2,630	3,669
2.2	Deposit facility	–	–	–	–
2.3	Fixed-term deposits	–	–	–	–
2.4	Fine-tuning reverse operations	–	–	–	–
2.5	Deposits related to margin calls	–	–	–	–
3	**Other liabilities to euro area credit insitutions denominated in euro**	–	–	–	–
4	**Liabilities to other euro area residents denominated in euro**	0	3	3	6
4.1	General government	–	–	–	–
4.2	Other liabilities	0	3	3	6
5	**Liabilities to non-euro area residents denominated in euro**	1	1	1	1
6	**Liabilities to euro area residents denominated in foreign currency**	56	73	–	24
7	**Liabilities to non-euro area residents denominated in foreign currency**	21	177	42	45
7.1	Deposits, balances and other liabilities	21	177	42	45
7.2	Liabilities arising from the credit facility under the ERM II	–	–	–	–
8	**Counterpart of special drawing rights allocated by the IMF**	190	190	192	192
9	**Intra-Eurosystem liabilities**	2,759	3,872	2,572	794
9.1	Liabilities related to promissory notes backing the issuance of ECB debt certificates	–	–	–	–
9.2	Liabilities related to TARGET and correspondent accounts (net)	2,759	3,872	2,572	794
9.3	Liabilities related to other operational requirements within the Eurosystem	–	–	–	–
10	**Other liabilities**	252	276	316	381
11	**Revaluation account**	597	597	774	774
12	**Capital and reserves**	4,444	4,444	4,444	4,444
Total liabilities		16,369	17,013	16,167	15,677

[1] According to the accounting regime chosen by the Eurosystem on the issue of euro banknotes, a share of 8% of the total value of the euro banknotes in circulation is allocated to the ECB on a monthly basis. The counterpart of this adjustment is disclosed under 'Other claims within the Eurosystem'. The remaining 92% of the value of the euro banknotes in circulation are allocated to the NCBs on a monthly basis too, whereby each NCB shows in its balance sheet a share of the euro banknotes issued corresponding to its paid-up share in the ECB's capital. The difference between the value of the euro banknotes allocated to the NCB according to the aforementioned accounting regime, and the value of euro banknotes put into circulation, is also disclosed under 'Other claims/debts within the Eurosystem'.

Charts

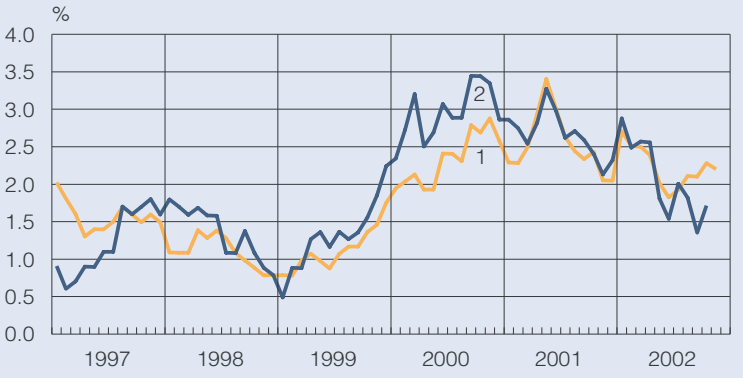
1. Finland: key economic indicators



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

Sources:
Statistics Finland and
Bank of Finland.

2. Price stability in the euro area and Finland

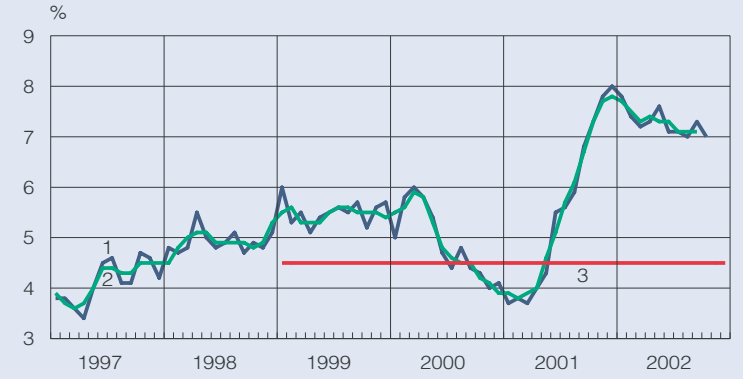


Harmonised index of consumer prices, 12-month change, %

1. Euro area
2. Finland

Sources:
Eurostat and Statistics Finland.

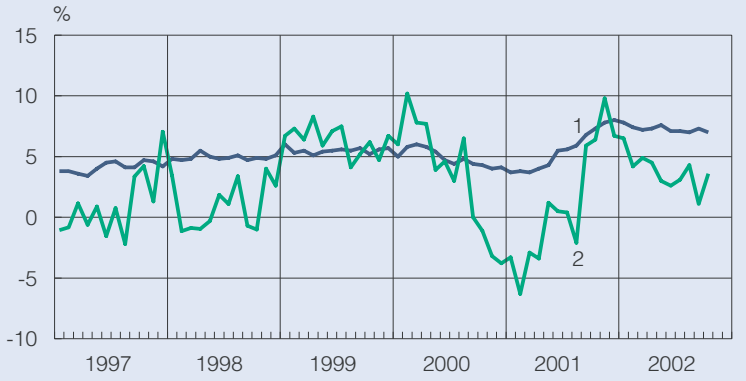
3. Monetary aggregates for the euro area



1. M3, 12-month change, %
2. M3, 3-month mov age of 12-month change, %
3. Reference value for M3 growth

Source:
European Central Bank.

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

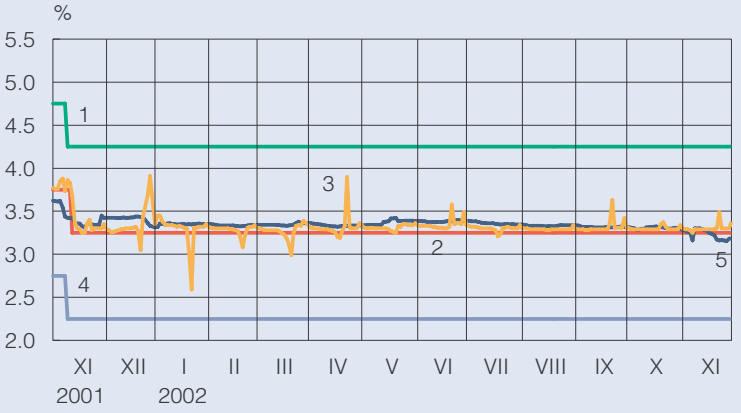


12-month change, %

1. M3 for the euro area
2. Finnish Contribution to euro area M3 (excl. currency in circulation with the public)

Sources:
European Central Bank and Bank of Finland.

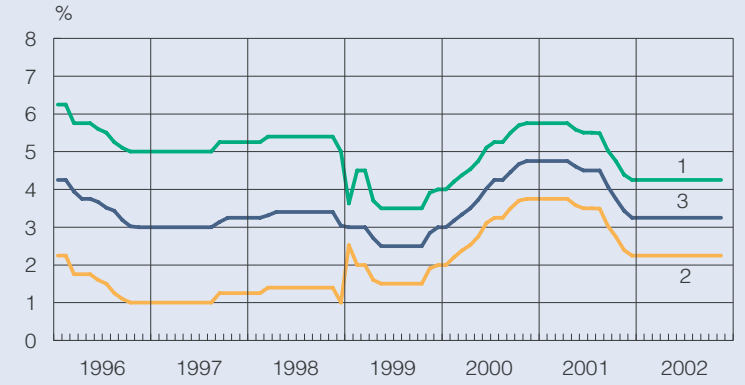
5. Eurosystem interest rates and money market rates



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

Sources:
European Central Bank and Reuters.

6. Eurosystem (Bank of Finland) interest rates

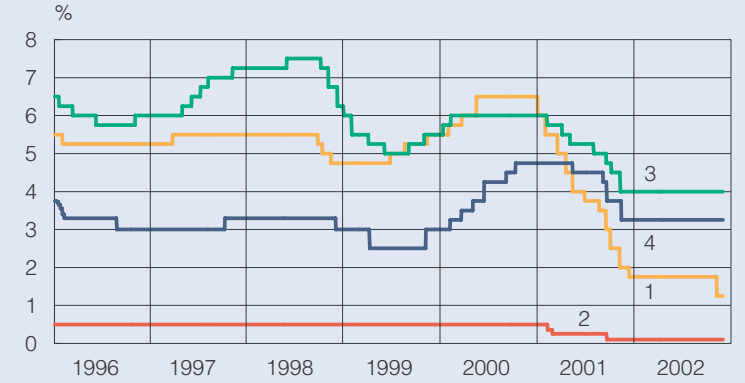


Bank of Finland interest rates until end-1998

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

Source:
European Central Bank.

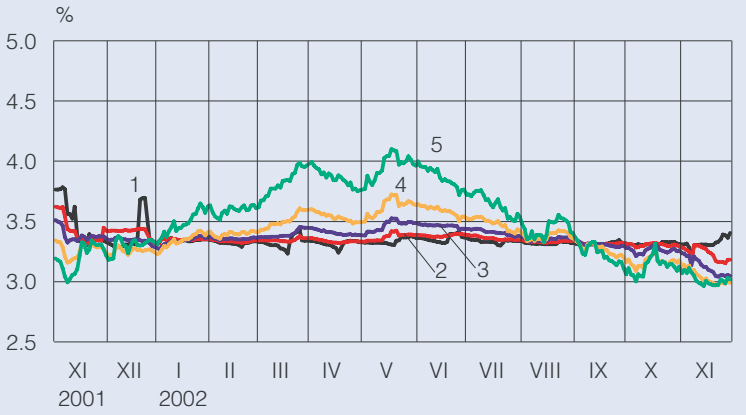
7. Official interest rates



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

Source: Bloomberg.

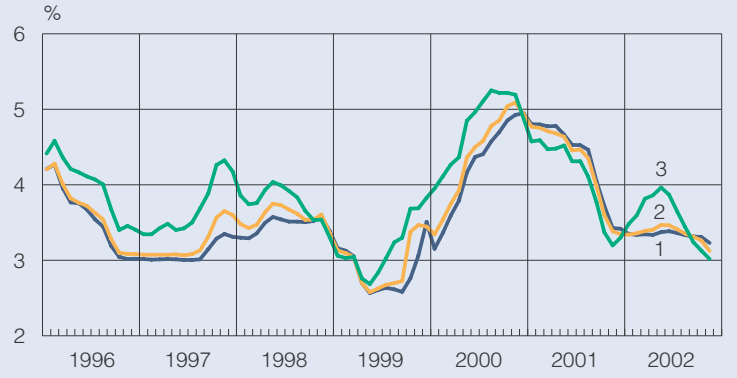
8. Euribor rates, daily values



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

Source: Reuters.

9. Euribor rates, monthly values

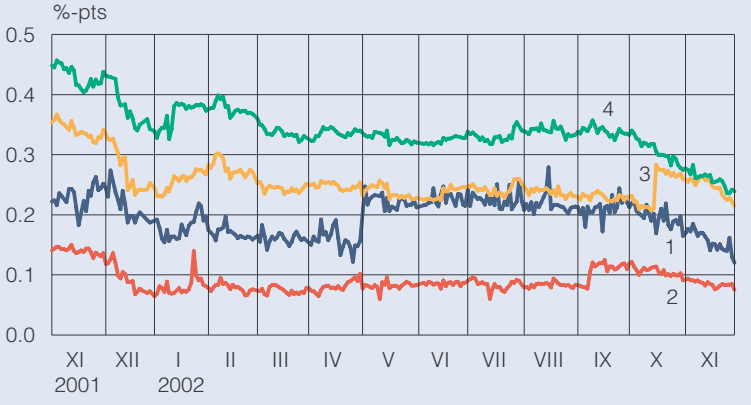


Helibor rates until end-1998

1. 1-month
2. 3-month
3. 12-month

Source: Reuters.

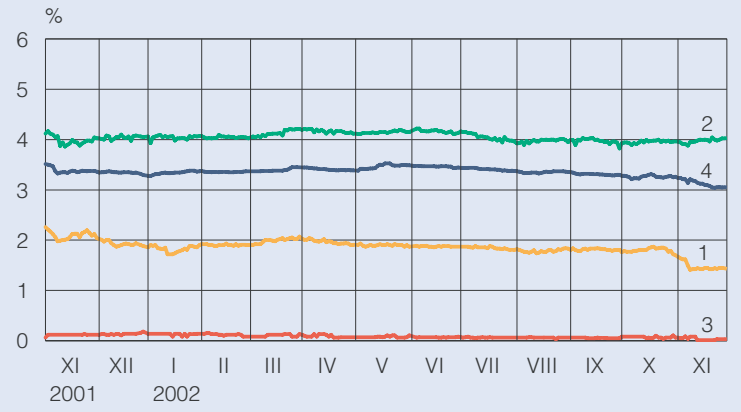
10. Differentials between ten-year yields for Germany and selected euro area countries



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

Source: Reuters.

11. International three-month interest rates, daily values

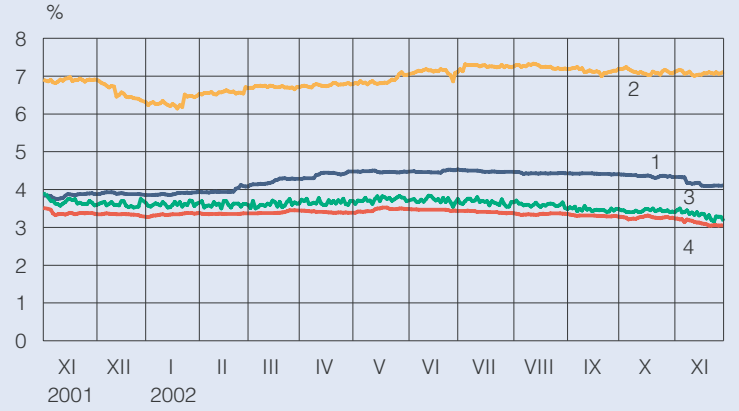


Interbank rates

1. United States
2. United Kingdom
3. Japan
4. Euro area

Source: Reuters.

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

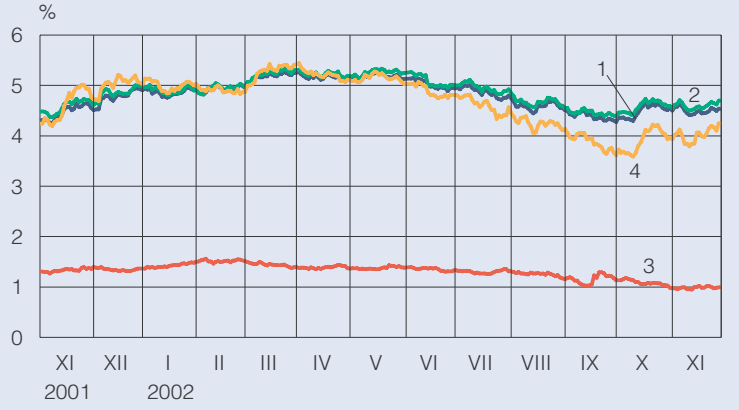


Interbank rates

1. Sweden (Stibor)
2. Norway
3. Denmark
4. Finland (Euribor)

Source: Reuters.

13. International long-term interest rates, daily values

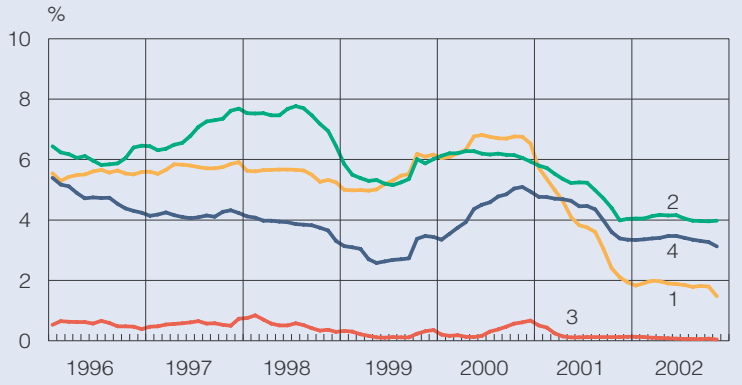


Yields on ten-year government bonds

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

Source: Reuters.

14. International three-month interest rates, monthly values

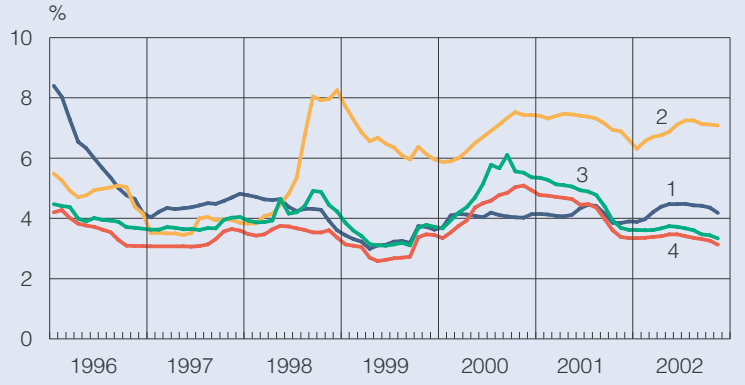


Interbank rates

1. United States
2. United Kingdom
3. Japan
4. Euro area

Source: Reuters.

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

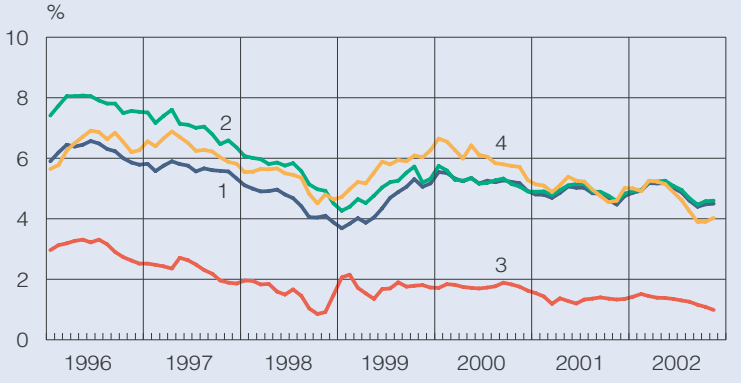


Interbank rates

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

Source: Reuters.

16. International long-term interest rates, monthly values

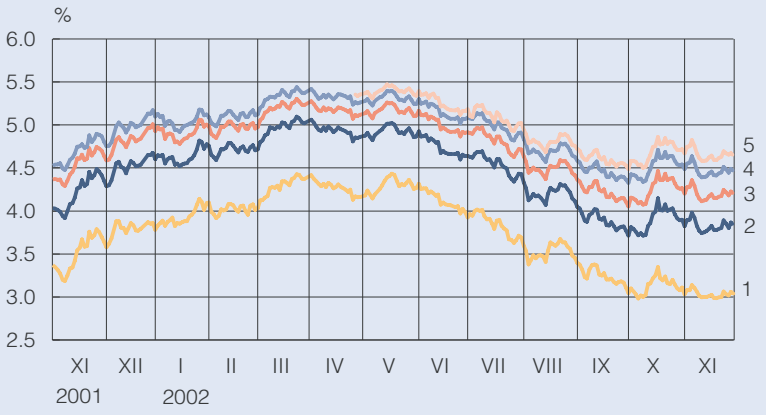


Yields on ten-year government bonds

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

Source: Reuters.

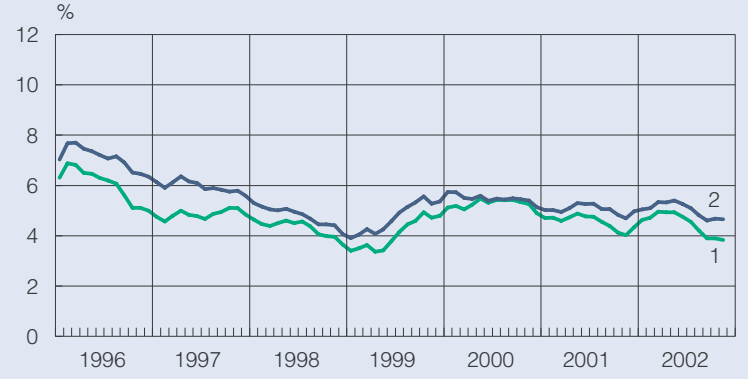
17. Yields on Finnish benchmark government bonds



1. Bond maturing on 15 March 2004, 9.5%
2. Bond maturing on 4 July 2007, 5%
3. Bond maturing on 25 April 2009, 5%
4. Bond maturing on 23 February 2011, 5.75%
5. Bond maturing on 4 July 2013, 5.375%

Source: Reuters.

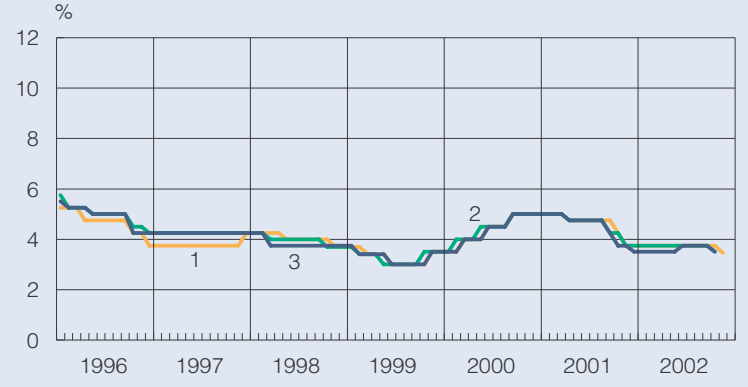
18. Yields on five and ten-year Finnish government bonds



1. 5 years
2. 10 years

Source: Reuters.

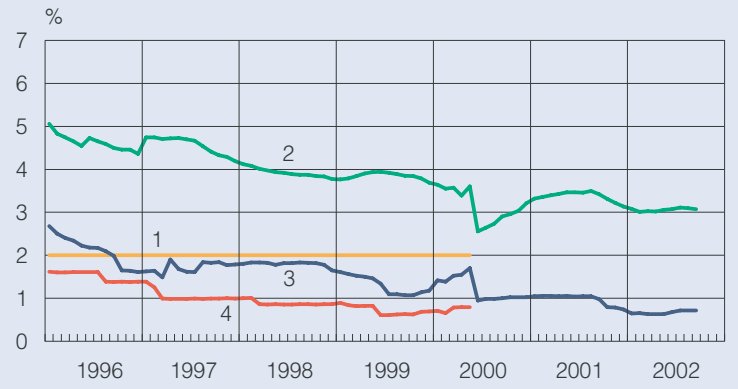
19. Bank reference rates in Finland



1. Nordea prime
2. Sampo prime
3. OKOBANK group prime

Source: Banks.

20. Bank deposit rates in Finland

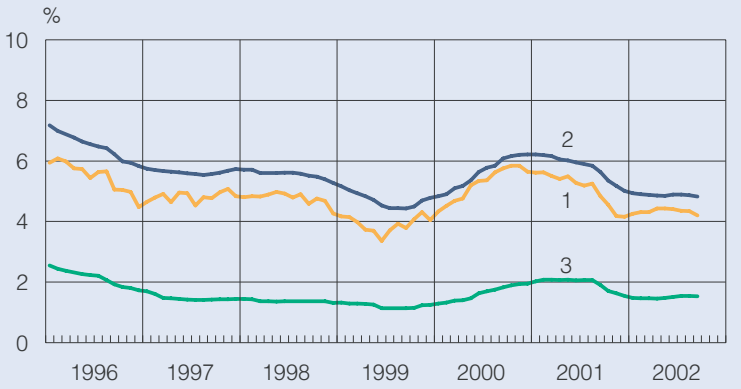


The tax treatment of deposits changed on 1 June 2000.

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

Source: Bank of Finland.

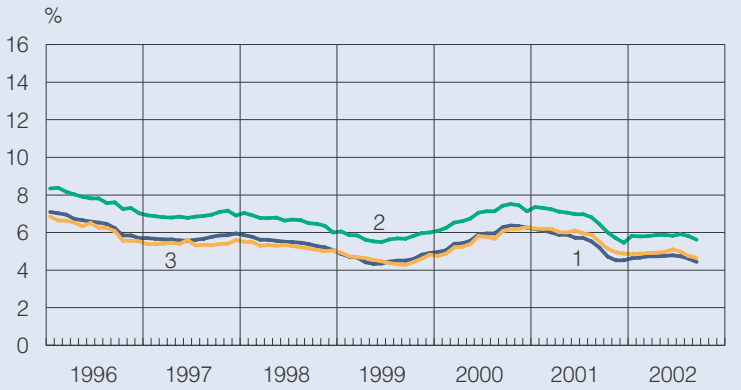
21. Bank lending and deposit rates in Finland



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

Source: Bank of Finland.

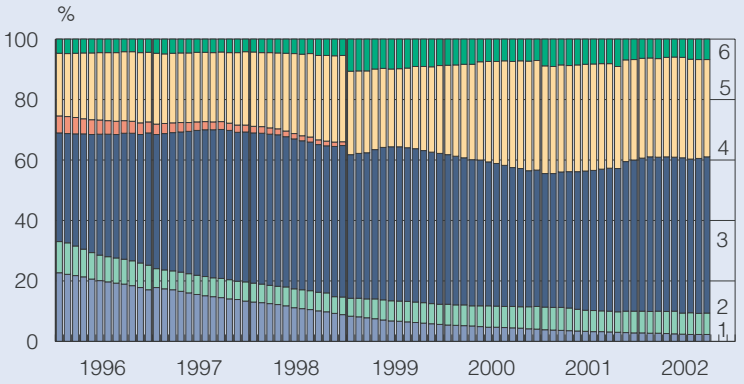
22. Interest rates charged by Finnish banks on new lending to households



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

Source: Bank of Finland.

23. Stock of bank lending in Finland

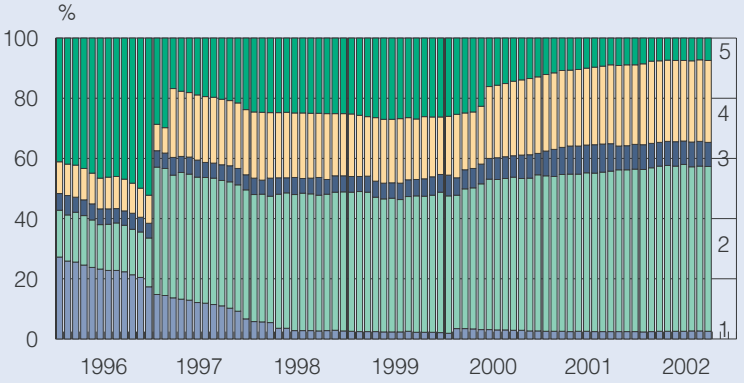


Interest rate linkages, percentages

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

Source: Bank of Finland.

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

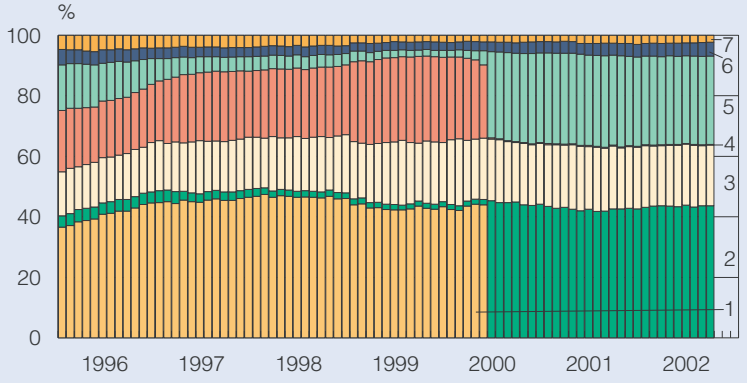


Interest rate linkages, percentages

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

Source: Bank of Finland.

25. Stock of bank deposits in Finland by tax treatment

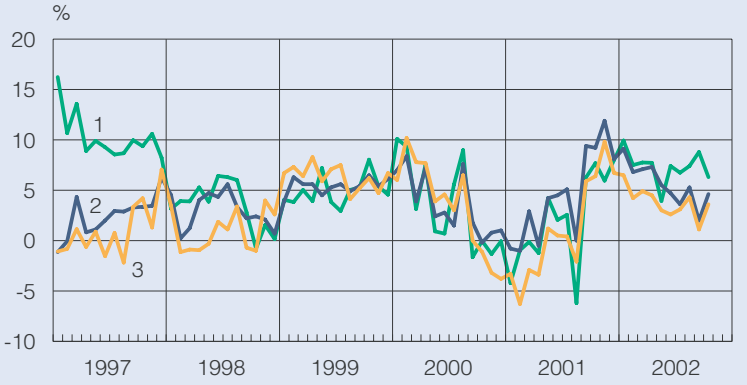


The tax treatment of deposits changed on 1 June 2000.

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

Source: Bank of Finland.

26. Liabilities of Finnish monetary financial institutions included in monetary aggregates for the euro area (excl. currency in circulation with the public)

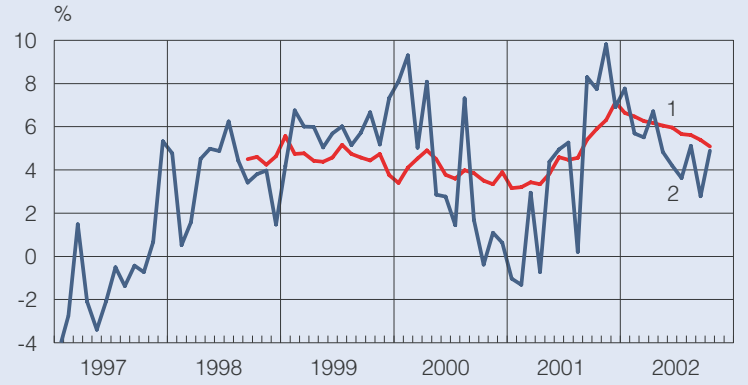


12-month change, %

1. M1
2. M2
3. M3

Source: Bank of Finland.

27. MFI deposits, euro area and Finland

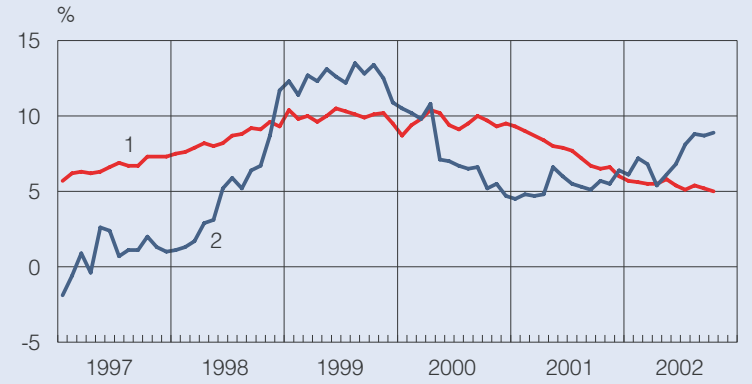


12-month change, %

1. Euro area residents' deposits at euro area MFIs
2. Finnish residents' deposits at Finnish MFIs

Sources:
European Central Bank and Bank of Finland.

28. MFI loans to private sector, euro area and Finland

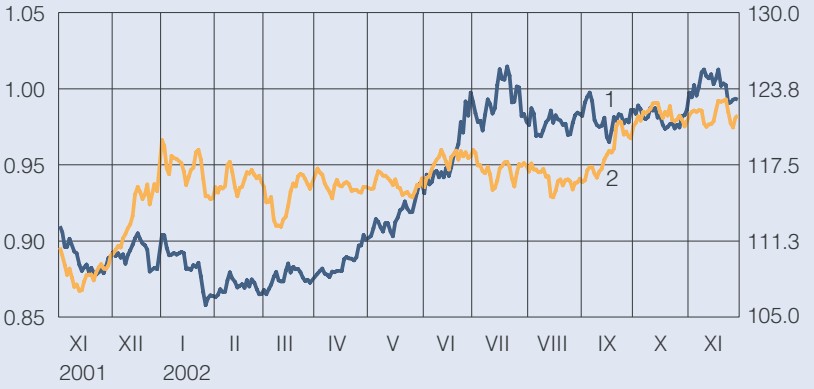


12-month change, %

1. Loans by euro area MFIs to euro area residents
2. Loans by Finnish MFIs to Finnish residents

Sources:
European Central Bank and Bank of Finland.

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

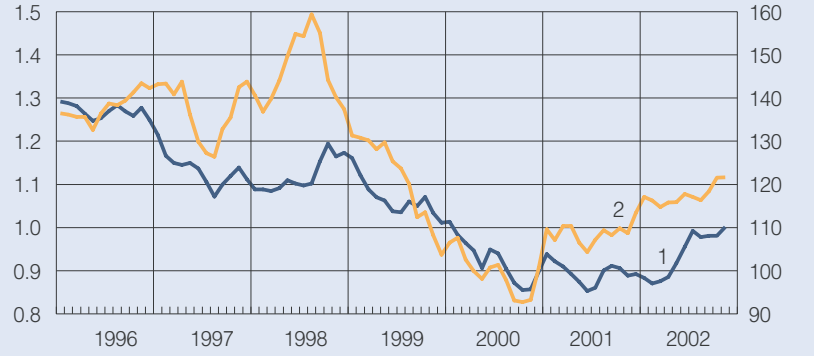


Rising curve indicates appreciation of euro

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

Sources: European Central Bank and Reuters.

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



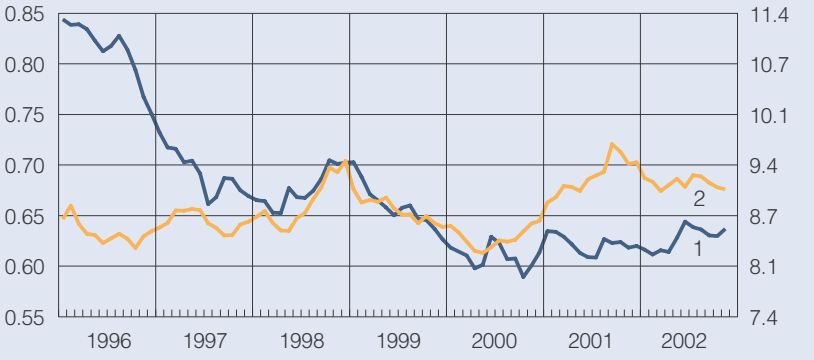
(ecu exchange rate until end-1998)

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)

Sources: European Central Bank and Reuters.

31. Euro exchange rates against the pound sterling and the 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)

Sources: European Central Bank and Reuters.

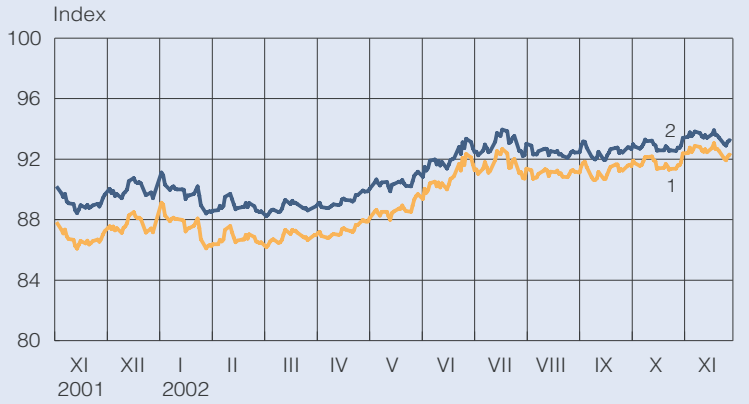
32. Euro exchange rates against the Scandinavian currencies

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

Sources: European Central Bank and Reuters.

33. Euro's external value and Finland's competitiveness indicator

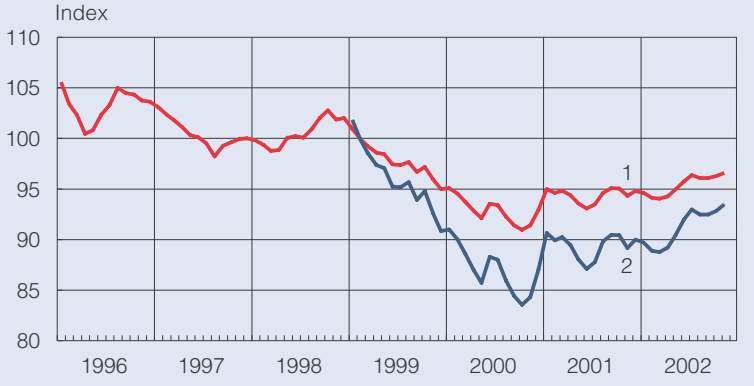


1999 Q1 = 100
An upward movement of the index represents an appreciation of the euro / a weakening in Finnish competitiveness

1. Euro's effective exchange rate
2. Finland's narrow competitiveness indicator

Sources:
European Central Bank and Bank of Finland.

34. Competitiveness indicators for Finland



1999 Q1 = 100
An upward movement of the index represents a weakening in Finnish competitiveness

1. Narrow plus euro area competitiveness indicator
2. Narrow competitiveness index

Source: Bank of Finland.

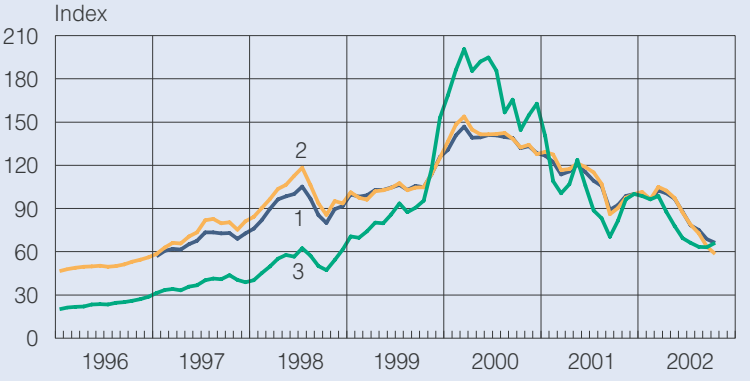
35. Selected stock price indices in the euro area, daily values

28 December 2001 = 100

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

Sources: Bloomberg and HEX Helsinki Exchanges.

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

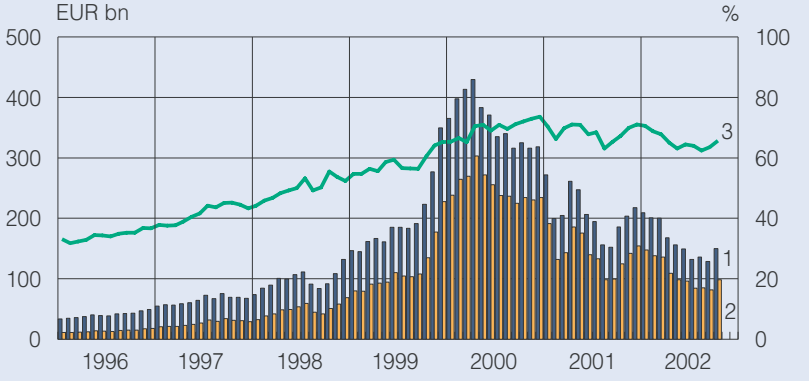


31 December 2001 = 100

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

Sources: Bloomberg and HEX Helsinki Exchanges.

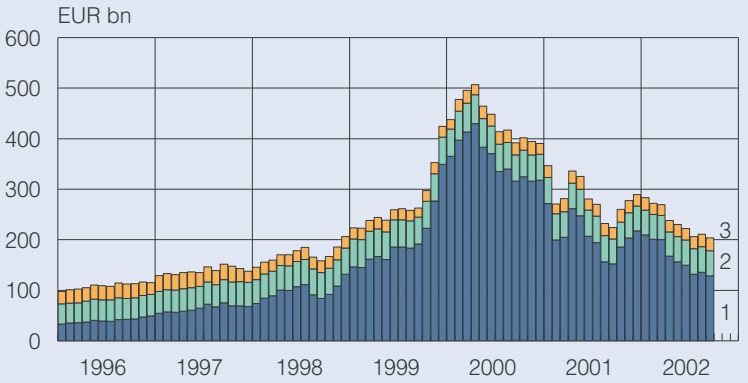
37. Listed shares in Finland: total market capitalisation and non-residents' holdings



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

Sources: HEX Helsinki Exchanges and Finnish Central Securities Depository (APK).

38. Securities issued in Finland

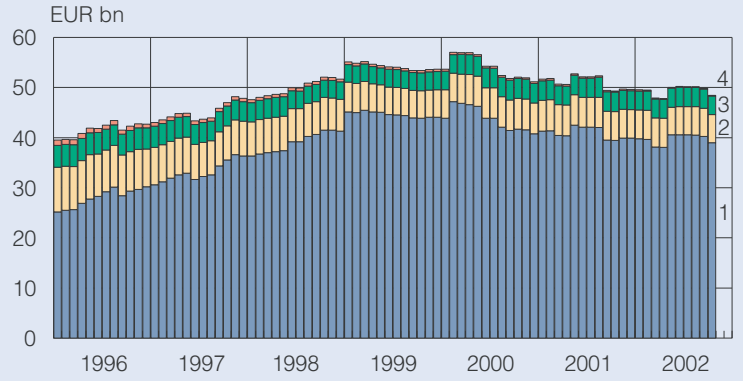


End-month stock

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

Sources:
HEX Helsinki Exchanges,
Bank of Finland,
Statistics Finland and
State Treasury.

39. Bonds issued in Finland

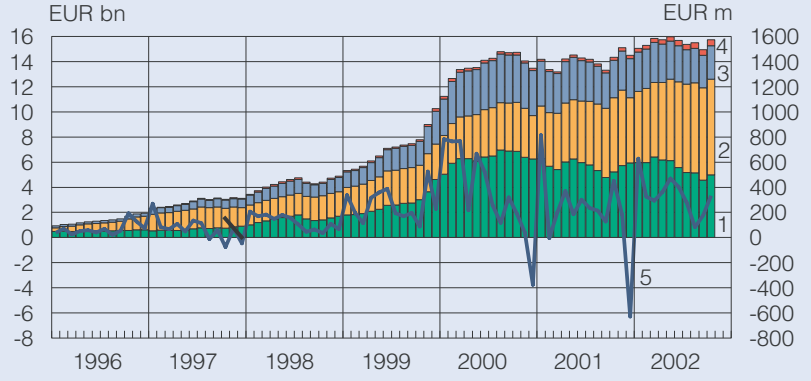


End-month stock

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

Source: Statistics Finland.

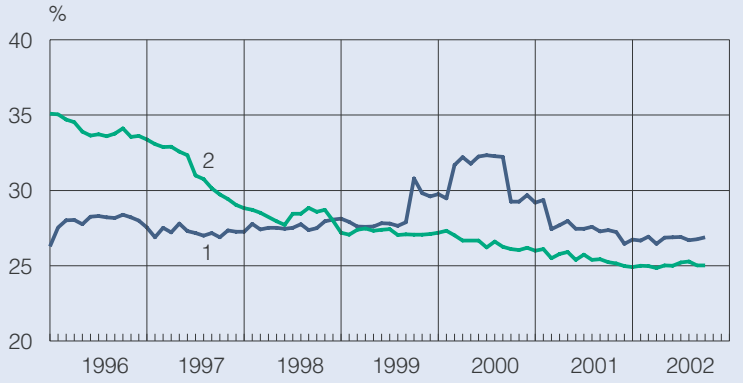
40. Mutual funds registered in Finland



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)

Source: HEX Helsinki Exchanges.

41. Central government revenue and expenditure in Finland

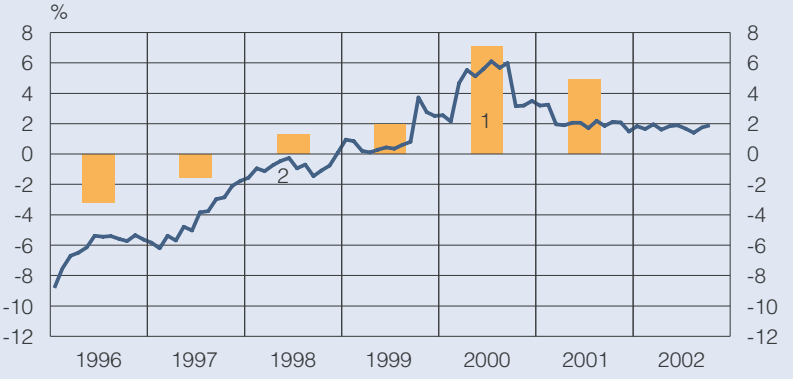


Excluding financial transactions
12-month moving totals, % of GDP

1. Revenue
2. Expenditure

Sources: State Treasury, Statistics Finland and Bank of Finland.

42. Public sector balances in Finland

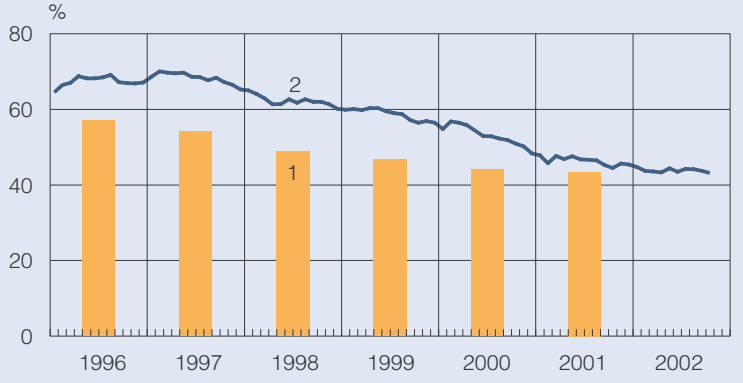


% of GDP

1. General government fiscal position
2. Central government revenue surplus, 12-month moving total

Sources: State Treasury, Statistics Finland and Bank of Finland.

43. Public debt in Finland

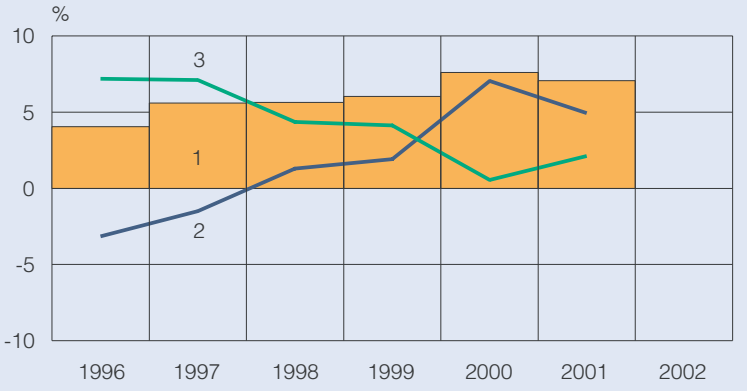


% of GDP

1. General government debt
2. Central government debt

Sources: Statistics Finland and State Treasury.

44. Net lending in Finland by sector

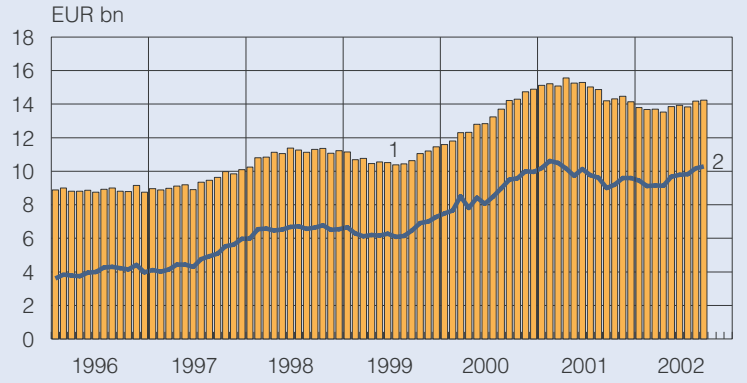


Main sectoral financial balances, % of GDP

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

Sources: Bank of Finland and Statistics Finland.

45. Finland: goods account and current account

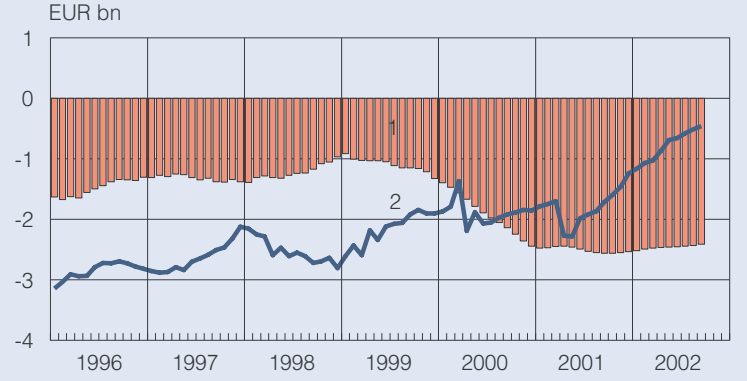


12-month moving totals

1. Goods account, fob
2. Current account

Source: Bank of Finland.

46. Finland: services account and income account

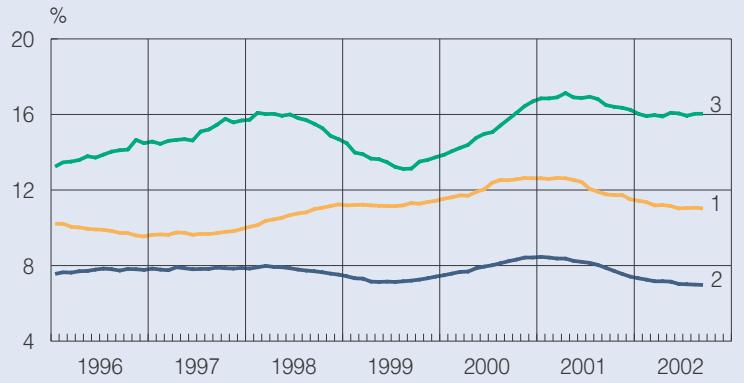


12-month moving totals

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

Source: Bank of Finland.

47. Regional distribution of Finnish exports

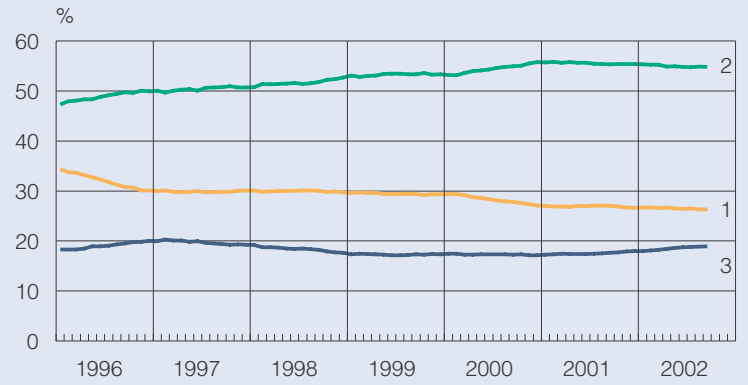


12-month moving totals,
% of GDP

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

Sources:
National Board of Customs
and Statistics Finland.

48. Finnish exports by industry

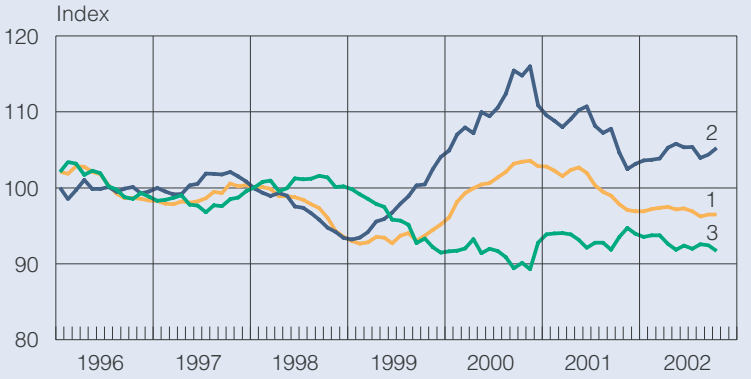


12-month moving totals,
percentage of total exports

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

Source:
National Board of Customs.

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

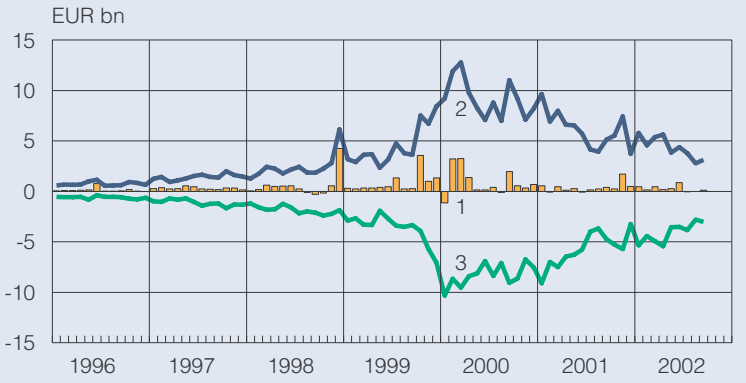


1995 = 100

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

Source: Statistics Finland.

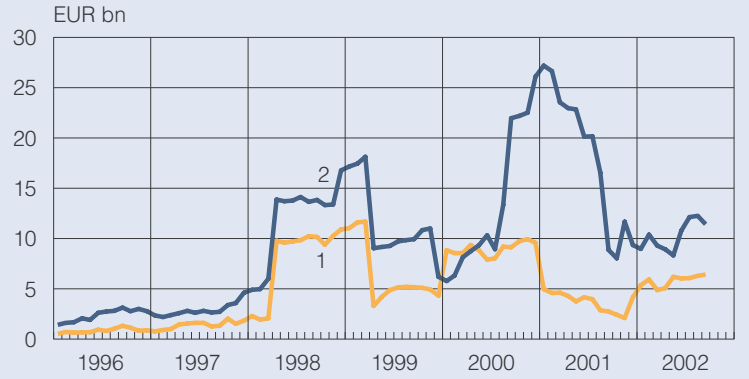
50. Non-residents' portfolio investment in Finnish shares



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

Source: Bank of Finland.

51. Finland: direct investment

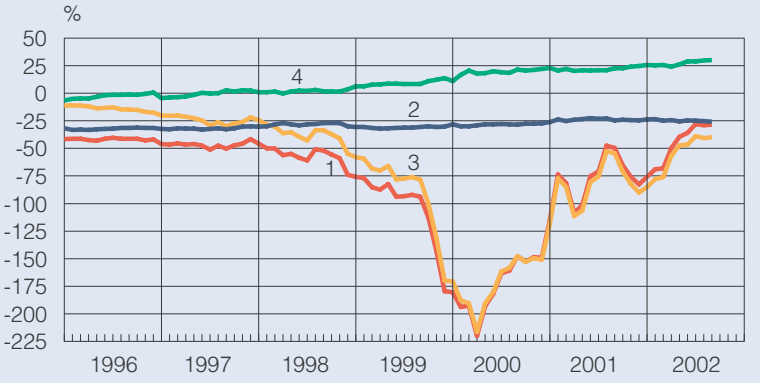


12-month moving totals

1. In Finland
2. Abroad

Source: Bank of Finland.

52. Finland's net international investment position

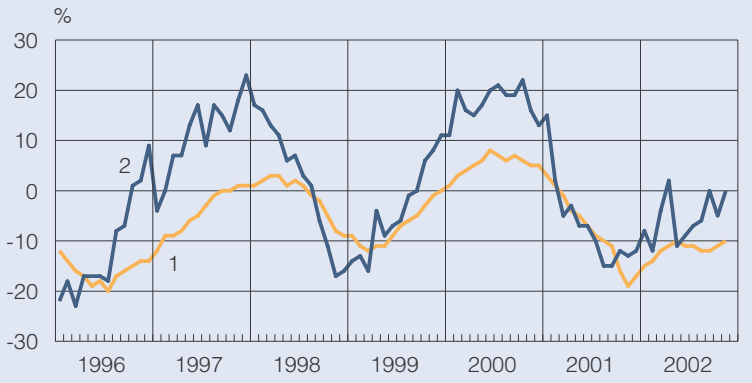


% of GDP

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

Sources: Bank of Finland and Statistics Finland.

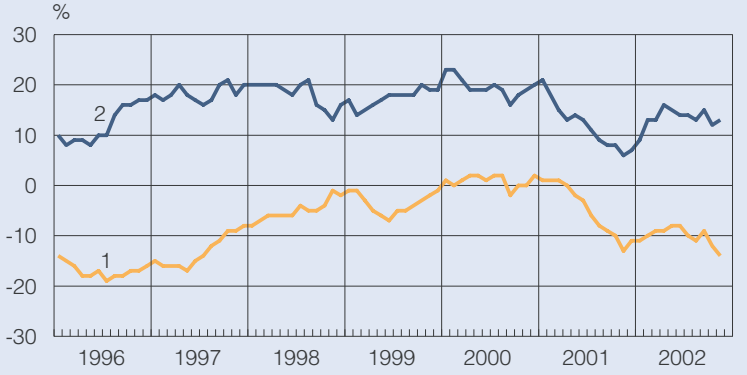
53. Industrial confidence indicator in the euro area and Finland



1. Euro area
2. Finland

Source: European Commission.

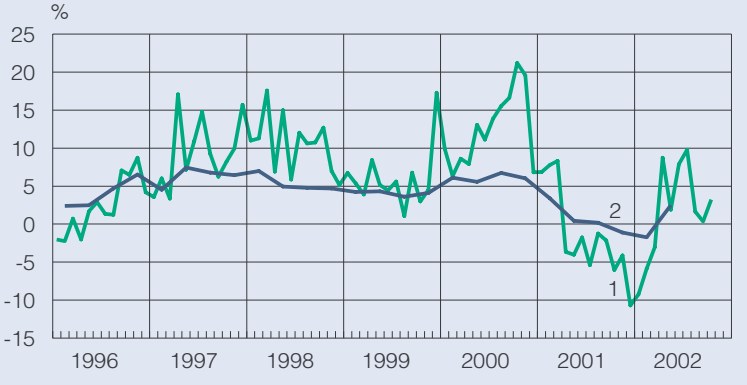
54. Consumer confidence indicator in the euro area and Finland



1. Euro area
2. Finland

Source: European Commission.

55. Finland: GDP and industrial production

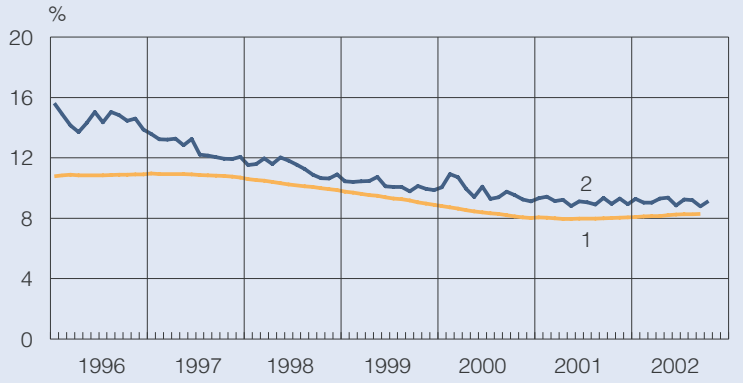


Percentage change from previous year

1. Industrial production
2. Gross domestic product

Source: Statistics Finland.

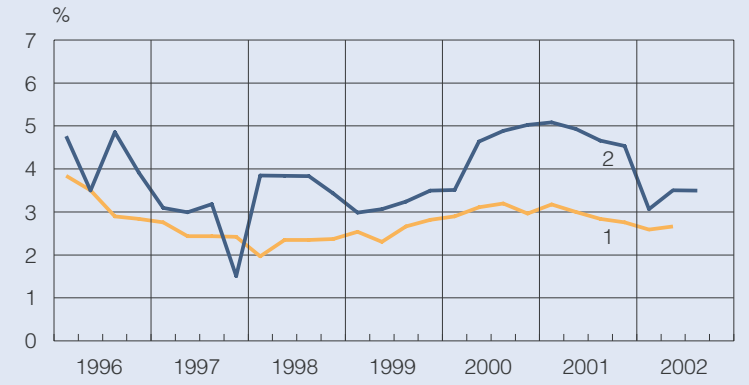
56. Unemployment rate in the euro area and Finland



1. Euro area
2. Finland

Sources: Eurostat, Statistics Finland and Bank of Finland.

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

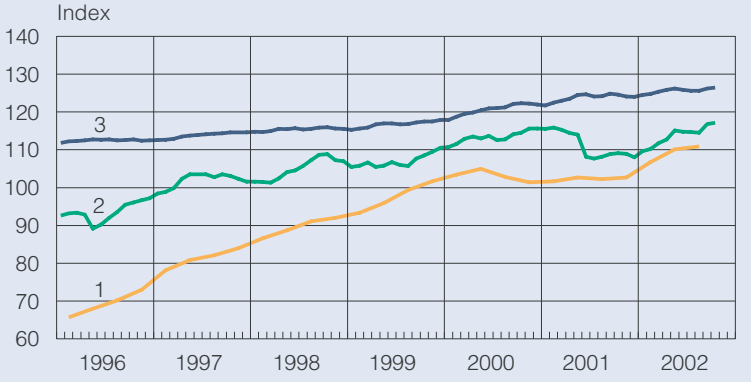


Percentage change from previous year

1. Euro area
2. Finland

Sources: Eurostat and Statistics Finland.

58. Selected asset prices in Finland



January 1990 = 100

1. Housing prices (secondary market; debt-free price per m^2)
2. Stumpage prices
3. Consumer prices

Sources:
Finnish Forest Research Institute, Statistics Finland and National Board of Customs.

Bank of Finland Bulletin, Index to Vol. 76, 2002

Articles and Items

Organisation of the Bank of Finland

10 September 2002

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

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Governor

Matti Louekoski
Deputy Governor

Sinikka Salo
Member of the Board

Pentti Hakkarainen
Member of the Board

Heikki T. Hämäläinen, Secretary to the Board

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Economics

Antti Juusela
Communications

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Mauri Lehtinen
Payments and Settlement

Armi Westin
Information Technology

Esa Ojanen
Administration

Veli-Matti Lumiala
Security

* Adviser to the Board

Branch offices: Kuopio, Oulu, Tampere and Turku.

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