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# BANK OF FINLAND

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# BULLETIN

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2000 • Vol. 74 No. 4



- Bank of Finland's macroeconomic forecast 2000– 2002
  - Financial stability in Finland
  - Strong public finances provide scope for tax cuts
  - Labour supply and income taxation
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## The Bank of Finland's macroeconomic forecast 2000–2002

The European Central Bank (ECB) has reacted to increased inflationary pressures in the euro – area by raising the Eurosystem's official interest rates by a total of 1.75 percentage points in the course of 2000. This has helped to stabilize the public's inflation expectations in a situation where it is difficult to distinguish a change in relative prices – particularly the rise in oil prices – from the general increase in prices. The Bank of Finland's forecast<sup>1</sup> for the Finnish economy is based on the assessment that inflation expectations have remained moderate. This will contribute to the maintenance of price stability and the continuation of growth at a rate above its long-term average.

Since summer 1999 the rate of inflation has been rising in Finland, mainly because of the direct and indirect effects of higher crude oil prices. The consumer price index (CPI) is now expected to rise by over half a percentage point more in 2000 than was projected in the spring. Inflation has picked up at a faster pace in Finland than in the euro area on average, due in large part to a rise in services prices in Finland. In addition, wage increases in excess of the euro area average, buoyant demand and, to some extent, lack of competition have heightened the second-round effects of higher energy prices.

Inflation is now expected to pick up by more in 2000 and 2001 than was previously projected, mainly because of developments in exchange rates and energy prices in 2000 and revisions to assumptions concerning their future movements. Inflation in 2001 is higher than forecast in the spring, but it gradually falls back to around 2% in 2002 (Table 1, Chart 1) as the growth of the economy slows slightly, the effects of the weakening of the euro disappear and upward pressures from import prices ease. This is despite the fact

that unit labour costs are projected to rise at a faster rate than the euro area average towards the end of the forecast period as a consequence of a gradual increase in wage drift and a slowdown in productivity growth.

The prospects for a continuation of stable and balanced economic growth in Finland over the next few years appear good. This is largely because of the positive outlook for the world economy, especially in the United States, where it is assumed economic expansion will continue to be driven by high productivity growth, and the euro area, where growth of activity is expected to remain robust. The Asian economies have, by and large, recovered well from the economic crises of 1998, and in Japan the negative risks attached to economic growth appear to have subsided. Similarly, in Russia and the transition economies more generally recent growth performance has been better than forecast last spring. Forecasters have generally revised up their projections for the growth of the world economy, and it is assumed that the high level of oil prices will not impede growth significantly.

The Finnish economy will continue growing at a faster pace than the euro area average. GDP growth is forecast to slow gradually from 5% in 2000 to 4% in 2002. As a consequence of a prolonged period of economic growth, adequacy of production capacity and availability of labour will be problems in some sectors and regions of the country. But the risk of general overheating in the Finnish economy has receded since the spring. Underpinned by a record trade surplus, the financial balance of the whole economy, ie the current account, will show a strong surplus. The surplus in general government finances will remain large and central government finances will move into surplus. The central government financial balance will improve substantially this year, reflecting both a marked increase in tax receipts from the household and corporate sectors and moderate spending

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<sup>1</sup> The forecast is based on data available up to 31 October 2000.

**Table 1. Summary of the forecast****Demand and supply 1998–2002 (1995 prices)**

	1998	1999	2000	2001	2002
<b>Percentage change on a year earlier</b>					
Gross domestic product	5.5	4.0	5.0	4.9	4.1
Imports	8.3	3.2	8.2	6.2	6.2
Exports	8.9	6.3	9.7	9.5	7.0
Private consumption	4.9	3.6	3.9	3.4	3.6
Public consumption	1.7	2.0	0.6	1.4	1.4
Private fixed investment	11.7	6.2	4.9	5.3	4.5
Public investment	-1.4	-3.8	-3.4	0.2	2.4
Change in inventories and statistical discrepancy, % of total demand in the previous year	-0.1	-0.5	0.6	-0.1	0.0
Total demand	6.1	3.8	5.8	5.2	4.6
Total domestic demand	4.9	2.7	3.9	3.0	3.3

**Key economic indicators**

	1998	1999	2000	2001	2002
<b>Percentage change</b>					
Harmonized Index of Consumer Prices	1.4	1.3	3.1	3.1	2.1
Consumer price index	1.4	1.2	3.4	2.9	2.0
Level of earnings	3.5	2.7	4.0	4.1	4.3
Labour productivity	3.6	1.8	3.5	2.9	2.2
Unit labour costs	1.7	0.3	0.8	1.1	2.3
Number of employed	2.4	3.3	1.9	2.2	1.9
Employment rate, 15–64 year-olds, %	64.1	66.0	67.1	68.5	69.8
Unemployment rate, %	11.4	10.2	9.7	8.8	7.9
Export prices of goods and services	-1.1	-4.8	9.4	4.6	1.9
Terms of trade	2.9	-5.0	-0.3	-0.5	1.7
<b>% of GDP (National Accounts)</b>					
Ratio of taxes to GDP	45.9	45.7	45.8	43.8	42.9
General government net lending	1.3	1.9	4.5	4.2	4.5
General government debt (Maastricht definition)	48.7	46.6	41.7	38.5	35.5
Trade account	9.7	9.0	10.0	11.5	12.4
Current account	5.6	5.4	6.5	8.2	9.3
Average interest rate on new loans granted by deposit banks, %	4.8	3.9	5.1	5.7	5.7

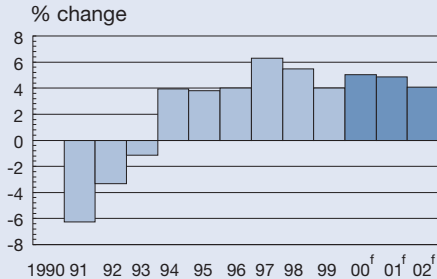
growth. The planned cuts in income tax will help to sustain the continued fairly strong growth of labour supply. This is important from the point of view of the continuation of balanced economic growth, since

as the relative share of structural unemployment will grow during the forecast period it will become increasingly difficult for sectors suffering from labour shortages to find labour that is skilled or suitable for

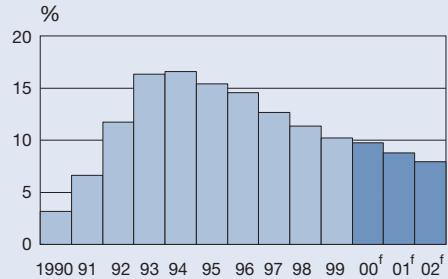
**Chart 1.**

**Key economic indicators**

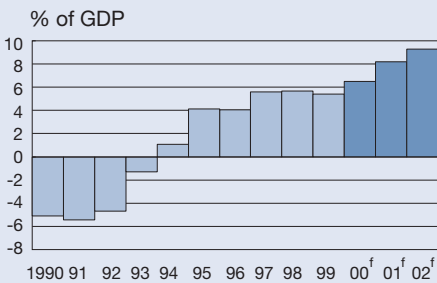
**Gross domestic product**



**Unemployment rate**

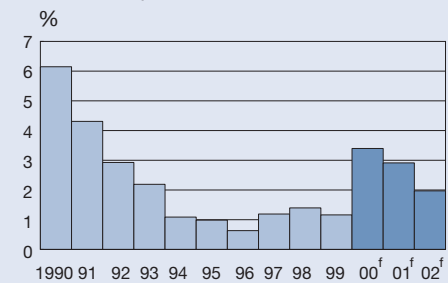


**Current account**

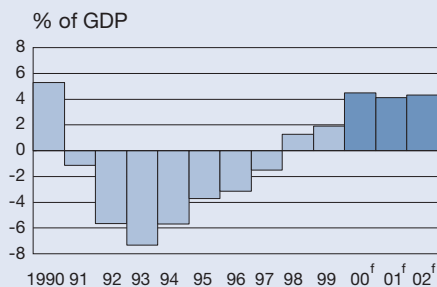


**Inflation**

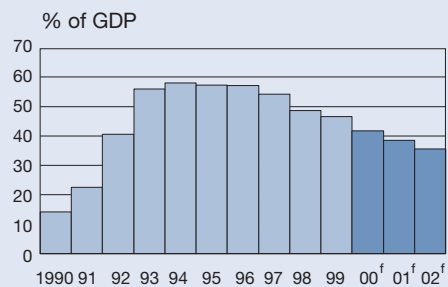
**Consumer price index**



**General government fiscal position (Maastricht definition)**



**General government debt (Maastricht definition)**



f = forecast.

Sources: Bank of Finland and Statistics Finland.

retraining from among the ranks of the unemployed. Factors that could, if they materialize, result in weaker-than-forecast growth or keep inflation above

the euro area average are discussed at the end of the article in connection with the risk assessment of the forecast.

## Box 1. Assumptions underlying the forecast

### International trade and import prices

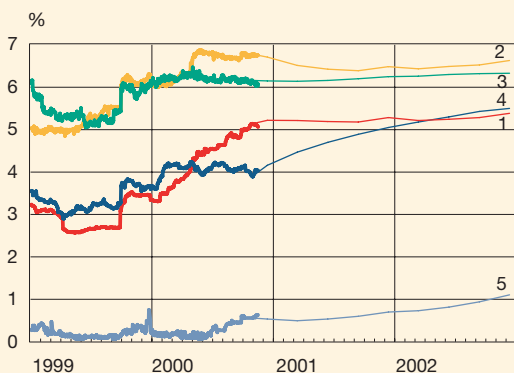
The forecast is built on the assumption of rapid growth of world trade. Import growth in countries that are key export markets for Finland is expected to be as high as about 11% in the current year and then to slow steadily to 8% in 2002 (Table 2), which is still slightly faster than average import growth in these countries in the 1990s. The possibility of continuing high oil prices is, however, a downside risk to this outlook for growth of world trade. The price of crude oil is expected to fall from over USD 30 per barrel to USD 24 per barrel by the end of 2002. Prices of goods imports are assumed to increase by nearly 10% on average in 2000, with almost half of the rise being due to the depreciation of the euro.

Because of the sharp rise in import prices in the current year, the average increase in 2001 will still be 5%. The rise in import prices is nevertheless assumed to slow noticeably during 2001, and hardly any increase at all is forecast for 2002.

### Interest rates and exchange rates

The forecast for interest rates and exchange rates is based on expectations in money and exchange rate markets on 31 October 2000. The forecast paths for three-month money market rates and long-term interest rates are consistent with market interest rate and exchange rate expectations on that date in the countries that are key export markets for Finland. Thus these are purely technical assumptions and no

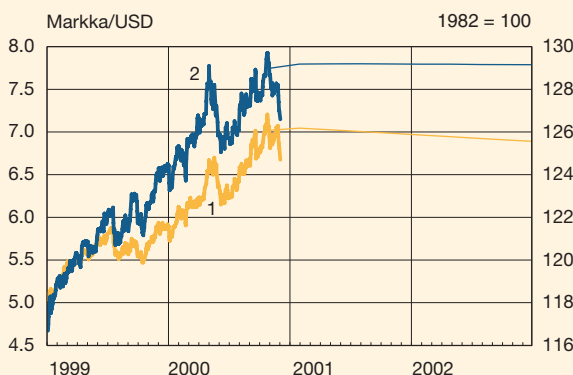
**Chart 2. Three-month interest rates and interest rate expectations in selected countries**



1. Euro area: 3-month Euribor (actual/360)
2. USA: 3-month eurodollar rate
3. UK: 3-month eurosterling rate
4. Sweden: 3-month Stibor
5. Japan: 3-month euroyen rate

Sources: Reuters and Bank of Finland.

**Chart 3. Exchange rate expectations**



1. Value of one US dollar in markkaa (left-hand scale)
2. Trade-weighted currency index 1982 = 100 (right-hand scale)

Source: Bank of Finland.

**Table 2. Assumptions of the forecast**

	1998	1999	2000	2001	2002
Import volume growth in Finnish export markets, percentage change	5.9	4.2	10.8	9.0	8.0
Finnish import prices, percentage change	-3.0	-0.5	9.7	5.0	0.4
3-month Helibor/Euribor, %	3.6	3.0	4.5	5.2	5.3
Yield on taxable 4-5 year government bonds, %	4.3	4.1	5.3	5.3	5.3
Finland's trade-weighted currency index	119	121	127	129	129
Markka/US dollar exchange rate	5.34	5.58	6.50	7.02	6.93

attempt is made to predict the future interest rate policy of the ECB or estimate the equilibrium exchange rate. Expectations are calculated on the basis of publicly quoted interest rate futures.<sup>2</sup> The term structure of interest rates is exceptionally flat, im-

<sup>2</sup> An interest rate future is a standardized money market instrument that enables the interest rate on a debt obligation at a specified future date to be fixed at the present point in time. For long-term interest rates the assumption is based on the estimated yield curve as at 31 October 2000 (see Seppälä, J, and Viertiö, P (1996), 'The term structure of interest rates: estimation and interpretation', *Bank of Finland Discussion Papers*, 19/96).

plying that the markets expect interest rates to remain broadly unchanged. For the same reason the expected future paths of exchange rates<sup>3</sup> are also fairly flat: the trade-weighted currency index is expected to remain at roughly its present level and the US dollar to weaken only slightly (Charts 2 and 3).

<sup>3</sup> The expected future paths of exchange rates are calculated on the basis of uncovered interest rate parity (which rules out the possibility of arbitrage) using the exchange rates quoted on the day in question and the expected future paths of interest rates.

## Continued rapid growth of Finnish exports

The depreciation of the euro has helped to boost Finnish exports. Exceptionally good price competitiveness and strong real competitiveness, as seen, for example, in innovations in the electronic equipment industry, will, together with growth of export markets, be the main forces sustaining the rapid expansion of exports over the forecast horizon. Export growth is likely to slow somewhat towards the end of the forecast period, as the growth of export markets starts to decelerate. Growth in exports of goods and services is projected to reach nearly 10% in 2000 and 2001 and then to slow to 7.5% in 2002.

Reflecting good productivity performance, developments in the domestic component of industrial costs have been relatively moderate. During the forecast period exports will no longer benefit from a weakening euro. Moreover, domestic costs will rise to some extent because of a pick-up in the rate of increase in average wages and lower productivity growth towards the end of the forecast period. Meas-

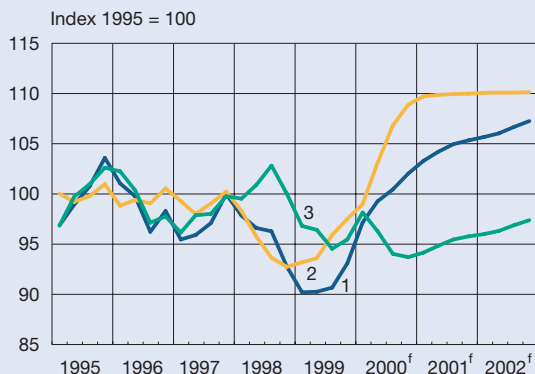
ured in terms of relative unit labour costs, Finnish competitiveness will weaken slightly in 2002 in comparison with other EU countries.

Much uncertainty has attached to forecasts of export prices in recent years, partly because export prices of electronic equipment have been falling. The fall in prices seems to have come to an end in the current year. Accordingly, the forecast is based on the view that prices of electronic equipment will not fall as fast during the forecast period as they have in the near past.

The rise in import prices of goods and services is expected to slow in early 2001 to an annual rate of less than 1%. Underlying this development is the expectation of a fall in oil prices and a fairly slow increase in other import prices. Similarly, the exchange rate is assumed to settle more or less at its end-October level, so that exchange rate movements will no longer have a direct impact on inflation. Thus, after weakening in recent years, the terms of trade are expected to improve a little during the forecast period (Chart 4).

Imports are also forecast to grow at a rapid pace, by more than 8% in the current year and over 6% in

**Chart 4. Foreign trade prices and terms of trade**



1. Prices of exports of goods
2. Prices of imports of goods
3. Terms of trade

f = forecast.

Sources: Bank of Finland and Statistics Finland.

each of the following two years. Strong import demand will be based on continued robust growth of private consumption and investment and of import inputs for export production.

### Strong growth of household income

Private consumption will be underpinned during the forecast period by favourable income developments in the household sector, due mainly to rapid growth of average wages and rising employment. Given the assumption of substantial income tax cuts in 2001 and again in 2002 and the projected gradual easing of inflation, real household income will increase at a fairly rapid pace in 2001 and 2002. This will make possible the continuation of robust consumer demand and a rise in the saving rate.

The forecast softening of demand in the housing market means that the indebtedness of the household sector (ratio of borrowing from banks to income or wealth) will not rise over the next few years. House prices, which in the spring still seemed to be rising at an alarmingly fast pace, now seem to be moderating. The wealth effect on consumption is likely to remain fairly constant over the forecast period.

Inflation has slowed the rise in real household income in the current year. Thus, despite an increase of about 3% in negotiated wages and employment growth of almost 2%, households' real disposable income is estimated to grow by only somewhat more than 2% in 2000. In each of the following two years real household income is projected to increase by as much as over 4%.

Another factor contributing to the rise in household income and employment growth over the past two years has been an increase in stock options granted by companies to their employees. Excluding job-related stock options, the total wage bill grew by 4.6% in 1999.<sup>4</sup> The rate of increase in the wage bill is expected to accelerate to nearly 6% this year and to nearly 7% in each of the following two years. Households' real disposable income will grow at about the same rate on average as the wage bill during the forecast period. The rate of increase in capital income is forecast to slow while government current transfers to the household sector are assumed to grow only moderately. On the other hand, there will be significant reductions in household income taxes during the forecast period. All in all, the outlook for household income is favourable, and so consumer demand can be expected to remain robust.

Over the past two years the growth of consumption has outpaced the increase in real disposable income. This has been possible because of a fall in the household saving rate, which, in turn, has been based on households' strong confidence regarding future income developments, as also evidenced in a marked increase in the housing-debt-to-income ratio. Decreased uncertainty about future income developments as a result of, among other things, lower unemployment has also reduced the need for precautionary saving. The likelihood of rising real interest

<sup>4</sup> Realized job-related stock options increased the wage bill by about FIM 5 billion in Statistics Finland's preliminary figures for 1999. Under current statistical practice, realized stock options are not included in the wage bill for the household sector.



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rates in the future will raise the household saving rate. Consumer spending in the current year will again grow by nearly 4%, and although the rise in the saving rate will slow consumption growth a little over the next two years, consumption is nevertheless forecast to increase by about 3.5% in each of the following two years.

The market value of household financial wealth has declined during the past six months along with the fall in equity prices. After peaking at some FIM 200 billion in the first quarter of 2000, the value of household share holdings has fallen to about FIM 150 billion. At the end of September the total value of financial assets held by households stood at some FIM 530 billion. The decrease in financial wealth in recent months, together with the downturn in house prices in the latter part of the year, is likely to have a mild negative impact on private consumption in 2000. In 2001 and 2002 the wealth effect will provide a slight boost to private consumption, as house prices start rising at a moderate pace again and rising incomes enable households to increase their financial saving.

## Positive outlook for investment

In recent years there has been a shift in the functional distribution of income away from labour income towards capital income. According to the forecast, this trend will be broken in 2001. Corporate profitability will remain good on average in terms of broad macro measures such as operating surplus. If price margins are measured in terms of producer prices and average unit labour costs, profit margins will be squeezed during the forecast period.

In any case, investment activity in the business sector is expanding at a steady rapid pace, driven by favourable financial conditions and expectations of strong demand. Non-residential fixed investment is forecast to grow rapidly in 2000, despite the fact that industrial investment in the early part of the year seems to have been less than planned. Investment activity will be underpinned during the forecast period by favourable rate-of-return expectations and the good profitability and financial position of companies. Although nominal interest rates have risen during 2000, real interest rates are still quite low and this is helping to support investment activity. But the investment rate will not rise to any significant extent, and the corpo-

rate sector's financial surplus is expected to increase during the forecast period. Given the uncertainty surrounding future developments in export prices, however, the forecast could turn out to be too optimistic as regards developments in corporate profits.

Growth in residential investment is forecast to slow only slightly. Although profitability in the residential construction sector will weaken a little in 2001 as a result of a temporary fall in house prices and a further increase in construction costs, it is expected to recover in 2002. Growth in residential investment is forecast to slow to below 5% on average. Internal migration to growth centres will continue to sustain residential investment activity.

## Employment set to grow further

Labour supply will continue to grow over the forecast period, partly because of the positive impact of the assumed cuts in income tax. Labour supply is forecast to increase by about 1% a year on average. The rate of growth is expected to slow towards the end of the forecast period as output growth slows and shortages of skilled labour become somewhat more widespread. In 2002 wage drift is likely to increase as conditions in the labour market tighten.

Reflecting the continuing robust growth of the economy and good economic conditions in the corporate sector, labour demand is forecast to increase by some 2% a year. Employment growth will occur mainly in the labour-intensive non-tradeables sector, but to some extent also in the export sector. Both the employment rate and the labour force participation rate will rise rapidly.

Given the forecast developments in costs, unemployment is likely to fall further, albeit at a slower pace. From the point of view of sectoral and cross-firm productivity differences, the relatively large wage increases agreed under the comprehensive pay settlement do not leave enough room for changes in relative wages. The forecast increase in wage drift in 2002 highlights the need to make allowance for sectoral differences. The rise in wages in sectors with below-average productivity will be reflected in worsening employment in those sectors.

If the electronic equipment industry is excluded, labour productivity growth in 1999 was only 0.5%, compared with 1.8% for the whole economy. In the

forecast it is assumed that productivity growth will return to a rate of 3.5% in 2000. In the subsequent years it gradually slows but nevertheless remains relatively strong. The slight slowdown in productivity growth in 2002 is due to weaker growth in industrial production. The fall in average productivity growth is also partly a consequence of job growth in less productive sectors such as services.

## Wage developments and income tax cuts

Developments in negotiated wages will be determined by the forthcoming two-year comprehensive incomes agreement. Thus negotiated wages are assumed to rise by about 3% in 2001 and by over 2% in 2002. It is further assumed that the pay increases will be accompanied by already agreed income tax cuts totalling FIM 6 billion in 2001 and additional cuts totalling some FIM 4.5 billion in 2002.

The rise in the level of earnings is now expected to remain at just over 4% a year throughout the forecast period, which is a slightly more moderate rate of increase than foreseen in the forecast prepared by the Bank in the spring. The proportion of the rise in earnings due to wage drift is about one percentage point in 2001 but increases to about 2 percentage points in 2002 as a consequence of tighter labour market conditions. The increase in average pay is slightly higher than the rise in the index of wage and salary earnings, which is the result of a shortening in working time and an increase in profit-related bonuses. The rate of increase in real earnings picks up during the forecast period and reaches the same level as average productivity growth towards the end of the period.

## Slowdown in inflation

Since summer 1999 consumer price inflation has been accelerating, primarily as a result of the rise in the price of crude oil and its second-round effects. As oil is priced in dollars, the depreciation of the euro has also contributed to the rise in domestic fuel prices. In early 2000 consumer price inflation was running at a year-on-year rate of 2.2%, but it increased to 4.1% in October, with about 1.1 percentage points of this representing the direct effect of higher oil product

prices. Measured by the Harmonized Index of Consumer Prices (HICP), inflation was 3.4% in October but 2.1% if the energy price component of the index is excluded.<sup>5</sup>

Whereas the price of crude oil was still less than USD 24 per barrel at the beginning of 2000, it had risen to USD 32 per barrel by the middle of November. On the basis of oil futures prices, it is assumed that the oil price will fall to below USD 27 per barrel by the end of 2001 and to below USD 24 per barrel by the end of 2002. This suggests that the oil price will start to exert downward pressure on the overall rise in prices from the middle of 2001 onwards.

The speed with which inflation has picked up has been somewhat surprising. For example, in September 1999 consumers expected inflation to be about 2% in twelve months' time. In spring 1999 the Bank of Finland projected average consumer price inflation of 2.8% in 2000 whereas it now expects inflation to reach 3.4% this year. In October 2000 consumers expected inflation to be 2.9% in twelve months' time. Inflation expectations would become a problem if they consistently exceed the ECB's definition of price stability. The index clause included in the comprehensive incomes agreement has been set at about 3% for 2001.

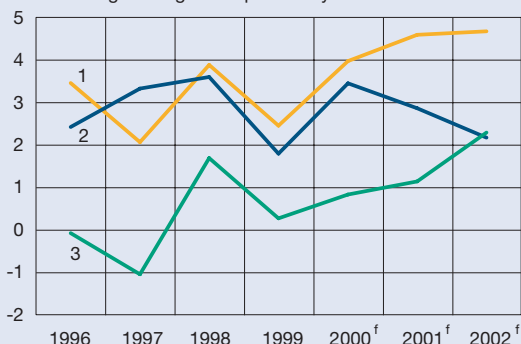
Although the pick-up in inflation is mainly due to the rise in oil product prices, this has not been the only factor at work. The effects of housing costs on inflation are one such factor. In particular, the effect of the capital cost of owner-occupied housing on inflation has grown continually.<sup>6</sup> In the future the magnitude of this effect will diminish as the annual rise in mortgage lending rates slows. Similarly, the effect

<sup>5</sup> HICP inflation differs from consumer price inflation in that it excludes certain items that may be treated in different ways in the national indices of euro area countries. These items include the capital cost of owner-occupied housing (depreciation and interest payments), some transport taxes, spending on lotteries and spending on health care under sickness insurance schemes.

<sup>6</sup> In the CPI consumption (depreciation) of the stock of owner-occupied housing is measured using annual changes in house prices whereas interest payments on housing debt are measured using mortgage lending rates. Capital costs are not included in the HICP while in the private consumption deflator the cost of owner-occupied housing is treated in the same way as rent expenses. The capital cost of housing also explains most of the difference between CPI and HICP inflation over the past four years.

**Chart 5. Average wages, labour productivity and unit labour costs**

Percentage change from previous year



1. Average wages <sup>1</sup>
2. Labour productivity
3. Unit labour costs

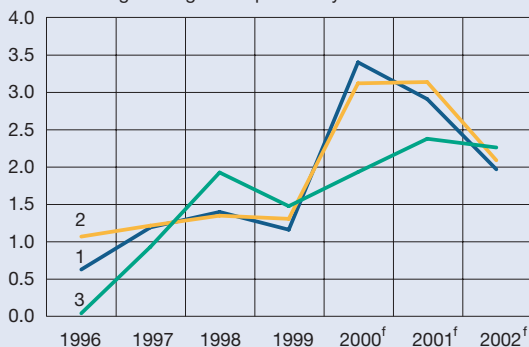
<sup>1</sup> Total wages and salaries divided by number of hours worked, employees .

f = forecast.

Sources: Bank of Finland and Statistics Finland.

**Chart 6. Inflation**

Percentage change from previous year



1. Consumer price index (CPI)
2. Harmonized Index of Consumer Prices (HICP)
3. Harmonized Index of Consumer Prices, excluding energy (HICP excl. energy)

f = forecast.

Sources: Bank of Finland and Statistics Finland.

of the rise in house prices on inflation will decrease as the rate of increase in house prices moderates.

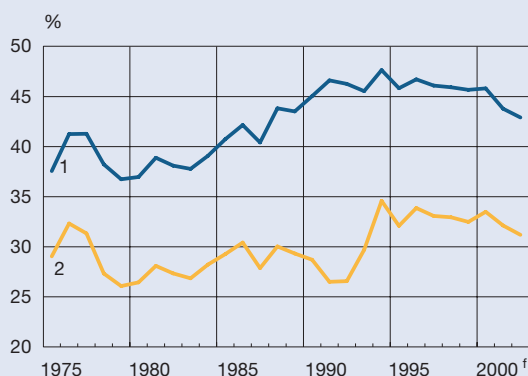
In 2000 inflation has picked up most of all in services, which also include the capital cost of owner-occupied housing. As services are labour-intensive, wage costs account for a significant proportion of services prices. For a long time now services prices in Finland have been rising faster than the euro area average, reflecting the rapid rate of increase in unit labour costs, ie wages in relation to productivity growth, in Finland's service sector. Buoyant demand and lack of competition have made it possible to pass costs through to prices. In the forecast this pattern of

development continues at least in 2001, when inflation in Finland is faster than the euro area average. In 2002 inflation in Finland is forecast to slow to around 2%, which is the rate forecast for the whole euro area by some international forecasting institutes.<sup>7</sup>

In the housing market, the rise in prices slowed appreciably in the summer. This was largely a consequence of higher interest rates, although the fall in equity prices and high level of house prices were contributory factors. House price inflation in 2000 is

<sup>7</sup>Forecasts published by the European Commission and OECD in November 2000.

**Chart 7. Tax ratios in Finland, 1975–2002**



1. Taxes and social security contributions, % of GDP
2. Households' direct taxes plus employees' social security contributions, % of taxable income

f = forecast.

Sources: Bank of Finland and Statistics Finland.

forecast to slow to about 6% since house prices will decline towards the end of the year. In the forecast it is assumed that demand for housing will be sustained by a strong rise in household income, and house prices are expected to start rising again at a modest pace already in 2001. In 2002 prices will again rise in real terms, but the rate of increase will remain moderate. Owing to continuing migration, regional disparities in housing market conditions are likely to remain large or even increase over the next few years.

Changes in indirect taxation and thus direct price effects of fiscal policy will be fairly modest during the forecast period. It is nevertheless assumed that there will be some cuts in indirect taxes in 2002, and these are expected to moderate the rise in consumer prices a little.

Growth of average unit labour costs in the whole economy will pick up slightly during the forecast period, putting upward pressure on prices (Chart 5). Although the rate of increase in earnings will not raise average labour costs to the extent that this would push inflation significantly higher, attention nevertheless needs to be addressed to sectoral differences in productivity. Because of these, there is a danger that services prices could continue to rise at a faster pace than the euro area average throughout the forecast period, with adverse implications for employment and competitiveness in the medium term.

The rate of increase in consumer prices in 2001 is forecast to slow by half a percentage point on average from this year's level to 2.9% (Chart 6). The main reason for this will be the forecast fall in energy prices as the contribution of energy prices to the average annual increase in consumer prices in

2001 will be less than in the current year. In contrast, HICP inflation will not fall from this year's level of 3.1%. It will, however, slow to 2% in 2002, when the fall in energy prices will already lower the annual average measure of inflation. The CPI is also expected to settle at 2% in 2002.

### Continuing sizeable surplus in general government finances

The ratio of the general government surplus to GDP will increase to 4.5% this year and remain close to this level throughout the forecast period. The general government surplus in 2001 will be slightly smaller than the target level set in the September 2000 update of Finland's stability programme. The primary balance (financial balance excluding interest payments) is expected to increase to nearly 8% of GDP this year. As regards its impact on economic growth, fiscal policy can be described as neutral this year and expansionary in 2001 and 2002.

Central government finances will move into a clear surplus this year, but the surplus will not grow any further in 2001 and 2002 because of planned tax cuts. Indeed, the surplus will be considerably smaller at the end of the forecast period than was foreseen in the spring forecast because at that time the tax cuts were expected to be smaller and the proceeds from privatization larger than is now assumed. Local government finances are forecast to remain in broad balance, as in previous years, while the surplus in social security funds will stay in the region of 3% of GDP.

The tax burden will decrease over the forecast period. The overall tax ratio is forecast to fall to 43% in 2002 (Chart 7). Although household income tax was lowered at the beginning of 2000, the household tax burden will not fall this year because of the tightening effect of several other elements of taxation for 2000. Corporate taxation has tightened this year because of an increase in the capital income tax rate. In 2001 the cuts in household income tax will amount to more than FIM 6 billion, and in 2002 it is assumed there will be further cuts totalling some FIM 4.5 billion. Though the improvement in the employment situation will make it possible to lower the unemployment insurance contribution rate, it is assumed that there will be no other significant cuts in indirect labour costs during the forecast period.

Income and wealth taxes paid by households will increase strongly this year. Corporate tax receipts will be swelled by exceptionally large supplementary taxes and capital gains taxes in connection with corporate restructurings. In 2001 central government income and wealth tax receipts will decline because of the planned cuts in household income tax and because the exceptional factors boosting corporate tax receipts in the current year will cease to operate. Indirect tax receipts are estimated to increase by only a little in 2000. Because of lower demand for fuels, revenue from fuel taxes will decrease, and this, together with a further cut in, for example, excise duties on alcohol, will reduce total excise duty receipts as compared with the previous year. The assumed cut in indirect taxes will reduce receipts from, in particular, excise duties on alcohol and tobacco and motor tax.

Central government grants to municipalities have increased substantially this year, and they will continue to grow faster than other expenditure items in 2001 and 2002. Current transfers to households and the Social Insurance Institution will decrease because of rising employment and the assumption that no changes will be made to social benefits. Similarly, interest expenditure will decline as the level of debt decreases. Central government consumption and investment expenditure are expected to increase at a moderate pace, so that total central government expenditure should remain within spending ceilings. In the local government sector, the rate of growth in consumption expenditure will pick up as the number of local government employees increases. Expenditure on investment will also increase. Although un-

employment-related expenditure by social security funds will decline as employment continues to grow, a rise in the pension index due to inflation will increase pension expenditure. All in all, public expenditure will increase only moderately and its share of GDP will fall by nearly six percentage points during the forecast period, one percentage point of which will be due to the decline in interest payments.

Reflecting the combined impact of budget surpluses and continued economic growth, the ratio of central government debt to GDP is forecast to fall to 40% by the end of 2002. In spring 2000 the Government specified the target set for reducing central government indebtedness: the debt-to-GDP ratio was to be brought down to below 50% by the end of 2003, without taking into account privatization proceeds. Defined in this way, the debt target will be achieved already in 2001. The general government debt-to-GDP ratio (Maastricht definition) is forecast to stand at just over 35% at the end of 2002. This is a little lower than the figure given in the stability programme, but noticeably higher than foreseen in the spring 2000 forecast.

Thanks to the favourable outlook for economic growth, there will continue to be a large surplus in general government finances, despite substantial cuts in income tax each year during the forecast period. Because of the fall in equity prices, the central government's proceeds from privatization will probably be less than originally foreseen, in which case central government indebtedness will decrease at a notably slower pace than was expected by the Bank in spring 2000. There will therefore be less scope than anticipated for using savings in interest payments to finance the tax cuts, thus calling for restraint on the spending side. Since, moreover, the level of central government revenue has become more sensitive to movements in the economic cycle as the relative share of corporate tax receipts has increased, it is crucial that central government expenditure does not exceed the spending ceilings. There will also be mounting pressures in the years ahead for reducing the tax burden, thus underlining the need to continue maintaining a structural surplus in central government finances.<sup>8</sup>

<sup>8</sup>For a more detailed discussion of fiscal policy and challenges, see the article 'Strong public finances provide scope for tax cuts' by Helvi Kinnunen in this issue of the *Bank of Finland Bulletin*.

## Box 2. Effects of movements in oil prices

In 1999 the share of crude oil in Finland's total imports was the highest in the euro area countries, 4.6% compared with 2.4% for the euro area on average. In the same year the share of energy in total Finnish goods imports was about 10%, the second highest in the euro area after Portugal. Thus Finland is potentially one of the most inflation-sensitive euro area countries as regards movements in prices of crude oil and energy imports.

About 63% of the retail price of petrol in Finland consists of excise duty and VAT. A change in the price of crude oil affects the final product price directly via VAT, which is a proportional tax, but not through excise duty, which is fixed each year in the budget. With the continued rise in petrol and light fuel oil prices, there have been demands for easing taxation. The price of diesel is a key input cost for road haulage and other transport services, as well as, for example, in agriculture and forestry. The Government has not, however, intervened in fuel taxation, mainly on the grounds that a fall in price would be partly transferred to oil producers and refiners' margins.

Forecasts of future movements in oil prices have recently tended to display a downward bias, as can readily be seen by examining the evolution of oil futures prices over the past two years or so. Since early 1999 futures prices reveal that the market has expected oil prices to fall, so that the continued rise in oil prices has come as a surprise to the market.

Macroeconomic models can be used to simulate the effects of alternative assumptions about oil prices. Although at macro level oil price increases affect mainly prices, they also have an impact on real economic activity. Since the 1970s the impact of movements in oil prices on economic growth has become more muted along with the reduced energy dependence of production, both in Finland and the world in general. In the scenario analysis carried out using the Bank of Finland's BoF macroeconomic model, the import price of crude oil is assumed to remain at the level prevailing in the fourth quarter of 2000 for the next two years, after which the oil shock gradually dissipates.<sup>9</sup>

The simulation results suggest that a prolonged oil price shock changes relative prices and raises

consumer prices (via import prices) by 0.4 percentage point in the first year and by a slightly larger amount in the second year. It does not provide a sustained impulse to inflation, however, as in the third year inflation is already a little below the baseline path. Even if the oil price were to remain permanently at the present level, it would still have only a temporary impact on inflation. The oil price shock raises import prices by 1.5% in the first year and by over 4% in the second year, but owing to a slight rise in export prices the deterioration in the terms of trade over the two-year period is about 3%.

A rise in oil prices of this magnitude reduces the rate of GDP growth by only 0.1 percentage point in the first year and by 0.2 percentage point in the second year. The rise in oil prices has a greater impact on private consumption than it does on other demand components. Consumer demand softens as a result of a decline in real disposable income and the negative wealth effects of lower income expectations and weaker house prices. As far as firms are concerned, the oil price rise represents a negative profitability shock. Firms respond by cutting capacity and labour inputs because of the poorer outlook for demand. Exports fall in response to the general slowing in the growth of world trade that follows the oil price rise.

All in all, if oil prices were to remain at the current level for a sustained period of time this would have marked effects in terms of slower growth and higher inflation. Adjustment to an oil price shock along the lines described above would also take time, as was seen in connection with the oil crises in the 1970s and 1980s. But an oil crisis would no longer be able to generate an economic recession of the same magnitude as then.

<sup>9</sup>In the calculation the oil price stays at the present level for about two years and then gradually returns to the baseline path within a period of more than two years. In the baseline forecast the oil price steadily falls to below USD 27 per barrel by the end of 2001 and to about USD 24 per barrel by the end of 2002. In the calculation it is assumed that exchange rates remain unchanged and that there is no economic policy response. It is further assumed that the price of all imported energy increases in the same proportion and that no other production inputs are used as substitutes for imported energy.

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## Exceptionally large current account surplus

The current account surplus will continue to grow at a rapid rate over the forecast period, from about 6.5% of GDP in 2000 to over 9% in 2002. After a long succession of current account surpluses, Finland's net international investment position (excluding equity items) is expected to shift from a net liability position to a net asset position at the end of 2001.

Underpinned by strong export demand and improved terms of trade, the surplus on the goods and services account is expected to reach new record levels during the forecast period. It is forecast to increase from over 9% of GDP in 2000 to nearly 12% in 2002. The income account (mainly interest and dividends) is expected to stay in deficit, as dividends paid to non-residents by Finnish companies will remain large. In the longer run, however, the deficit on this account should shrink as a result of growing earnings on Finnish direct and portfolio investment assets abroad. The transfers account will also continue to post sizeable deficits throughout the forecast period as payments related to EU membership rise in line with growth of GDP.

## Growth of lending levelling off

The interest rates and exchange rates in the forecast are based on market expectations on 31 October. On that date the three-month money market rate was 5.1% and was expected to settle at 5.3% by the end of 2002. The flatness of the term structure of interest rates is also evident in long-term rates, which are expected to remain at about 5.3% throughout the forecast period. Interest rate margins on new bank lending (lending rates minus market interest rates) will not narrow any further. Rather, they are forecast to remain broadly unchanged at the current level or even widen a little as the amount of loans to households is expected to grow faster than low-margin loans to non-financial corporations. The dominant feature of developments in the banking sector is, however, likely to be increasingly intense competition for deposits. As a result of this the margin between lending and deposit rates will narrow.

Because of the increased popularity of investing in mutual funds and directly in equities, the amount

of deposits is expected to grow more slowly than nominal GDP. The forecast is based on the assumption that mutual funds will develop increasingly liquid products that will partly replace deposits.

Lending to non-financial corporations is expected to grow very slowly during the forecast period. Investment will increasingly be financed internally and to some extent also from other sources, including borrowing abroad. The indebtedness of the corporate sector will remain more or less unchanged during the forecast period.

Given the prospect of moderation in the rate of increase in house prices and slower growth of residential construction, households' demand for loans is forecast to slow to about 7% a year over the forecast horizon. This is clearly slower than the rate of growth recorded in 1999 and in the first six months of 2000, but on the other hand it corresponds to the rate of growth of household disposable income. Consequently, the indebtedness of the household sector – in relation to disposable income – will scarcely change at all during the forecast period.

## Risks surrounding the forecast: a less benign outlook is also possible

As a result of economic developments in the current year, conditions are now more conducive to balanced economic growth than was anticipated in the spring. The rise in interest rates so far and more moderate earnings growth than was forecast in the spring will have a favourable effect on inflation, without there being any significant slowdown in the rate of economic growth. Growth of borrowing by both households and firms has slowed, in addition to which the rate of increase in house prices is slowing and equity prices have fallen. The rise in fuel prices has eaten into real household earnings this year and eroded companies' profitability. Uncertainty about future movements in oil prices and the volatility of equity prices have weakened confidence regarding future economic developments. The recent decline in confidence is probably temporary; lower oil prices and tax cuts will start to have a favourable impact on real household earnings from now on. The growth of world markets will continue to have a positive effect on exports and competitiveness will remain good.

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The rise in domestic prices could turn out to be faster than expected, especially towards the end of the forecast period. The rate of increase in prices in Finland – particularly in the service sector – has been faster than in the rest of the euro area on average. This is an indication of the speed with which producers and distributors raise prices, the lack of competition in some sectors and also the gradual tightening of labour market conditions. Inflation expectations may to some extent have risen above the definition of the price stability. In these circumstances, the reaching of a comprehensive pay settlement – even if it does not cover the entire labour market – that opens the way for a continuation of fairly moderate pay developments was a welcome piece of news. Pressures for raising wages are nevertheless likely to persist during the forecast period. Some sectors of the labour market have not yet reached agreement on the level of pay increases and wage drift is forecast to increase. Another risk relates to the possibility that the index clause agreed on will be triggered. The forecast slowdown in the rate of increase in prices to around 2% may not therefore materialize.

Inflation could also turn out to be higher if oil prices remain at a high level. It has been calculated that this would result in inflation that is nearly half a percentage point faster than in the baseline forecast. Moreover, if the euro remains weak for a long time, importers may try to pass through the effects of the euro's depreciation to domestic prices by more than is assumed in the forecast. For both reasons, the dampening effect of import prices on inflation towards the end of the forecast period may prove to be less pronounced than assumed in the forecast.

Because of the perhaps overly optimistic assumptions on which the forecast is based, economic growth could be slower than envisaged. This applies particularly to 2001, when the pace of growth is forecast to slow only a little from its peak in 2000. In the baseline forecast, the continuation of robust growth is conditioned on the positive growth outlook for the world economy, the disappearance of the growth-impeding effect of high oil prices and a recovery in confidence. The recent decline in confidence could, however, dampen domestic demand more than has been assumed. The continuation of growth depends partly on the adequate availability of labour. Although the forecast growth in earnings is moderate from the point of view of inflation, it contains elements that

are potentially harmful for employment growth. In some sectors, including the public sector, it may not necessarily be possible to increase labour at prevailing high wage levels. Growth will also be curbed by shortages of skilled labour and capacity constraints.

Just recently, the uncertainties in world markets have increased, and this is not perhaps reflected sufficiently in the forecast. Persistently high oil prices and uncertainty in stock markets have weakened the growth prospects for world markets since the summer, although they are still more favourable than was assumed in the spring forecast. The combined effect of weaker-than-forecast domestic demand, excessive wage drift and softening export demand – triggered, for example, by a 'hard landing' in the US economy or a marked strengthening of the euro – would dampen growth by substantially more than forecast.

Uncertainty also attaches to central government finances. On the revenue side, the greatest uncertainty relates to corporate tax receipts. These already account for about a third of total central government receipts from direct taxes, and they tend to fluctuate far more than other sources of revenue. If corporate profits remain reasonably good and acquisition and merger activity continues at the same pace as in recent years, the surplus in central government finances could turn out to be larger than forecast, especially in 2001. On the other hand, corporate tax receipts and options-related tax receipts could be smaller than forecast in the event of slower-than-forecast growth and weaker profits. This would have a significant impact on the central government budget surplus.

It could also prove difficult to keep central government expenditure within spending ceilings. Recent efforts by municipalities to improve service provision and heightened pressures for wage increases in the local government sector will generate pressures for increasing state grants and raising local tax rates. There has been no fall in the average local tax rate since the recession years of the early 1990s, despite the rapid increase in tax revenue.

1 December 2000

■ **Key words: inflation, monetary policy, economic situation, forecast**



Prospects are good for a continuation of stable conditions in the Finnish financial markets. The fall in share prices around the world has reduced the likelihood of a sudden crash in share prices and an ensuing financial market crisis. The Finnish banking sector is expected to post record profits in 2000 and the banks' capital position has also improved. Higher interest rates have dampened the growth of lending and the rise in housing prices also appears to have slowed. Narrow interest rate margins in bank lending to the corporate sector could, however, be a reflection of underpricing of risk. Structural change in the financial sector is continuing at an ever-increasing pace and poses major challenges for regulation and supervision.

### Uncertainty has increased in the international financial markets

Uncertainty has increased in the international financial markets in the course of the year, even though economic growth prospects have remained good. Although the likelihood that a crash in the US stock market will trigger a crisis in the international finan-

cial markets has decreased as a result of a fall in share prices, uncertainty has been maintained by the high price of oil and persistent turbulence in the stock markets, as evidenced by wider daily fluctuations in share prices (Chart 1). The countries hardest hit by the market disturbances are the emerging economies of Asia and Latin America. A rise in risk premia applied to private and public sector debt in these countries and investors' flight to safe-haven investments have made it more difficult to obtain financing.

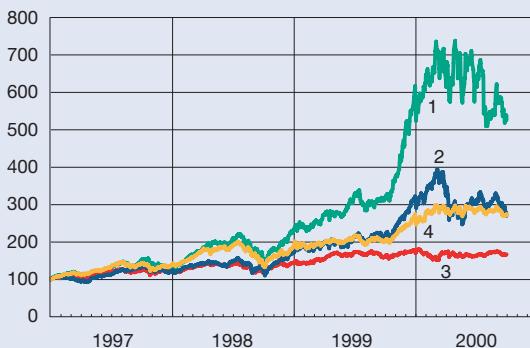
In the United States, there is concern about the high level of household indebtedness and heightened rates of corporate bankruptcy. Moreover, the vulnerability of the US banking sector has increased along with the problems encountered by the telecommunications sector because of the banks' deep involvement in the financing of this highly risky sector.

### Pronounced differences in growth of bank lending across EU countries

Lending by EU area banks continues to grow at a fairly rapid pace, though there are wide cross-coun-

**Chart 1. Stock indices**

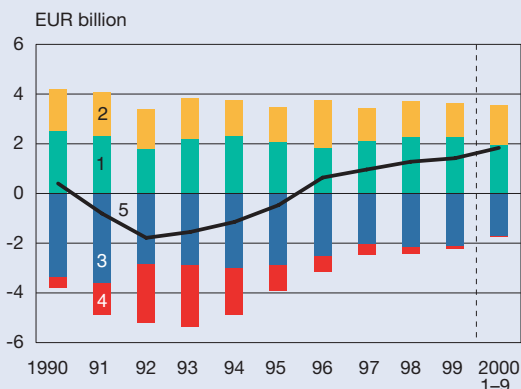
2 Jan 1997 = 100



1. HEX all-share
2. Nasdaq Composite
3. Dow Jones Industrial
4. Dow Jones Euro Stoxx 50

Sources: Helsinki Exchanges and Bloomberg.

**Chart 2. Combined financial results of domestic deposit banks<sup>1</sup>**

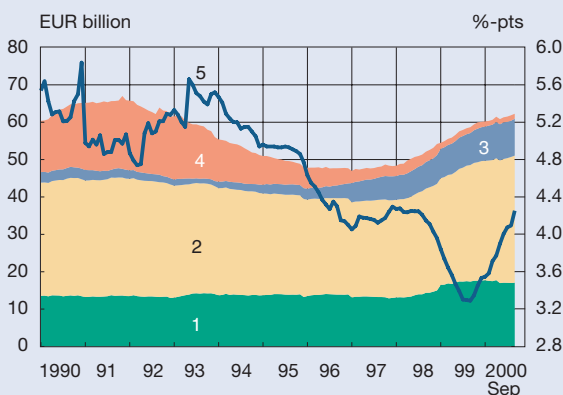


1. Net interest income
2. Other income
3. Operating expenses and depreciation
4. Loan and guarantee losses
5. Operating profit

<sup>1</sup> The figures for 1997–2000 are not fully comparable with the figures for previous years owing to numerous restructurings. As regards the MeritaNordbanken Group, the figures include the Merita Bank Group only. The figures for 1999–2000 include the Leonia Group.

Source: Financial Supervision Authority.

**Chart 3. Deposit banks: lending stock and total interest rate margin**



1. Lending to companies (left-hand scale)
2. Lending to households (left-hand scale)
3. Other markka-denominated lending (left-hand scale)
4. Foreign-currency lending (left-hand scale)
5. Total interest rate margin\* (right-hand scale)

\* Difference between average rates on markka-denominated (from 1999 euro-denominated) lending and deposits (right-hand scale).

Source: Bank of Finland.

try differences. Growth rates in those countries (Ireland, the Netherlands and Portugal) that experienced the fastest growth in the early part of the year slowed substantially in the second and third quarters, while growth rates accelerated in several other countries (Spain, Italy and the United Kingdom). In the core euro area countries – Germany and France – the growth of bank lending has continued at a moderate pace over the last two years. Lending by EU banks to the emerging economies has increased somewhat this year, but it has not reached the peak levels of two years ago.

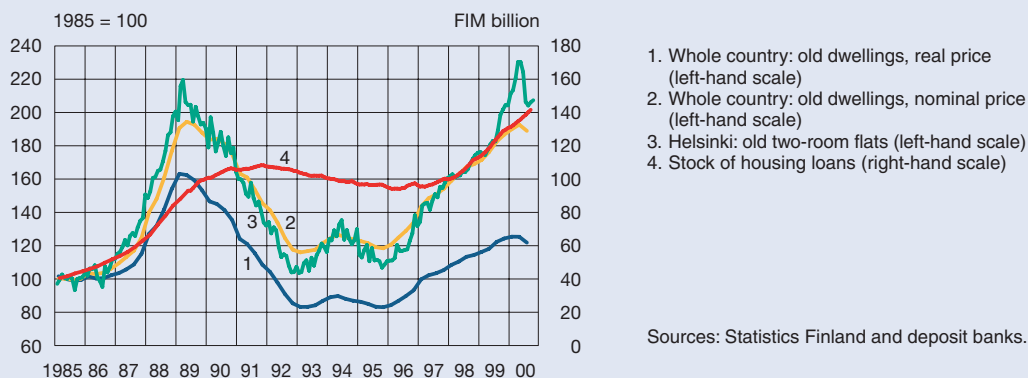
Banks' interest rate margins in corporate lending have narrowed throughout the EU area. However, at the same time, risk premia on high yielding, riskier corporate bonds, in particular, have increased sub-

stantially during the current year, reflecting increased uncertainty concerning companies' future prospects.

## Stable prospects for the Finnish financial system

Despite increased turbulence in the international financial markets, conditions in the Finnish markets still appear stable. Forecasts indicate continued strong growth for the Finnish economy over the next few years. The rise in household indebtedness is slowing as a result of the expected growth of disposable income and moderate borrowing. Companies' debt servicing ability is also good on average, and bank-

**Chart 4. Housing prices and lending growth in Finland**



ruptcies remain at modest levels. Finnish companies have been borrowing at moderate rates during the present boom. Stock market turbulence has not yet caused serious problems for companies, but if it continues some IT companies reliant on equity financing could run into difficulties because of their heavy investment needs and low cash flow.

Finnish banks are expected to post record profits this year (Chart 2). The banking sector is in good condition and banks' solvency ratios have been strengthened by the accumulation of operating profits. The banks' strong profitability is largely based on growth in net interest income and other income. Growth in the former has resulted from a widening of the margin between lending and deposit rates (Chart 3).

### Risks attached to loan pricing and rising asset prices

Although the margin between banks' lending and deposit rates is currently fairly wide, the fact that the margins between lending rates and market interest rates are quite narrow suggests the presence of a potential risk factor. The interest rate charged on a loan should include a premium to cover the bank's credit risk. The narrowing of lending margins derives from cross-subsidization (enabled by cheap deposits) and probably also from heightened competition in lending. At some point, narrow lending margins could seriously weaken banks' profitability if competition

for deposits should heat up. In the long run, underpricing of risk can lead to weaker solvency ratios and reduced ability to withstand loan losses.

Movements in asset prices also continue to pose risks for banks, even though concerns about a stock market crash eased during the second and third quarters of this year. The wide movements in property prices over the business cycle have historically presented a problem for the banking sector. A large share of bank lending is tied to property in the form of, for example, housing loans to households and loans to companies in construction and other property-related sectors. A protracted and pronounced rise in property prices increases banks' credit risks. As regards housing loans to households, a fall in prices would affect loan collateral, whereas in construction and other property-related sectors, a fall in prices would directly reduce borrowers' ability to service debt. Property prices have risen substantially over the last two years in many EU countries, including Finland. The rise in property prices slowed considerably in Finland in the second and third quarters of this year as demand started to soften in response to a series of interest rate increases (Chart 4).

Potential contagion of disturbances from the international financial markets represents a growing risk to the stability of the Finnish financial markets. While the integration of financial markets has resulted in an increase in cross-border interbank claims and hence in a reduction in banks' exposure to domestic disturbances, it has also increased the probability that disturbances will spread from country to country.

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## Improvements in regulation and supervision require international harmonization

Despite the fact that the prolonged period of economic growth has led to a significant increase in the stock of bank lending, annual loan losses have been declining for several years. However, there is good reason to expect an increase in lending to be followed – with a lag – by an increase in loan losses. From the perspective of financial system stability, it is important that banks prepare for these increases in loan losses. Such preparation can be promoted by enabling – or even requiring – banks to make loan loss provisions on the basis of statistical models during boom periods, when the stock of lending is growing, even though the volume of non-performing loans is not yet actually growing and it is not possible to allocate provisions to specific loans (also known as *ex ante*, or dynamic provisioning). This would strengthen credit institutions' ability to withstand cyclical fluctuations and thus would promote financial stability. In certain countries (eg Spain) the use of statistical models to estimate loan loss provisions is already common practice. However, this kind of reform requires re-assessment of the accounting rules on the appropriate moment to record loan losses. Such re-assessment takes time. International harmonization of rules on loan loss provisions is only just beginning, despite the fact that global harmonization of capital requirements has already reached an advanced stage (the Basel Accord, EU directives).

Reform of credit institutions' regulatory capital requirements has moved ahead following a round of consultations in spring 2000, and the Basel Committee on Banking Supervision will publish a new proposal in early 2001. The EU's corresponding proposal, which will probably be closely in line with the Basel approach, will be distributed for a second round of comments at the same time. After the comments have been received in spring 2001, it is planned to publish the final recommendations in summer 2001. As regards the EU, the aim is to have the new legislation enter into effect at national level at the beginning of 2004. Among other things, the focus of this work is on banks' own credit risk models in calculating capital positions. When implemented, the reform will bring about major changes in the regulation and supervision related to capital adequacy.

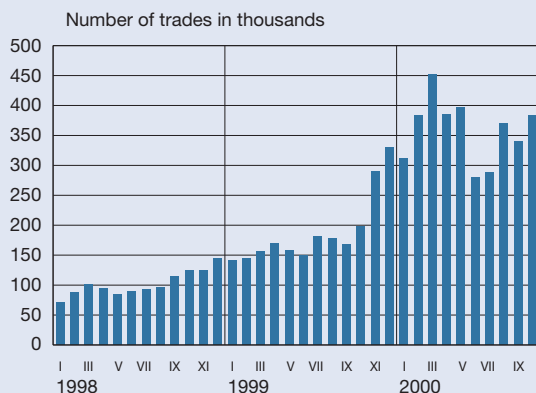
## Pronounced structural changes are reshaping the financial services sector

As a result of advances in information technology, the global banking sector is undergoing far-reaching structural change. In addition, in the EU the single market and the single currency – the euro – have speeded up the restructuring of banks and other financial service firms. In the Nordic countries, the Nordea group achieved one of its strategic aims when the Norwegian bank, Christiania Bank og Kreditkasse, joined the group. In Finland the insurance company Sampo and the banking group Leonia have formed the country's first major financial conglomerate, which will commence operations at the beginning of 2001; and under an agreement announced in early December, Mandatum Bank, a leading Finnish investment bank, will also become part of the new group.

Bank mergers across national boundaries and across different fields of activity constitute a considerable challenge as regards financial stability. Operational problems of the merging parties and differences in corporate cultures demand time and resources in both the planning and implementation stages. Short-run cost savings are unlikely. The process requires rapid reform of regulation and supervision. The supervision of alliances formed via cross-border mergers is the joint responsibility of the supervisory authorities of the countries involved. This calls for similarity in the regulatory framework and the ability to work effectively together. Mergers between banks and insurance companies present a formidable challenge because of cross-sector differences in operating and accounting practices. This type of overarching regulation and supervision is only in the development stage, both in Finland and the world at large.

Besides mergers, banks have formed various other kinds of alliances with non-bank firms. In Finland the Okobank Group has formed alliances with, for example, the insurance company Pohjola and with Sonera Plaza (an Internet marketplace) and Kesko (Finland's leading retailing chain). The public authorities have attempted to keep up with market innovations and sector overlaps in the financial markets by amending the legislation in accord with market needs. In autumn 1999 the Ministry of Finance set up a working group to consider how to implement in na-

**Chart 5. Volume of share trades settled in the APK**



Source: APK.

tional legislation the EU directive on electronic money (2000/46/EC) and to meet the challenges posed by sector overlaps in the financial markets. Among other things, the working group is considering to what extent it might be possible to ease the current restrictions on the acceptance of repayable funds from the public. The group is due to complete its work at the end of 2000.

Developments in information technology – an important factor behind ongoing structural change – constitute a strategic risk to banks. Some recent spectacular bankruptcies of Internet companies have exposed the vulnerability of firms engaging in e-commerce. Although e-commerce and the provision of related services enable volume growth, it is critical that these services be provided in a cost-effective way. A long-standing emphasis on electronic payments and related services as well as Finns' penchant for IT have given Finnish banks an edge in exploiting the new technologies. This is illustrated by the fact that as yet no Internet-only banks have emerged to compete with traditional Finnish banks. The Finnish banks' lead will eventually be whittled away, however. There is a risk here that investments may be misdirected or the speed and direction of technological progress miscalculated.

### Single book-entry register paves the way for reform of equities settlement

The Finnish Central Securities Depository (APK) maintains settlement and registration systems for eq-

uity securities (OM system) and debt instruments (RM system). The monthly number of settlements in the OM system peaked at about 450,000 in March 2000. The fall in share prices since that time has made investors more cautious, and so the number of trades settled has declined, except for occasional spikes in daily activity. Following a quiet summer, monthly settlements were running at some 350,000 during the autumn (Chart 5). In the RM system, after a moderate increase in the early part of the year, the number of settlements has stabilized at 5,000–6,000 per month.

Centralization of the clearing and settlement of equities in a single book-entry register was completed, as scheduled, on 16 October 2000, when the related new legislation also entered into effect. In this connection, six different registers were brought into the APK system. The former registrars now function as account operators. Although the project represented a substantial structural change, it was hardly noticeable to investors. Centralization of registers was an essential step in improving the international competitiveness of Finnish securities markets, as it enables further development of depository and settlement systems and more effective functioning of the entire book-entry system.

The trading and settlement infrastructure of European securities markets is in a state of constant flux. Recent successful projects include the commencement of operations of Euronext, the alliance formed by the stock exchanges of Paris, Amsterdam and Brussels in the autumn; and the start-up in October of a joint venture between the UK settlement firm, CrestCo, and the Swiss SIS. On the other hand, plans for a merger

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of the London and Frankfurt stock exchanges to form the iX exchange were abandoned in autumn 2000. The listing and public flotation of national exchanges also enables structural change to advance through hostile takeover attempts. A good case in point was the recent attempt by the Swedish OM Gruppen to take over the London Stock Exchange.

## The European Central Bank to monitor efforts to improve the efficiency of cross-border retail payments

In June the ECB published a statement on the Eurosystem's role in oversight of payment systems. The purpose of the statement was to clarify the role of the Eurosystem in the oversight of payment systems as well as the organizational structure of oversight within the Eurosystem. It was pointed out that payment systems oversight is an integral function of central banks and that the purpose of such oversight is to ensure the smooth operation of payment systems.

In September 1999 the ECB published a report<sup>1</sup> aimed at improving the efficiency of cross-border retail payments between banks in the euro area. It is intended that the costs and speed of cross-border retail payments should be on a par with domestic payments by 2002. The euro area banking and payment systems community is committed to these goals. In November the Euro Banking Association (EBA) began to offer a new service for small-value cross-border payments, under the name Straight Through Euro Processing or STEP 1. The ECB is closely monitoring the fulfilment of the goals set out in its report.

The TARGET payment system, which is maintained by the national central banks of the EU member states, handled about 42,000 cross-border payments per day on average in September, with a combined average daily value of EUR 450 billion. The average value of a TARGET payment has fallen in the course of the year because of the growing share of customer payments handled. Customer payments are smaller on average than interbank payments. For the EBA's EURO 1 payment system, the number of transactions has increased since the start of the year. In

September the daily average number of transactions executed was 98,100, with a combined average value of more than EUR 200 billion.

The average daily value of transactions executed in the Bank of Finland's interbank funds transfer system (BoF-RTGS) rose to EUR 17 billion in September, following a quieter summer period. Two-thirds of the payments handled were TARGET payments from or to other EU countries. The average daily value of domestic payments in BoF-RTGS was EUR 5.5 billion in October. The night clearings (effected just after midnight), which were started in May 2000 and replaced the morning clearings, have reduced counterparty risks among banks since banks now credit a customer's account for a payment from another bank only after receiving funds from the other bank.

In November 1999 the Finnish Netting Act entered into effect. This act implements the Directive on settlement finality in payment and securities settlement systems (98/26/EC). The key change in respect of payment systems is that there must be written rules for all systems covered by the act (POPS interbank system for express transfers and cheques, PMJ interbank system for retail payments and payment systems provided by Okobank and Aktia for their member banks). The rules must, inter alia, define the point in time at which a system participant can no longer unilaterally cancel a payment order. This is particularly important when a party to a transaction becomes insolvent.

The international CLS Bank<sup>2</sup>, which is designed to reduce banks' risks in foreign currency trading, was due to commence operations in October 2000. However, it now appears that the start-up will be delayed until November 2001. CLS Bank will offer banks payment vs payment (PVP) settlements, ie simultaneous two-way settlements of currency exchanges. This will largely eliminate participating banks' settlement risks in foreign exchange trading.

5 December 2000

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

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<sup>1</sup> Improving cross-border retail payment services – the Eurosystem's view.

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<sup>2</sup> CLS = Continuous Linked Settlement.

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## Strong public finances provide scope for tax cuts

by **Helvi Kinnunen**, Senior Economist  
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In recent years the primary objective of Finnish fiscal policy has been to consolidate central government finances. In practice, there has not been any alternative to reducing the large deficit that emerged during the severe economic recession of the early 1990s and reversing the unsustainable build-up of debt that accompanied it. Those efforts have borne fruit, as spending cuts and a heavy tax burden – a legacy of the recession – have brought about a significant improvement in the central government budgetary position. As a result of fiscal consolidation and favourable economic performance, the central government budgetary position will move into surplus this year for the first time since 1990. The ratio of central government debt to GDP had already begun to decline in 1998. In the programme drawn up by the incoming Government in spring 1999, the following targets were set for fiscal policy: to cut household income tax by FIM 10–11 billion over the four-year period 1999–2003; to achieve a structural surplus in central government finances; to bring down the ratio of central government debt to GDP to below 50%; and to keep real central government expenditure unchanged at the budgeted level for 1999 throughout the four-year term.

Given the country's recent economic performance, the targets set for fiscal consolidation and tax cuts no longer seem particularly ambitious. Both the economy as a whole and central government revenue have grown noticeably faster than envisaged when the programme was drafted. Consequently, the fiscal stance this year is less stringent in relation to cyclical conditions than was originally foreseen. But while robust economic growth has created room for tax cuts, the decision on their timing has been complicated by a clear risk of economic overheating. Over the next few years there will be mounting pressure to cut taxes both for domestic reasons and because other EU countries have lowered or plan to lower taxes at a notably faster pace than was expected some eighteen

months ago. Moreover, on the expenditure side, population ageing will generate pressures for a substantial increase in public spending in the longer term.

### Fiscal policy guidelines

In the course of the current year the Government has specified the fiscal policy guidelines laid down in its programme, first in March in a Government statement submitted to Parliament on the budgetary framework for 2001–2004 and again in the autumn in the budget proposal for 2001 and the stability programme update. In the spring the Government also announced how it intended to dispose of privatization proceeds, which at the time were projected to be substantial.

The spending ceilings set for 2001–2004 in the budgetary framework were drawn up largely in conformity with the original guidelines set out in the Government's programme, namely with the aim of maintaining real expenditure at the 1999 level. But because of the risk of economic overheating, the ceilings for 2001 were tightened in comparison with the Government's programme by reducing allocations slightly in real terms from the previous year. Central government outlays in the budget proposal for 2001 are broadly consistent with the spending ceilings set in the spring. The budgetary framework did not include any actual spending cuts. Rather, the smaller estimated allocations for unemployment benefits (due to higher employment) and interest expenses (due to a faster-than-projected decline in central government debt) have made room for other expenditure. Thus spending policy is somewhat more lax in relation to prevailing cyclical conditions and in comparison with the original fiscal policy guidelines contained in the Government's programme.

For the first time the spending ceilings were presented to Parliament in spring 2000 in the form of a

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Government statement. The aim was that Parliament would make a clearer commitment to the ceilings at an earlier stage in the budgetary process than had been the case in the past. The ensuing parliamentary debate on the ceilings highlighted a problem related to the way the ceilings are defined. The allocation of funds by ministries does not reveal how expenditure is allocated by purpose, and thus does not provide a useful basis for discussing spending priorities. In the parliamentary debate it emerged that there was a need to assess not so much the overall level of spending as how funds are allocated. Another problem with the spending ceilings is that they take no account of rises in negotiated wages and the level of earnings. There is thus a built-in risk of spending overruns, as ministries have shown little ability to adjust other expenditure items to compensate for higher wage costs. The danger that wage increases in the central government sector will be automatically covered by supplementary budgets is therefore evident.

The September update of the stability programme for 2001–2004 is based on the spending guidelines in the budgetary framework and the assumption that GDP will grow by about 3% a year on average. The general government surplus is projected to stabilize at around 4.5% of GDP and the central government surplus to remain in the region of 1.5–2% of GDP. A new element of the Government's fiscal strategy is that a surplus of almost 1.5% was set as a minimum target level for implementing a tax-cutting programme without jeopardizing stability in the central government finances. Tax cuts are also conditional on moderate wage increases and a stable macroeconomic environment in general. By maintaining a structural surplus in central government finances, it will be possible to cushion the fiscal impact of future increases in pension expenditure caused by an ageing population. Indeed, preparing to meet this challenge has emerged as a key issue in policy discussions during the current year.

The central government debt-to-GDP ratio is still high and an ageing population will generate heavy spending pressures in the future. In spite of this, making tax reductions conditional on the short-term objective of achieving fiscal balance could compromise long-term growth and employment objectives, since high taxes could hamper employment growth. The tax-cutting targets contained in the Government's programme imply only a small reduction in the aver-

age tax rate faced by households, especially if it is assumed that the targets include an adjustment for inflation. A positive development in this regard is therefore the fact that the tax cuts in the budget proposal for 2001 are noticeably larger than those implemented in 1999 and 2000. The proposed cuts are also significant in relation to the target set by for the Government's entire term in office. Together with the adjustment of income tax tables for inflation, the cuts for 2001 amount to some FIM 6 billion.

Both the overall tax burden and spending pressures in central government finances also depend on fiscal decisions taken in the local government sector. Despite their increased revenue, very few municipalities plan to cut local taxes. On the contrary, improving the level of social and health services provided by municipalities – a key issue in the recent local elections – could lead to pressures to raise both central government grants to municipalities and local taxes. As the municipalities enjoy a high degree of autonomy, the central government has only limited possibilities to intervene in the setting of spending priorities by the municipalities. In recent years central government grants to municipalities have been growing again and they are set to rise further in 2001, due in part to full compensation for cost increases and the introduction of preschooling for six year-olds.

### Positive near-term outlook for general government finances

In its macroeconomic forecast for the period up to the end of 2002, the Bank of Finland expects general government finances to remain comfortably in surplus. The forecast assumes tax cuts totalling about 6.2 billion in 2001 and over FIM 4 billion in 2002. The surpluses in both central and general government finances are slightly smaller than projected in the stability programme.

If central government finances are to remain in surplus as forecast, expenditure will have to be kept within the spending limits. The forecast assumes that central government expenditure increases by 2% a year on average in the period 2001–2002, which broadly corresponds to the expected rate of increase in prices. Employment growth will reduce expenditure by more than FIM 2 billion over the forecast period while a further decline in outstanding debt will



**Table. General government finances and the tax ratio**

	1998	1999	2000 <sup>f</sup>	2001 <sup>f</sup>	2002 <sup>f</sup>
<b>% of GDP</b>					
<b>General government net lending</b>	<b>1.3</b>	<b>1.9</b>	<b>4.5</b>	<b>4.2</b>	<b>4.5</b>
Central government	-1.5	-0.8	1.4	1.1	1.3
Local government	-0.3	-0.2	-0.1	0.0	-0.1
Social security funds	3.1	2.9	3.2	3.1	3.2
General government primary balance	5.0	5.4	7.7	7.0	7.1
General government debt (Maastricht definition)	48.7	46.6	41.7	38.5	35.5
Central government debt	60.0	55.9	49.5	44.7	40.4
Overall tax ratio. % of GDP	45.9	45.7	45.8	43.8	42.9
Household tax ratio. % of tax base	32.9	32.5	33.5	32.1	31.2

f = forecast.

reduce interest expenditure by some FIM 3 billion. Keeping spending within the ceilings will be more difficult than in previous years, among other things because of an increase in central government grants to municipalities. In addition, central government pension expenditure will grow rapidly. The forecast assumes that it will be possible to remain within the limits because social assistance benefits to households, other than those related to employment, will decrease. But maintaining the level of service provision by the central government as wages rise will require a sharp cutback in other operating costs so that pressures to increase current expenditure can be contained.

Nor do developments on the revenue side suggest that the surplus in central government finances is built on a firm basis. Underlying the surplus in the current year are exceptionally large income tax receipts, particularly in corporate taxation. This is largely the result of firms' good profit performance, extensive acquisition and merger activity and capital gains due to higher share values. Income tax receipts will return to normal levels in 2001 and 2002. As the share of corporate taxes currently accounts for about a third of all central government tax receipts, this means that central government revenue is now more sensitive to fluctuations in the economic cycle than it was just a few years ago. Therefore a sudden deterioration in the profitability of the corporate sector would be enough to push central government finances back into deficit.

The calculations in the forecast underline the importance of spending restraint as a condition for a significant reduction in taxes. The tax cuts do not reduce the total tax burden of households by a very large margin, even if the assumed tax cut in 2002 is taken into account. This is because with a progressive tax system taxation tightens as real earnings rise. Altogether, the planned tax cuts imply only a small decline in the average tax rate for households.

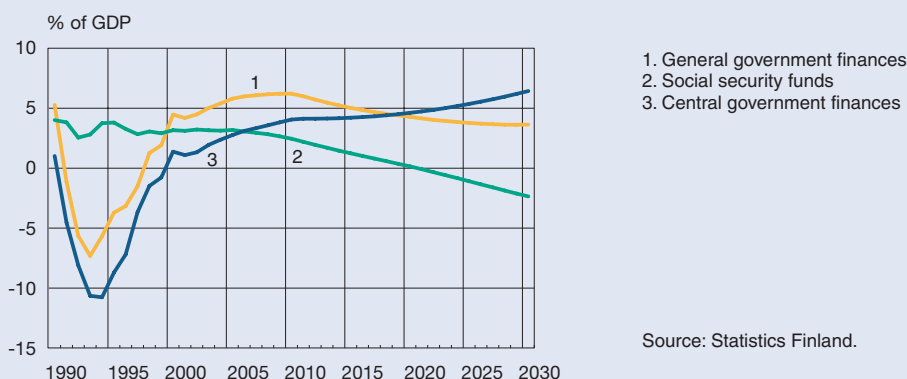
### The long-term challenge of an ageing population

In the years to come population ageing will lead to increased expenditure on pensions and health care and a decline in the size of the working age population. Taking these factors into account, it is possible to estimate the long-term sustainability of fiscal policy by making a number of simple assumptions.

Pension calculations<sup>1</sup> based on demographic trends and current pension entitlements show that pension expenditure will grow, on average, by over 3% a year in real terms over the next three decades. During the same period the number of employed persons will decline by about 9% (approximately 220,000) for demographic reasons. The number of

<sup>1</sup> Klaavo, T, Salonen, J, Tenkula, E, and Vanne, R (1999), 'Eläkemenot, -rahastot ja -maksut vuoteen 2050', *Central Pension Security Institute Reports*, 1999:17 (in Finnish).

**Chart. Fiscal balances in general government finances, central government finances and social security funds, 1990–2030**



employed persons for each pensioner will fall from almost two at present to about one and half in 2010 and just over one in 2020. As the population grows older, expenditure on health care will also increase: from about 5% of GDP at present to 7%, according to calculations made by the Economic Council.<sup>2</sup>

The effects of an ageing population on general government finances were estimated mechanistically, using the Bank of Finland’s macroeconomic forecast for the period up to the end of 2002 as a starting point. The GDP shares of taxes and comparable payments were kept constant in subsequent years. From 2002 onwards productivity was assumed to grow at an annual rate of 2%. Since population ageing reduces the number of employed persons in the economy, GDP growth slows to some 1.5% a year from about 2010 onwards. As a result pension expenditure as a percentage of GDP increases from just under 11% at present to over 15% by 2030. Since interest payments on central government debt depend on the stock of outstanding debt and the level of interest rates, which is assumed to remain constant at 5%, the decline in the size of the debt reduces interest expenditure and as a result the surplus in central government finances increases. The level of real earnings is assumed to start growing from 2002 onwards at the same rate as productivity.

<sup>2</sup> Prime Minister’s Office, Economic Council (1999), ‘Public finances in the twenty-first century: limitations, challenges and direction of reforms’, working group report, *Prime Minister’s Office Publication Series*, 1999/1.

According to the calculation, the central government pays off its debt within a period of just over ten years, after which net assets start to accrue in central government finances. On the other hand, rising pension expenditure pushes social security funds into deficit in about 20 years’ time. General government finances remain in surplus, however. If the entire general government surplus were used to replenish the resources of social security funds, the latter would reach their target level during the period examined.<sup>3</sup>

At least the following points can be deduced from the calculation outlined above. First, the cumulative surplus in central government finances is sufficient to cover increased outlays due to population ageing, and so it is not necessary for the sustainability of fiscal policy to increase the overall tax burden from the level assumed for 2002 in the Bank of Finland’s forecast. Thus the medium-term target set by the Government for the surplus in central government finances is well founded on the basis of the projected spending pressures in the calculation. Secondly, if the potential erosion of the tax base caused by the heavy tax burden is taken into account, this implies the need to bring down the rate of increase in expenditure items other than interest and pension outlays below the GDP growth rate. The higher the tax burden is compared with other countries, the greater will be the risk of erosion of the tax base and therefore the greater the pressures for cutting expenditure.

<sup>3</sup> Klaavo, T, Salonen, J, Tenkula, E, and Vanne, R (1999), *op. cit.*

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The improvement in central government finances now offers a more positive picture of the scope in public finances for meeting the challenge of an ageing population than was thought possible on the basis of similar calculations made just a few years ago. This assessment must, however, be seen in the light of the international trend towards lowering taxes. With the consolidation of general government finances in euro area countries, nearly all these countries have announced plans for substantial tax cuts. Hence calculations based on the current tax burden could paint too rosy a picture of the state of central government finances in Finland. Given the risk of a shrinking tax base, Finland cannot indefinitely maintain a tax burden that is higher than in other countries.

### Continuing need for spending restraint

The long-term outlook indicates that population ageing will not necessarily be an obstacle to lowering taxes. This nevertheless requires that growth of public expenditure be kept in check in the years to come as well. In the long run the reduction in the tax burden will pay for itself in a number of ways. The most important impact on the tax base would be that lower taxes would reduce structural unemployment and thereby raise the employment rate. This, in turn, would reduce unemployment-related costs and boost output. Thus tax cuts would enlarge the tax base, making general government finances better able to meet spending pressures in the future. Reducing the tax burden would also remove the incentive for Finnish firms to relocate their production abroad in countries with lower taxes. Similarly, there would be less incentive for high-income workers to move abroad, although this will, of course, also depend on how

Finland manages to compete with other countries in the provision of public services such as education, day care facilities and health care, in other words on how public expenditure is targeted.

Over the coming years Finland will have to face pressures on taxes and the tax base caused by high taxes at home and the international trend towards lowering taxes. To reduce structural unemployment, many EU countries are implementing or planning to implement reforms aimed at cutting labour taxes and revamping social benefits systems. Indeed, one of the near-term economic policy goals set for the EU countries in the current year is to alleviate incentive problems associated with high taxes and social benefits. The tax cuts already made during the term of the present Government and included in the Bank of Finland's forecast will suffice to prevent a rise in the average tax rate faced by households in central government taxation. But the programme of tax cuts will hardly reduce the overall tax burden of households at all. Owing to the relatively rapid rise in the level of earnings, an increasingly large share of tax cuts will go towards offsetting the progressivity of income tax rates. Consequently, in its present form the Government's tax-cutting programme will not be enough to make a significant inroad into structural unemployment. Curbing the growth of public expenditure and lowering the tax burden will therefore remain a challenge for fiscal policy in the future.

7 November 2000

- **Key words: fiscal policy, forecast of central government finances, population ageing**

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# Labour supply and income taxation<sup>1</sup>

by **Mika Kuismanen**, Senior Economist  
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**M**easuring the work disincentive effects of taxation has been a major area of research activity in the empirical literature of both labour economics and public finance over the past 20 years or so. During this period many developed countries in Europe and North America have reformed their income tax systems. A common feature of all of these reforms has been a reduction in the highest marginal tax rates and simplification of income tax systems. At the same time there has been a steady increase in the sophistication of econometric techniques applied in measuring the labour supply effects of income taxation.

For the past year or so the roles of income taxation and social security payments (whether paid by employer or employee) have been the subject of intense debate in Finland. While nearly all the contributors to the debate are agreed that the tax burden is too high, there is no consensus on the best way of reducing it. The aim of this article is to shed some light on how the behaviour of individuals might change in response to different types of income tax reforms. The results are obtained from a behavioural microsimulation model that relies on parameters estimated from a state-of-the-art econometric model. This does not mean that the results are free of problems. Much empirical work remains to be done in this field. It should also be noted that the approach applied here only deals with supply side effects.

## Some theoretical background

By way of introduction it is useful to identify the possible channels through which the level of tax-

ation affects the incentive to work. When individuals face a lower marginal tax rate on additional income, they will, other things being equal, be willing to work more hours. Briefly stated, this is the incentive (or substitution) effect of a tax change. But, this is not the only effect of a tax cut as the net incomes received by individuals will also rise. If leisure time is a normal good, then higher net incomes may reduce the willingness of individuals to work more hours. This is called the income effect. Thus, any change in a tax or benefit system leads to a complicated set of income and substitution effects, and, as Blundell and Walker (1990) have pointed out, it is not always easy in the general debate on these issues to determine whether people are referring to the total effect (combined income and substitution effects) of tax changes or to the substitution effect alone.

If the focus of interest is the economic efficiency of the tax system, then the substitution effect is the only relevant factor. This is because the marginal tax rate distorts individuals' economic decisions by creating a wedge between the wage rate an employer is willing to pay for an extra hour of work and the net wage rate the employee receives. Thus, the higher the marginal tax rate the bigger is the wedge. A high marginal tax rate may therefore make exchanges (a given number of hours of work for an hour's worth of pay) between agents unattractive while in the absence of the tax wedge they would be mutually beneficial. From the above, it can be concluded that lower marginal tax rates are to be preferred to higher ones.

However, efficiency is not the only dimension of taxation.<sup>2</sup> The other important dimension is equity. By equity is meant the objective of redistributing incomes (from high-income earners to low-income

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<sup>1</sup> This article is based on the author's paper 'Labour supply and income tax changes: a simulation study for Finland', *Bank of Finland Discussion Papers*, 5/2000.

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<sup>2</sup> Here one has to remember that wages are not independent of the current tax system. Taxation matters for wage formation.

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earners). Obviously, income taxation is not the only redistributive tool. In a country like Finland the social security system plays a major role in this regard. The tax system is redistributive if the average tax rate faced by high-income earners is higher than the average rate faced by low-income earners.<sup>3</sup> So, redistribution from high-income earners to low-income earners inevitably implies work disincentive effects because of high marginal tax rates. This is the so-called equity-efficiency trade-off. A widely held view in the ongoing Finnish tax debate is that the efficiency costs of an equitable tax system are high and that they should be reduced by lowering both marginal and average tax rates.

### Why microsimulation?

Despite the fact that, for example, budgetary and tax reforms have allocational and distributional consequences, it is still often the case – in Finland at least – that these effects are ignored in policy discussion. Typically, only macroeconomic measures are presented and the figures cited usually represent first-round cash impacts and thus ignore any responses individuals may make. As the real purpose of many policy reforms is to create incentives for individuals to change their behaviour, it seems odd not to try to include behavioural aspects in the analysis. Too often discussion of important policy issues is limited to calculations concerning a hypothetical individual with average earnings, who is married with one or two children, lives in a flat and has X amount of mortgages etc. It has been shown that such calculations can be highly misleading; see eg Atkinson (1995).

In contrast to this approach, microsimulation may be viewed as an attempt to model and simulate the whole distribution of policy target variables, not just their mean values. For example, in many cases we are interested in analysing the impact of an income tax change on the whole distribution to find out who gains and who loses. One of the main advantages of microsimulation is that it allows us to deal with heterogeneous behaviour, thus recognizing that not all individuals (or firms) behave like the average economic agent.

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<sup>3</sup> In other words, the average tax rate should be an increasing function of income and the marginal tax rate must be higher than the average rate.

### Data source and estimation procedure

The best source of data in Finland for analysing the effects of tax and benefit changes on actual individuals is the Labour Force Survey database (LFS). It covers a vast amount of information on labour market activity. This can be combined with register-based income information from the tax authorities' database on all the individuals included in the LFS. For the purposes of the analysis a sample of married women in the age group 25–60 years was drawn from the LFS for the year 1989. The final sample size was 2,037 individuals and exactly the same sample was used in estimation and simulation.

Before simulation it is necessary to estimate the labour supply function to obtain crucial behavioural parameters. This is a demanding task owing to the fact that under the Finnish income tax system the budget constraint faced by individuals is non-linear. In practice this requires construction of a budget constraint for each individual in the sample and application of an estimation technique that allows for these non-linearities; see Blundell and MaCurdy (1999) for details.

### Simulation results

As already mentioned the data used are from 1989 and thus the income tax regime prevailing in that year serves as a baseline against which all results are compared. The year 1989 was chosen as the baseline for the following reason. When labour supply functions were estimated from the cross-section data sets for several years, it was found that the results differed according to the prevailing economic conditions; labour supply elasticities differ between recession and boom years. In 1989 the national income tax schedule contained six marginal tax rates, ranging from 11 to 44%. The Table below shows the central government income tax schedule for 1989.

In 1989 the local tax rate ranged from 14 to 19.5%. Local taxes and all other factors such as tax deductions, social security contributions etc are taken into account in the analysis.

The analysis is of the partial equilibrium type and thus only supply side effects can be derived. It is not therefore possible to answer questions concerning the

**Table. Central government income tax schedule, 1989**

Taxable income, FIM	Tax at lower bound, FIM	Marginal tax rate, %
36,000 – 51,000	50	11
51,000 – 63,000	1,700	21
63,000 – 89,000	4,220	26
89,000 – 140,000	10,980	32
140,000 – 250,000	27,300	37
250,000 –	68,000	44

labour supply effects of changes in demand side variables, such as a lowering in social security and pension contributions paid by employers. It should also be remembered that the calculations are based on a representative sample of females. There is a fairly large body of empirical research that supports the view that female labour supply is more flexible than male labour supply, and Finland seems to be no exception in this regard.

First of all, the simulation results imply that a shift to a proportional tax system with a neutral impact on tax revenue does not increase labour force participation and that the labour supply effects are confined mainly to the upper end of the income distribution. Losers and winners can easily be identified: the high-income earners are the winners and the low-income earners the main losers.

It has been argued in the Finnish debate that the largest effects on labour supply would be achieved by proportionally larger cuts in the marginal tax rates for the lowest income bands in the tax schedule. The intuition behind this is that individuals with low incomes are willing to increase the number of hours they work when their net wage increases. In other words, the substitution effect is more dominant in the case of low-income earners than it is in the case of high-income earners.

To investigate the effects of a reform of the tax system along these lines, the marginal tax rates for the lowest three income bands in the income tax schedule in the Table were reduced by four percentage points in the bottom two bands and one percentage point in the third lowest band. The simulation results indicate that these changes seem to have a fairly large effect on the labour force participation rate, which increases by some four percentage points compared with the baseline case. Individuals who are now willing to enter the labour market are also willing to work a considerable number of hours per year.

The percentage change in mean hours relative to the baseline solution is 8.8%, with the main response coming from individuals whose net incomes are in the lowest three deciles. The hours worked by these individuals are also located at the lower end of the distribution of hours. A reform of this kind has only a very small impact on the labour supply of individuals whose incomes are above the median.

The labour supply effects of a reduction in the top marginal tax rate were also studied. In the baseline solution the top marginal tax rate is 44% and the second highest marginal tax rate 37% if taxable income is over FIM 140,000. In the case considered, the top two rates were replaced by a single rate of 35% for all individuals whose taxable income exceeds FIM 140,000. The simulation results show that cutting the top marginal tax rates does not have any effect on the labour force participation rate. The mean number of hours worked increases by 4.5%, with the biggest changes in labour supply occurring in the three highest income deciles. This reform improves the position of high-income earners relative to the rest of the population, because their post-reform net incomes increase.

An interesting aspect of this reform is that the overall loss in tax revenue is fairly large because of the heavy revenue losses in the three highest income deciles. More detailed information on the simulations can be found in Kuismanen (2000).

## Conclusions

Before summarizing and discussing the results, it is worth noting some limitations of the analysis. First, it is a partial equilibrium analysis and thus only supply side effects can be taken into account. Secondly, labour supply is a dynamic phenomenon but the analysis is based on the assumption of no intertemporal effects. For dynamic solutions to be performed it would first be necessary to estimate a dynamic labour supply function to obtain the intertemporal elasticity of substitution. This is a topic for further research. Thirdly, the tax unit in the analysis is an individual rather than a household. Unlike many other countries, individuals are treated as separate tax units in Finland and so this choice is legitimate. Of course, even in a tax system based on independent taxation household behaviour does matter.

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The main findings are as follows. A shift from progressive income taxation to proportional taxation in a revenue neutral way does not have a major impact on labour supply. By contrast, an income tax reform involving a reduction in tax rates at the lower end of the tax schedule leads to an increase in labour force participation and in labour supply among low-income earners. On the other hand, reforms directed at the upper end of the tax schedule do not cause major behavioural changes. The results indicate that none of the reforms analysed are self-financing. Increases in labour supply are not enough to fully offset the reduction in tax revenue. This applies particularly when the highest marginal tax rates are lowered. The conclusion to be drawn is that, if we wish to lower income taxes, then we also have to consider ways in which public expenditure can be reduced.

13 October 2000

■ **Key words: income taxation, labour supply, microsimulation, tax reforms**

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## Items

### Sinikka Salo appointed to the Board of the Bank of Finland

The President of the Republic, Ms Tarja Halonen, appointed Ms Sinikka Salo, Dr Sc (Econ), as Member of the Board of the Bank of Finland with effect from 16 October 2000. The term of office for a board member is five years.

Dr Salo has previously served as an economist at the Research Institute of the Finnish Economy and the Bank of Finland and as acting Associate Professor at the University of Helsinki. For the five years prior to her appointment to the Board, she worked in Frankfurt am Main, first as Principal Economist and Head of Country Analysis in the Monetary, Economics and Statistics Department of the European Monetary Institute and then as Primary Economist in the Directorate General Economics of the European Central Bank.

### Commemorative coin for Aleksis Kivi and Finnish literature

On 20 September 2000 the Ministry of Finance decided on the striking of a silver commemorative coin for the Finnish author Aleksis Kivi and Finnish literature. The coin is being issued to mark the 50<sup>th</sup> anniversary of the day honouring Aleksis Kivi and the 130<sup>th</sup> anniversary of the publication of his masterpiece, the novel *The Seven Brothers*.

The nominal value of the coin is FIM 100, and the maximum number to be struck is 22,000. The design of the coin is by the sculptor Erja Tielinen, who won the competition for the design of the coin held in June 2000 with her work *Minä elän* (I am alive). The coin weighs 22 grams and measures 35 mm in diameter.

The obverse features an embossed text in curvature form, *ALEKSIS KIVI*, with the year *2000* embossed in between. On the right-hand side there is a stylized portrait of Aleksis Kivi facing left.

The reverse features an abstract motif symbolizing literature and the face value 100 MK. On the right-hand side there is an embossed text in curvature form, *SUOMI FINLAND*.

The new coins went on sale on 10 October 2000. Some of the coins are proof quality (12,000), ie hand-struck coins with gloss finished background and matt finished motif. The price of the BU version is FIM 158, and the proof version is priced at FIM 268.





# The Eurosystem's monetary policy instruments

27 November 2000

## Key interest rates

The main refinancing operations are the principal monetary policy instrument used by the Eurosystem<sup>1</sup>. Changes in the interest rate applied in the main refinancing operations signal the stance of the Eurosystem's monetary policy and have a major impact on the shortest money market rates. From the beginning of 1999 to June 2000 the main financing operations of the Eurosystem were conducted using the fixed rate tender procedure. At its meeting on 8 June 2000 the Governing Council of the ECB decided that, starting from the operation to be settled on 28 June 2000, the main financing operations of the Eurosystem would be conducted as variable rate tenders, using the multiple rate auction procedure. Furthermore, the Governing Council decided to set a minimum bid rate for these operations. The minimum bid rate was initially set at 4.25%, the same level applied for the previous fixed rate tender operations. Since then the minimum bid rate has been raised twice. Effective 10 November 2000, the minimum bid rate is 4.75%. 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 to bound overnight market interest rates. The interest rates on the marginal lending facility and the deposit facility are set separately by the Eurosystem. Effective 6 October 2000, the interest rate on the Eurosystem's marginal lending facility is 5.75% and the overnight interest rate on the deposit facility 3.75%.

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

## Open market operations

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

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

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

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

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

## Standing facilities

The standing facilities are intended to limit excessive 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 the 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 with the national central banks. The interest rate on the deposit facility provides a floor for the overnight market interest rate. Under normal circumstances, there are no quantitative limits on access to the standing facilities.

## Minimum reserve system

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

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

The Eurosystem's minimum reserve requirement is applicable to the following credit institutions that engage in banking business in Finland:

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

## Counterparties to monetary policy operations

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

## Assets eligible for monetary policy operations

Under the ESCB/ECB Statute, all the Eurosystem's credit operations must be based on adequate collateral. The Eurosystem accepts a wide range of securi-

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ties, issued by both public sector and private sector entities, as underlying assets for its operations. For purposes internal to the Eurosystem, eligible assets are divided into two categories. 'Tier one' consists of marketable debt instruments fulfilling uniform euro area-wide eligibility criteria specified by the ECB. 'Tier two' consists of assets, both marketable and non-marketable, that are of particular importance for national financial markets and banking systems and for

which eligibility criteria are established by the national central banks and approved by the ECB. Both tier one and tier two assets may be used as collateral for Eurosystem monetary policy operations. A list of eligible assets is available on the ECB's website (<https://mfi-assets.ecb.int>). More detailed information on the Eurosystem's monetary policy instruments is posted on the Bank of Finland's website (<http://www.bof.fi/rhindex.htm>).

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## Abstracts

### Series E

#### **The Political Economy of Monetary Policy and Wage Bargaining. Theory and Econometric Evidence**

Juha Kilponen

E:19

In this study, the determination of optimal monetary policy in unionized economies is considered from the new political economy point of view. In the empirical part of the study it is shown that, in addition to the institutional position of the central bank, labour market institutions also matter for successful anti-inflationary policy. As regards the position of the central bank, the results suggest that it is important to distinguish between the political independence of the bank and the independence of its personnel. Whereas the former helps to reduce inflation, the latter seems to produce lower unemployment and wage increases. As regards the effects of labour market institutions, the results indicate that coordination in wage bargaining is generally beneficial to inflation and employment, but that large differences between union density and coverage rates lead to higher wage increases and unemployment.

The theoretical part of the study considers interaction between monetary policy and wage determination in unionized economies. It is shown how the benefits of delegating monetary policy to an independent, conservative central bank depend on the degree of centralization or decentralization in wage determination. If unions act as leaders in the 'inflation game', which could happen if wage contracts are of very long duration, output in the economy remains inefficiently small. The size of this problem is the greater the more accommodative monetary policy is and the higher is the degree of centralization in labour markets. It may be beneficial for the unions to give up their leadership position in the determination of inflation.

■ **Key words:** monetary policy, credibility, labour markets

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## Discussion papers

### **Monitoring and Market Power in Loan Markets**

Ari Hyytinen – Otto Toivanen  
9/2000

Whether or not banks are engaged in ex ante monitoring of customers may have important consequences for the whole economy. We approach this question via a model in which banks can invest in either information acquisition or market power (product differentiation). The two alternatives generate different predictions, which are tested using panel data on Finnish local banks. We find evidence that banks' investments in branch networks and human capital (personnel) contribute to information acquisition but not to market power. We also find that managing customers' money transactions enhances banks ability to control their lending risks.

- Key words: banks, information acquisition, market power, fixed costs, branch network, default costs

### **Enhancing Bank Transparency: A Re-assessment**

Ari Hyytinen – Tuomas Takalo  
10/2000

Transparency regulation aims at reducing financial fragility by strengthening market discipline. There are however two elementary properties of banking that may render such regulation inefficient at best and detrimental at worst. First, an extensive financial safety net may eliminate the disciplinary effect of transparency regulation. Second, achieving transparency is costly for banks, as it dilutes their charter values, and hence it also reduces their private costs of risk-taking. We consider both the direct costs of complying with disclosure requirements and the indirect transparency costs stemming from imperfect property rights governing information and specify the conditions under which transparency regulation can (and cannot) reduce financial fragility.

- Key words: information disclosure, market discipline, bank transparency, deposit insurance, financial safety net

### **Asymmetry and the Problem of Aggregation in the Euro Area**

11/2000

David G Mayes – Matti Virén

This paper highlights the implications for EU macro-economic policy at a relatively disaggregated level when key economic relationships are nonlinear or asymmetric. Using data for the EU and OECD countries we show that there are considerable nonlinearities and asymmetries in the Phillips and Okun curves. High unemployment has a relatively limited effect in pulling inflation down while low unemployment can be much more effective in driving it up. Downturns in the economy are both more rapid and sustained in driving unemployment up than recoveries are in bringing it down. There is considerable variety in these relationships and in IS curves across not just countries but also sectors and regions.

- Key words: aggregation, asymmetry, monetary policy, nonlinear models, Okun curve, Phillips curve

### **Agency Cost of Debt and Lending Market Competition: A Re-Examination**

Erkki Koskela – Rune Stenbacka  
12/2000

We address how lending market competition, measured by banks' bargaining power, affects the agency costs of debt finance. We show that the threshold for obtaining loan finance is independent of the relative bargaining power of the financier. Moreover, intensified lending market competition leads to lower lending rates and to investment return distributions with lower and less risky returns. Hence increased lending market competition reduces the agency cost of debt financing. Our analysis does not support the view that there is a tradeoff between more intensive lending market competition and higher agency costs of debt finance.

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- **Key words:** bank competition, agency cost of debt

### **Forecasting the Real US/DEM Exchange Rate: TAR vs. AR**

Biing-Shen Kuo – Anne Mikkola  
13/2000

The out-of-sample forecasting performances of two univariate time series presentations for the USD/DEM real exchange rate are compared using quarterly data for the period 1957Q1–1998Q4. The linear AR process is frequently fitted to real exchange rate series because it is sufficient for capturing the reported slow mean reversion in real exchange rates and it has some predictive ability for the long run. A simple nonlinear alternative, the threshold autoregressive (TAR) model, allows for the possibility that there is a band of slow or no convergence around the purchasing power parity level in the real exchange rate, due to transportation costs or other market frictions that create barriers to arbitrage. The TAR model is theoretically and empirically appealing, and it has been fitted to real exchange rates in many recent papers. However, the ultimate test of its usefulness is its out-of-sample forecasting accuracy. We compare the TAR model with its simple linear AR alternative in terms of out-of-sample forecast accuracy. Preliminary results using the RMSE criterion indicate that TAR forecasts are more sensitive to the estimation period and that they involve considerably more uncertainty at long horizons, as compared with the simple AR model.

- **Key words:** real exchange rate, TAR model, forecast accuracy

### **The Credit Channel of Monetary Policy and Housing Markets: International Empirical Evidence**

Matteo Iacoviello – Raoul Minetti  
14/2000

This paper tests for the presence of a credit channel (particularly a bank-lending sub-channel) for monetary policy in the housing market. We argue that the importance of this channel for investment in resi-

dential housing is highly dependent on the structural features, and particularly the efficiency and institutional organization, of housing finance. We employ a VAR methodology to analyse this issue with respect to the housing markets of four European countries (Finland, Germany, Norway and the United Kingdom), which differ greatly in terms of structural features. Our results are generally consistent with the existence of a broad credit channel, whereas the bank-lending channel seems to be operational only under certain conditions. More importantly, our results are consistent with previous analyses of housing market efficiency, which strongly suggests the existence of a clear relationship between the presence of a credit (bank lending) channel, the efficiency level of housing finance and the type of institutions that are active in mortgage provision.

- **Key words:** monetary transmission, bank lending channel, house prices, vector autoregressions

### **Recent Developments in the Finnish Banking Sector**

Atso Andersen – Ari Hyytinen – Jussi Snellman  
15/2000

In this paper we discuss recent developments in the Finnish banking sector. Our specific aim is to examine whether and to what extent recent developments in Finland are broadly in line with the trends common to banking sectors in Europe and also worldwide.

We focus on developments in banks' profit and loss accounts, balance sheets and the market structure of the banking sector. In addition, technological developments are surveyed. As regards consolidation, the Finnish banking sector is a trendsetter. The emphasis in structural development has moved to cross-border banking and bank assurance. It turns out that it is difficult to track some of the trends that are believed to characterize European banking sectors using Finnish data. For instance, disintermediation has so far been moderate in Finland, as the role of banks as providers of financing to households and companies is still significant and generally shows no signs of diminishing. Tougher competition in lending does not seem to have reduced Finnish banks'

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profitability, which was at a record high in 1999 and in the first half of 2000.

The Finnish banks have fully recovered from the banking crisis of the early 1990s. Improved profitability is largely due to enhanced efficiency as well as recent favourable economic performance. The banking sector experienced a rapid process of consolidation during the 1990s and currently banks are going through an intensive process of launching new technology-based products. It can be argued that as a result of developments in the 1990s the Finnish banking sector is among the most profitable and efficient in Europe.

■ **Key words:** banks, financial system, stability

### **Capital Structure, Wage Bargaining and Employment**

Erkki Koskela – Rune Stenbacka  
16/2000

We offer a unified framework for analysing the determination of employment, employee effort, wages, profit sharing and capital structure when firms face stochastic revenue shocks. We apply a generalized Nash bargaining solution, which extends the wage bargaining literature by incorporating efficiency wage considerations, profit-sharing and capital structure. The profit sharing instrument is shown to have positive effort-augmenting and wage-moderating effects, which exactly offset the negative dilution effect in equilibrium. Leverage is shown to reduce employment and to have a strategic commitment value as a wage-moderating mechanism for firms facing unions in bilateral wage negotiations. Finally, some implications for equilibrium unemployment are discussed.

■ **Key words:** wage bargaining, profit sharing, capital structure, employment

## **BOFIT Discussion Papers**

### **Sequential Reform Strategy: The Case of Azerbaijan**

Juhani Laurila – Rupinder Singh  
8/2000

The aim is to review transition literature for evidence that supports sequential reform strategy, as presented in this report. The second part discusses the findings in the context of Azerbaijan, a formerly socialist transition economy with interesting initial conditions. Evidence of the country's current need to focus on improving public services fits well with the sequential reform view.

The authors argue that constraints captured by initial conditions (human resources, administrative capacities, traditions, etc.) necessitate sequencing of reforms and outline general aspects of a sequential reform strategy designed to expedite the transition process. The literature survey supports the Washington Consensus recommendations for starting transition with macroeconomic reforms, but over time initial conditions inevitably constrain and necessitate sequencing. In other words, reform efforts initially need to be directed across the widest possible front, but later in transition the emphasis of reform efforts needs to shift from one area to another. In the later stages, emphasis needs to be laid on improvement of public sector governance to support and promote macroeconomic reforms and formation of a healthy corporate sector. Democratic institutions arise with economic growth generated by the corporate sector.

■ **Key words:** transition economics, sequencing, governance, macroeconomic reforms, structural reforms, private sector, democracy, Azerbaijan



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**Causes of Repressed Inflation in the Soviet Consumer Market: Retail Price Subsidies, the Siphoning Effect, and the Budget Deficit**

Byung-Yeon Kim  
9/2000

Using recently available Soviet material, this paper analyses the causes of repressed inflation in the Soviet consumer market during 1965-1989. We found that retail price subsidies, which rose from 4% of state budget expenditure in 1965 to 20% in the late 1980s, intensified consumer market disequilibrium. The provision of these subsidies had negative effects on the market by maintaining the purchasing power of households for consumer goods and by increasing the budget deficit. Furthermore, the demand of enterprises for consumer goods without legitimate permission tended to increase during 1965-1989.

■ **Key words:** repressed inflation, Soviet Union, retail price subsidies, siphoning effect, budget deficit

**A Model of Russia's "Virtual Economy"**

R.E. Ericson – B.W. Ickes  
10/2000

The Russian Economy has evolved into a hybrid form, a partially monetized quasi-market system that has been called the virtual economy. In the virtual economy, barter and non-monetary transactions play a key role in transferring value from productive activities to the loss-making sectors of the economy. We show how this transfer takes place, and how it can be consistent with the incentives of economic agents. We analyse a simple partial-equilibrium model of the virtual economy, and show how it might prove an obstacle to industrial restructuring and hence marketizing transition.

■ **Key words:** Russia, barter, restructuring, virtual economy

**Fiscal Explanations for Inflation: Any Evidence from Transition Economies?**

Tuomas Komulainen – Jukka Pirttilä  
11/2000

Recent arguments, motivated partly by the new fiscal theory of price level, suggest that fiscal deficits undermine price stability in transition economies. This paper addresses these claims by examining vector-autoregressive models of inflation for three crisis-ridden transition economies (Bulgaria, Romania and Russia). The results indicate that while fiscal deficits have increased inflation in Bulgaria to a certain extent, this has not been the case in Romania and Russia. Even in the Bulgarian case, the usual money aggregate has proven more influential for inflation than fiscal deficits. The analysis based on this method therefore suggests that monetary policy plays an influential role in inflation determination in these countries. In other words, inflationary financing of deficits, rather than deficits themselves, accounts for inflation.

■ **Key words:** fiscal policy, inflation, vector autoregressive models, transition economies

**Money Shocks in a Small Open Economy with Dollarization, Factor Price Rigidities, and Nontradeables**

Vadims Sarajevs  
12/2000

The impact of an unanticipated monetary shock in a small open economy with dollarization, factor price rigidities, and nontradeables is re-examined in an optimizing intertemporal general equilibrium model. The framework of an earlier study is extended to incorporate foreign real money balances into the representative agent's utility function and to account for the phenomenon of dollarization so characteristic of transition economies. The major finding is that in the event of small monetary shocks, the presence of dollarization does not alter the outcome that relates the sign of response of consumption, current account balance, and other macroeconomic variables to the difference between *intertemporal* and *intra*temporal elasticities of substitutions of the total consumption index. The solution also shows that the elasticity of

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intertemporal substitution of money services and the share of traded goods in total consumption – a proxy for openness of the economy – are the crucial parameters in determining the response and the possibility of overshooting of the model variables, with economic openness playing a stabilizing role for the economy in the event of monetary shocks.

■ **Key words:** new open-economy macro-economics, monetary shocks, dollarization, factor price rigidities, nontradeables, current account

### **Measuring Central Bank Independence in Selected Transition Countries and the Disinflation Process**

Sandra Dvorsky  
13/2000

The paper measures the degree of legal and actual central bank independence (CBI) in five Central and Eastern European transition economies striving for EU accession, namely the Czech Republic, Hungary, Poland, Slovakia and Slovenia (CEEC-5). The degree of legal CBI is measured by applying the two most widely used indices, the Cukierman and the Grilli-Masciandaro-Tabellini (GMT) indices. More-

over, the turnover rate of central bank governors is used as a proxy to measure actual CBI. The paper gives an interpretation of computed results, comparing the findings with those of other authors and earlier calculations. Furthermore, the indices on legal and actual CBI themselves are critically reviewed, in particular against the background of the Maastricht Treaty requirements, which in practice constitute the driving force for any amendment of central bank laws in the CEEC-5. Moreover, the role of CBI in bringing down inflation in the CEEC-5 at different stages of transition is briefly discussed. The paper concludes that the overall degree of legal CBI is comparatively high in all countries examined, while the measured turnover rates of governors do not seem to fully reflect the degree of actual CBI in the CEEC-5. Looking at the role of CBI in the disinflation process at different stages of transition, the main causes for inflation seem to have been beyond the direct control of the central bank. A high degree of CBI, together with a reasonable mix of fiscal and monetary policies as well as structural reforms, will be necessary for the CEEC-5 to meet all requirements for joining the EU and, in a more distant future, for adopting the euro.

■ **Key words:** transition economies, central bank independence, inflation

### 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 5,171,302 (31 December 1999) and an average population density of 17 per square kilometre. The largest towns are Helsinki (Helsingfors), the capital, with 551,123 inhabitants, Espoo (Esbo) 209,667, Tampere (Tammerfors) 193,174, Vantaa (Vanda) 176,386 and Turku (Åbo) 172,107.

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

### Form of government

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

The legislative power of the country is exercised by Parliament and the President of the Republic. The supreme executive power is vested in the President, who is elected for a period of six years. The President for the current term, 1 March 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 the municipal council are elected by universal suffrage for a period of four years.

### International relations

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

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

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

### The economy

**Output and employment.** Of the gross domestic product of FIM 623 (EUR 105) billion in basic values in 1999, 1.3% was generated in agriculture, hunting and fishing, 2.4% in forestry, 27.3% in industry, 5.7% in construction, 12.4% in trade, restaurants and hotels, 9.3% in transport and communications, 3.5% in finance and insurance, 17.6% in other private services and 20.5% by producers of government services. Of total employment of 2.2 million persons in 1999, 6.5% were engaged in primary production, 27.9% in industry and construction and 65.6% in services.

In 1999 expenditure on the gross domestic product in purchasers' values amounted to FIM 722 (EUR 121) billion and was distributed as follows: net exports 8.2% (exports 37.5%, imports -29.3%), gross fixed capital formation 19.1%, private consumption 50.4% and government consumption 21.5%. Finland's tax ratio (gross taxes including compulsory employment pension contributions relative to GDP) was 46.1%.

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 1999 was USD 25,056.

**Foreign trade.** EU countries absorb the bulk of Finnish merchandise exports. In 1995–1999 their average share was 55.9%. Over the same period, Finnish exports to other European countries (including Russia) accounted for 18.2% and to the rest of the world for 25.9%. During the same period the regional distribution of Finnish merchandise imports was quite similar to that of exports: EU countries accounted for 56.0%, other European countries for 16.8% and the rest of the world for 27.2%.

In 1999 the share of forest industry products in total merchandise exports was 29.4%, the share of metal and electrical products 53.2% and the share of other goods 17.4%. Raw materials and intermediate goods and energy together accounted for 49.8% of merchandise imports, capital goods for 25.8% and durable and non-durable consumer goods for 24.3%.

**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 beginning of 1999 Finland has participated in the single currency area, in accordance with the Treaty establishing the European Community. The conversion rate for the markka, as confirmed by the Council of the European Union on 31 December 1998, is 5.94573. With effect from the beginning of 1999 the currency unit used in Finland is the euro, which is divided into 100 cent. The markka will, however, remain as the national denomination of the euro until the year 2002, and during this time notes and coins denominated in markkaa will continue to be used.

**The Central Bank.** The two new laws adopted in 1997 and 1998 make Finnish legislation compatible with the requirements of the Treaty establishing the European Community and the Statute of the European System of

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

**Other banks** (31 October 2000). Finland has three major groups of deposit banks with a total of about 1,540 branches. In addition there are six smaller banks and banking groups. The commercial banks have a total of 17 foreign branches, subsidiaries and associate banks and 17 representative offices abroad. There are 40 savings banks, a group of cooperative banks (246) and 43 local cooperative banks. In addition, 8 foreign banks have branches and 5 foreign banks have representative offices in Finland.

**Financial markets.** The total stock of domestic credit amounted to FIM 751.0 (EUR 126.3) billion at end-June 2000 and was broken down by lender group as follows: deposit banks 55%; insurance companies 6%; pension insurance institutions 19%; other credit institutions 11%; central and local authorities and social security funds 9%.

In the money market, the total value of instruments outstanding was about FIM 142.1 (EUR 23.9) billion at end-September 2000; bank certificates of deposit accounted for 68% of the total and Treasury bills, commercial paper and local authority paper for the rest.

At end-December 1999 there were 104 companies on the Main List, 39 on the Investors' List and 8 on the NM List of the HEX, Helsinki Exchanges. At end-September 2000 total market capitalization was FIM 1,860.4 (EUR 312.9) billion for the Main List, FIM 9.5 (EUR 1.6) billion for the Investors' List and FIM 8.3 (EUR 1.4) billion for the NM List. Domestic bonds and debentures in circulation at end-September 2000 amounted to FIM 309.8 (EUR 52.1) billion; government bonds accounted for 80% of the total. Share turnover on the HEX, Helsinki Exchanges amounted to FIM 623.1 (EUR 104.8) billion in 1999. In January-September 2000 share turnover amounted to FIM 1,006.3 (EUR 169.3) billion.



# VISITING SCHOLARS PROGRAMME

## BANK OF FINLAND

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

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

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

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

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

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

Persons interested in applying are invited to send

- a brief research proposal concerning either of the two areas
- a CV specifying the applicant's academic and research background, with the names of two or three referees

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

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

## Balance sheet of the Bank of Finland, million EUR

Assets	25.8.	2000		24.11.
		29.9.	27.10.	
<b>1 Gold and gold receivables</b>	477	493	493	493
<b>2 Claims on non-euro area residents denominated in foreign currency</b>	8 300	8 736	8 601	8 684
2.1 Receivables from the IMF	878	777	749	734
2.2 Balances with banks and security investments, external loans and other external assets	7 422	7 959	7 852	7 950
<b>3 Claims on euro area residents denominated in foreign currency</b>	736	722	784	815
<b>4 Claims on non-euro area residents denominated in euro</b>	1 111	2 752	6 934	3 854
4.1 Balances with banks, security investments and loans	1 111	2 752	6 934	3 854
4.2 Claims arising from the credit facility under the ERM II	–	–	–	–
<b>5 Lending to financial sector counterparties in the euro area denominated in euro</b>	202	619	304	255
5.1 Main refinancing operations	187	615	240	190
5.2 Longer-term refinancing operations	11	–	61	61
5.3 Fine-tuning reverse operations	–	–	–	–
5.4 Structural reverse operations	–	–	–	–
5.5 Marginal lending facility	–	–	–	–
5.6 Credits related to margin calls	–	–	–	–
5.7 Other claims	3	4	4	4
<b>6 Securities of euro area residents denominated in euro</b>	–	–	–	–
<b>7 General government debt denominated in euro</b>	–	–	–	–
<b>8 Intra-Eurosystem claims</b>	2 489	795	2 853	2 228
8.1 Share in ECB capital	70	70	70	70
8.2 Claims equivalent to the transfer of foreign currency reserves	699	699	699	699
8.3 Claims related to the issuance of ECB debt certificates	–	–	–	–
8.4 Other claims within the Eurosystem (net)	1 721	27	2 084	1 460
<b>9 Other assets</b>	618	665	654	632
<b>Total assets</b>	13 932	14 783	20 623	16 961

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

Liabilities	2000			
	25.8.	29.9.	27.10.	24.11.
<b>1 Banknotes in circulation</b>	2 750	2 731	2 704	2 682
<b>2 Liabilities to euro area financial sector counterparties denominated in euro</b>	1 192	1 848	1 584	1 187
2.1 Current accounts (covering the minimum reserve system)	1 192	1 848	1 584	1 187
2.2 Deposit facility	–	–	–	–
2.3 Fixed-term deposits	–	–	–	–
2.4 Fine-tuning reverse operations	–	–	–	–
2.5 Deposits related to margin calls	–	–	–	–
<b>3 Liabilities to other euro area residents denominated in euro</b>	3	1	1	1
3.1 General government	–	–	–	–
3.2 Other liabilities	3	1	1	1
<b>4 Liabilities to non-euro area residents denominated in euro</b>	4 459	4 170	10 404	7 047
<b>5 Liabilities to euro area residents denominated in foreign currency</b>	–	–	–	–
<b>6 Liabilities to non-euro area residents denominated in foreign currency</b>	210	263	147	172
6.1 Deposits, balances and other liabilities	210	263	147	172
6.2 Liabilities arising from the credit facility under the ERM II	–	–	–	–
<b>7 Counterpart of special drawing rights allocated by the IMF</b>	204	211	211	211
<b>8 Intra-Eurosystem liabilities</b>	–	–	–	–
8.1 Liabilities related to promissory notes backing the issuance of ECB debt certificates	–	–	–	–
8.2 Other liabilities within the Eurosystem (net)	–	–	–	–
<b>9 Other liabilities</b>	399	523	535	624
<b>10 Revaluation account</b>	1 240	1 561	1 561	1 561
<b>11 Capital and reserves</b>	3 475	3 475	3 475	3 475
<b>Total liabilities</b>	13 932	14 783	20 623	16 961

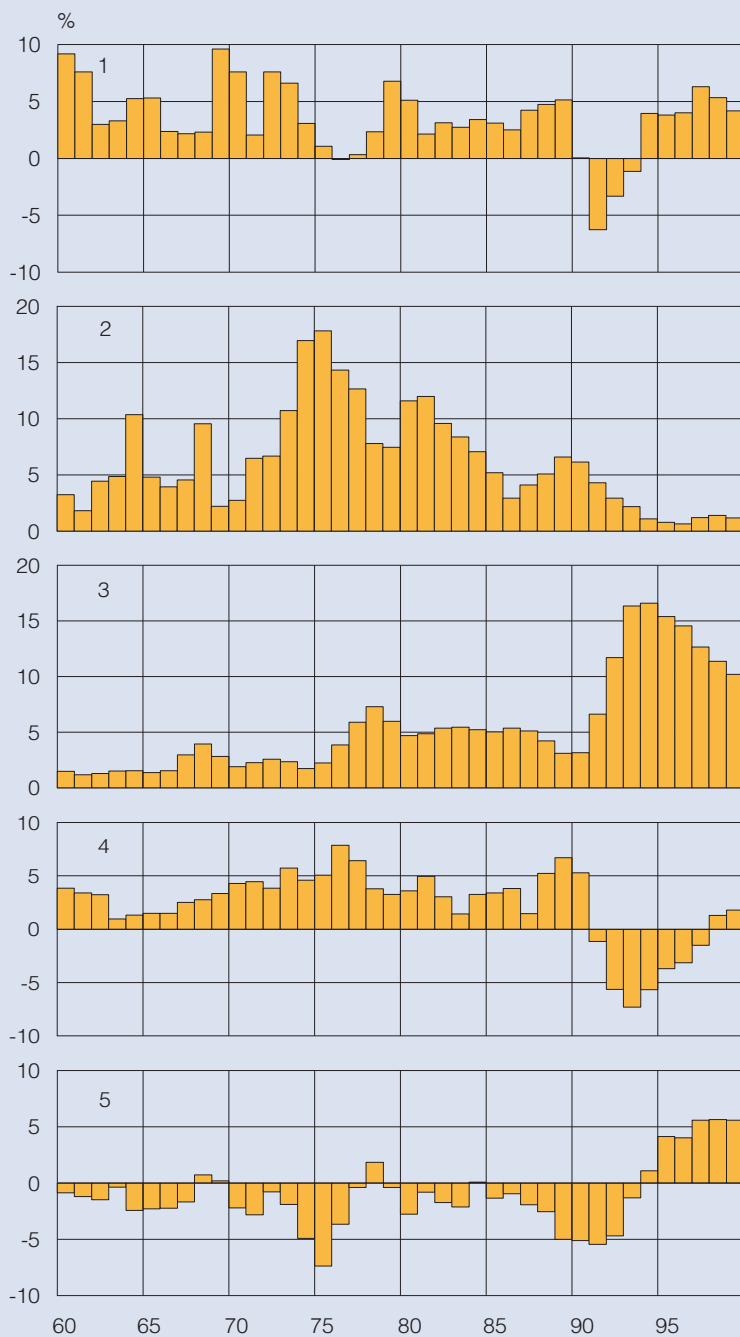
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1. Finland: key economic indicators
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3. Monetary aggregates for the euro area
4. Growth of the money stock in the euro area and Finland
5. Eurosystem interest rates and money market rates
6. Eurosystem (Bank of Finland) interest rates
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57. Level of industrial earnings in the euro area and Finland
58. Selected asset prices in Finland



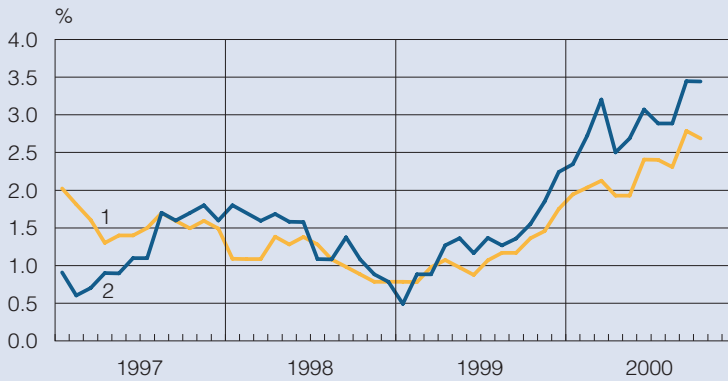
## 1. Finland: key economic indicators



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

Sources:  
 Statistics Finland and  
 Bank of Finland.

## 2. Price stability in the euro area and Finland

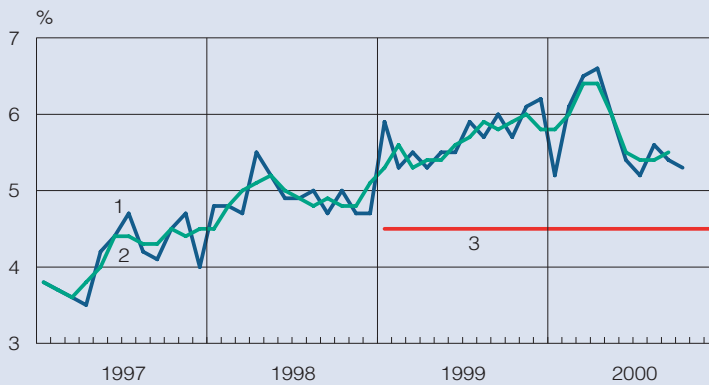


Harmonized Index of Consumer Prices,  
12-month percentage change

1. Euro area countries
2. Finland

Sources:  
Eurostat and Statistics Finland.

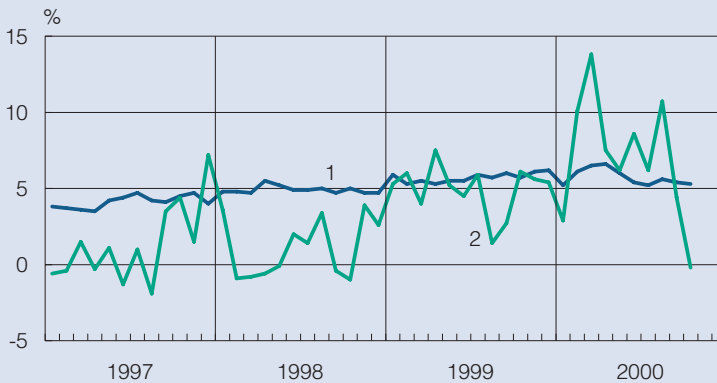
## 3. Monetary aggregates for the euro area



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

Source:  
European Central Bank.

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

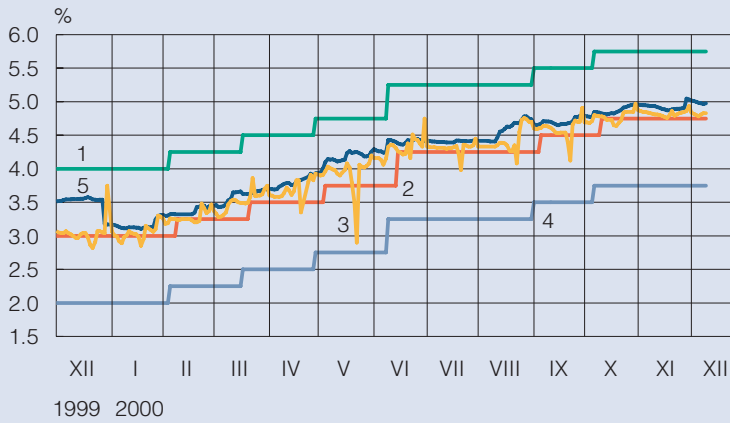


12-month percentage change

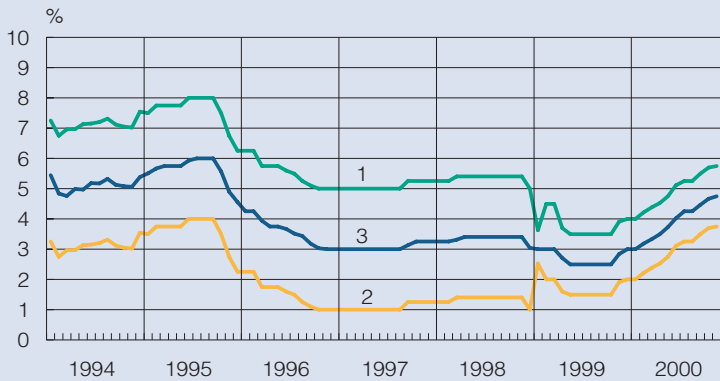
1. M3 for the euro area
2. Deposits and other liabilities of Finnish monetary financial institutions included in M3

Sources:  
European Central Bank and  
Bank of Finland.

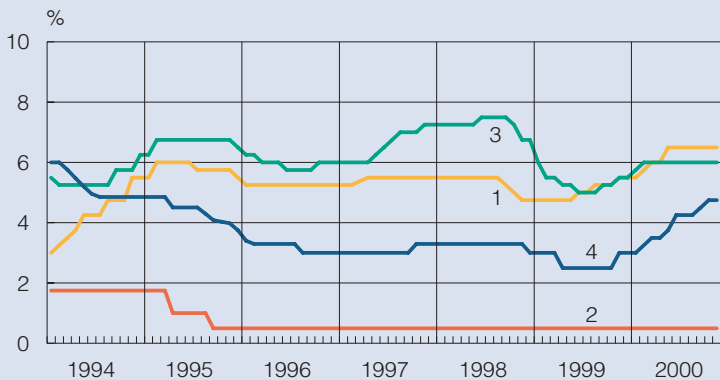
## 5. Eurosystem interest rates and money market rates



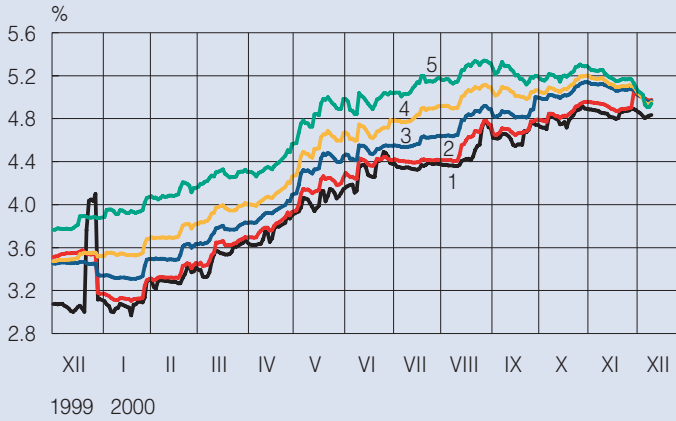
## 6. Eurosystem (Bank of Finland) interest rates



## 7. Official interest rates



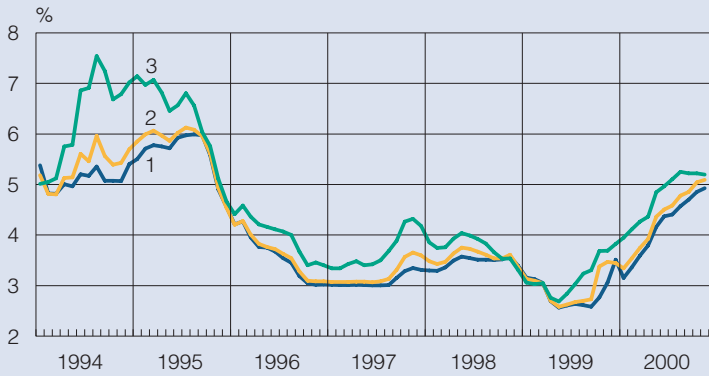
### 8. Euribor rates, daily values



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

Source: Reuters.

### 9. Euribor rates, monthly values

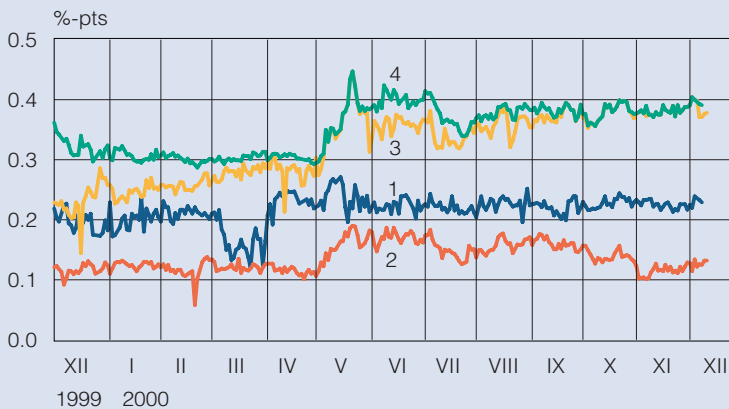


Helibor rates until end-1998

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

Source: Reuters.

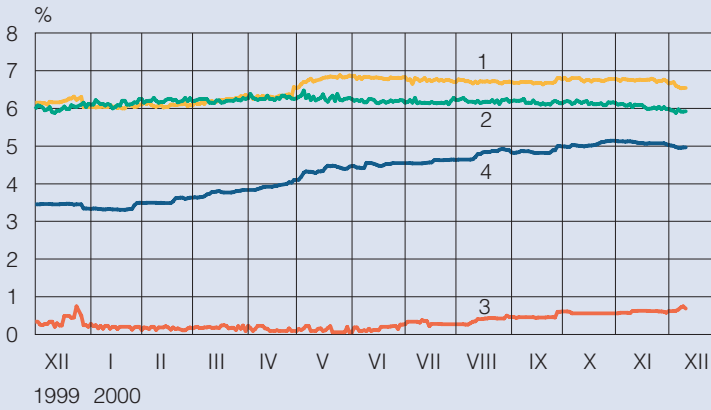
### 10. Differentials between ten-year yields for Germany and selected euro area countries



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

Source: Reuters.

### 11. International three-month interest rates, daily values

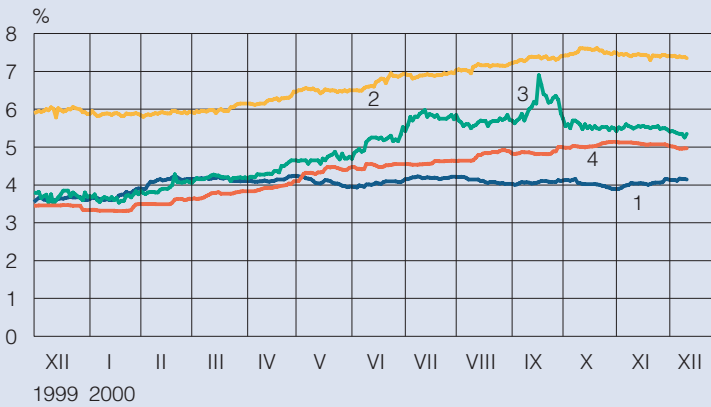


Interbank rates

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

Source: Reuters.

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

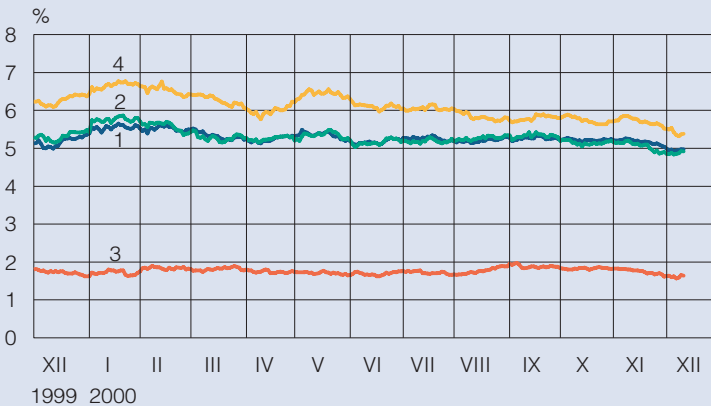


Interbank rates

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

Source: Reuters.

### 13. International long-term interest rates, daily values

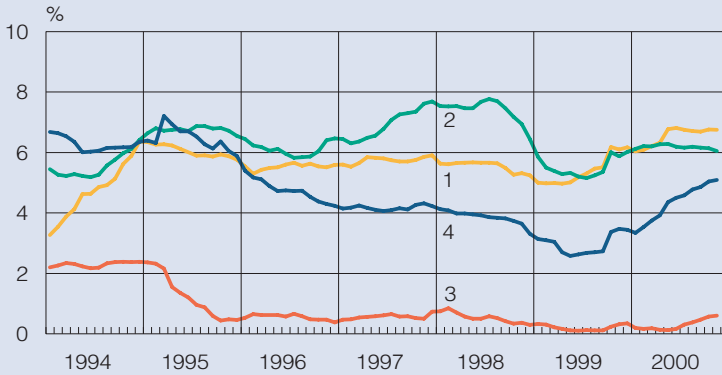


Yields on ten-year government bonds

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

Source: Reuters.

#### 14. International three-month interest rates, monthly values

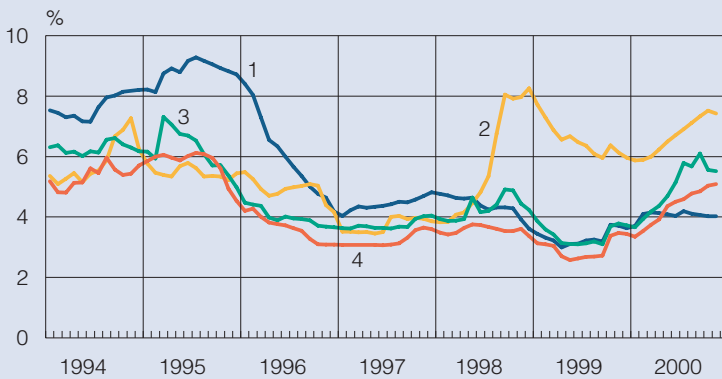


Interbank rates

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

Source: Reuters.

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

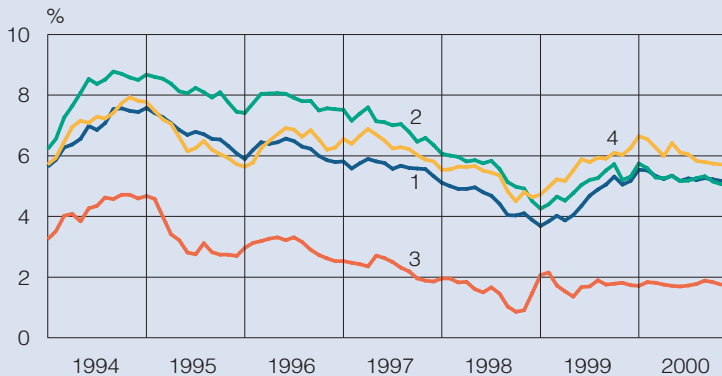


Interbank rates

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

Source: Reuters.

#### 16. International long-term interest rates, monthly values

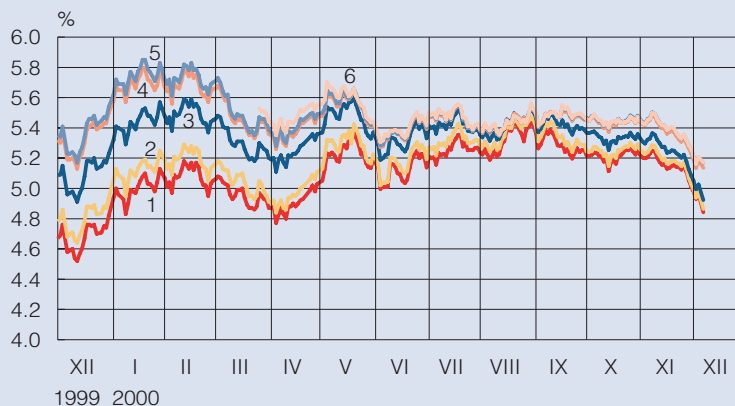


Yields on ten-year government bonds

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

Source: Reuters.

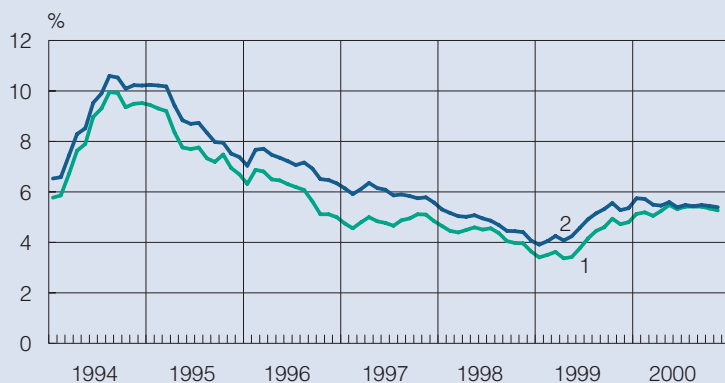
## 17. Yields on Finnish benchmark government bonds



1. Bond maturing on 12 November 2003, 3.75%
2. Bond maturing on 15 March 2004, 9.5%
3. Bond maturing on 18 April 2006, 7.25%
4. Bond maturing on 25 April 2008, 6%
5. Bond maturing on 25 April 2009, 5%
6. Bond maturing on 2 February 2011, 5.75%

Source: Reuters.

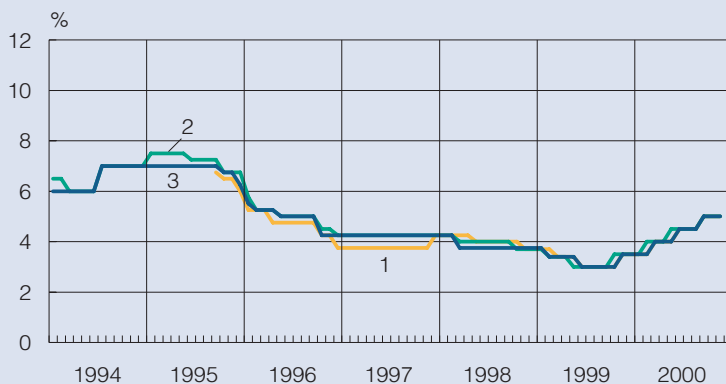
## 18. Yields on five and ten-year Finnish government bonds



1. 5 years
2. 10 years

Source: Reuters.

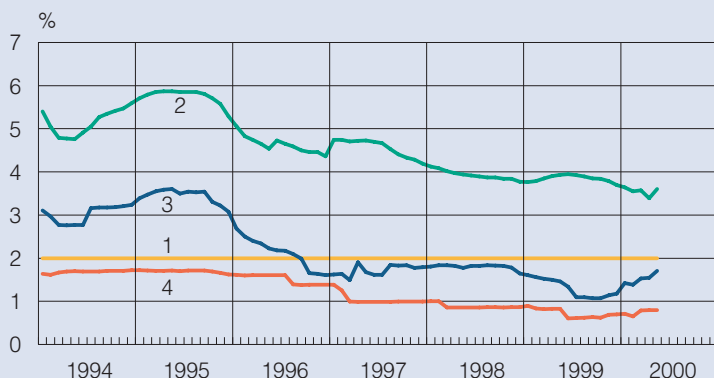
## 19. Bank reference rates in Finland



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

Source: Banks.

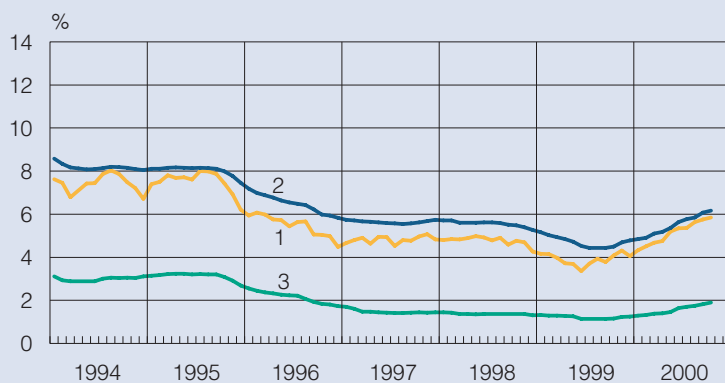
## 20. Bank deposit rates in Finland



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

Source: Bank of Finland.

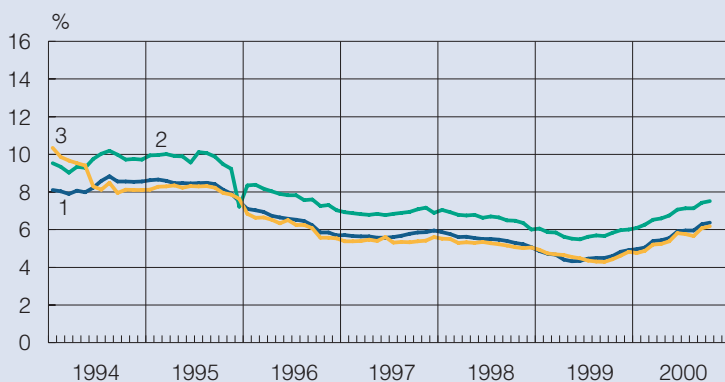
## 21. Bank lending and deposit rates in Finland



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

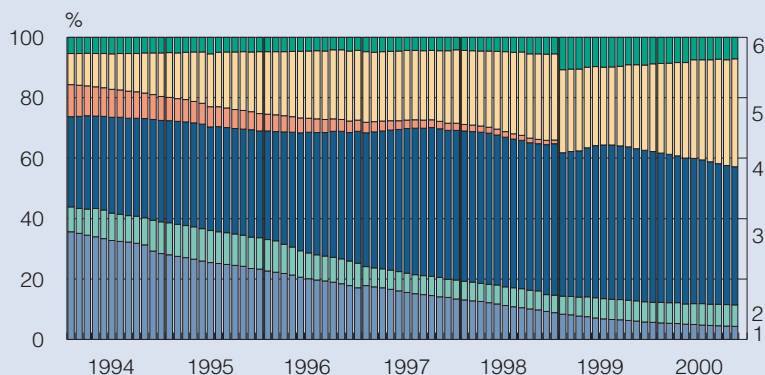


1. New housing loans
2. New consumer credits
3. New study loans

Source: Bank of Finland.



### 23. Stock of bank lending in Finland

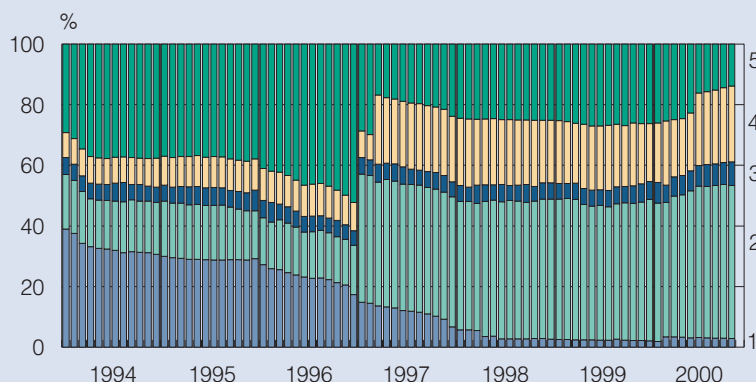


Interest rate linkages, percentages

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

Source: Bank of Finland.

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

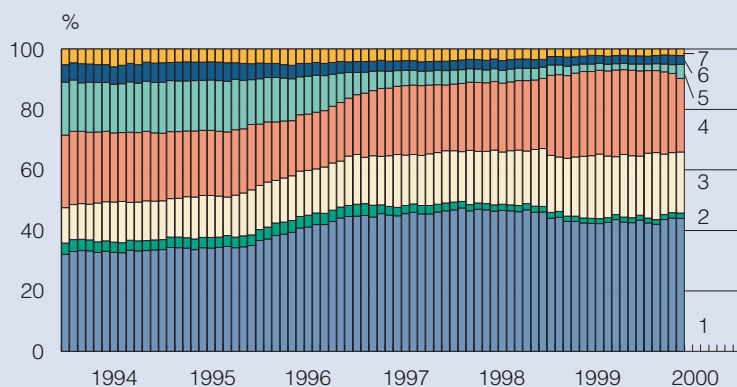


Interest rate linkages, percentages

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

Source: Bank of Finland.

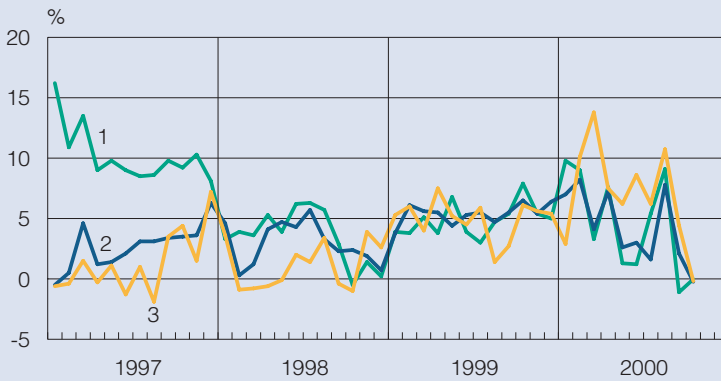
### 25. Stock of bank deposits in Finland by tax treatment



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

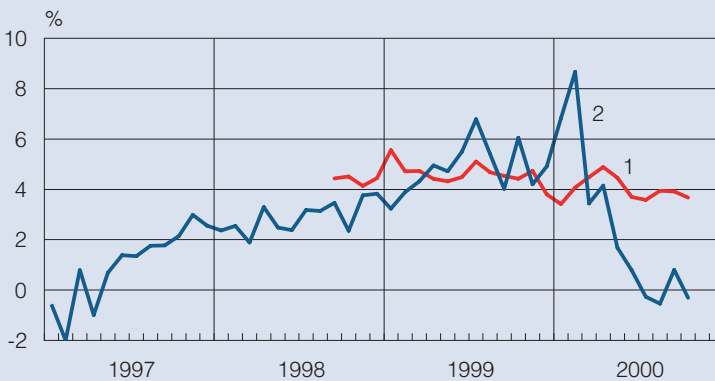


12-month percentage change

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

Source: Bank of Finland.

## 27. Euro area and Finnish banks: growth of deposits

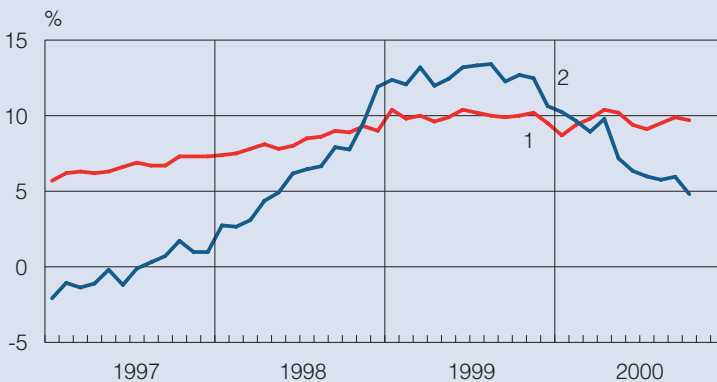


12-month percentage change

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

Sources:  
European Central Bank and  
Bank of Finland.

## 28. Euro area and Finnish banks: growth of lending



12-month percentage change

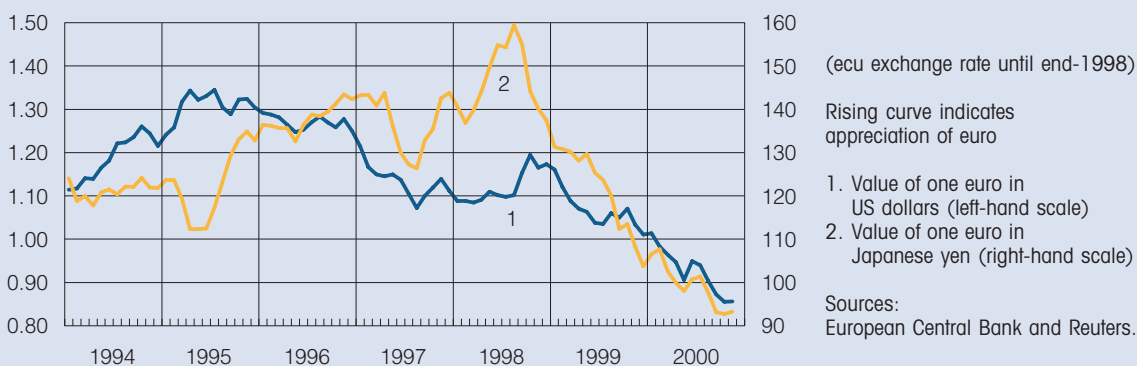
1. Lending by euro area banks to euro area residents
2. Lending by Finnish banks to Finnish residents

Sources:  
European Central Bank and  
Bank of Finland.

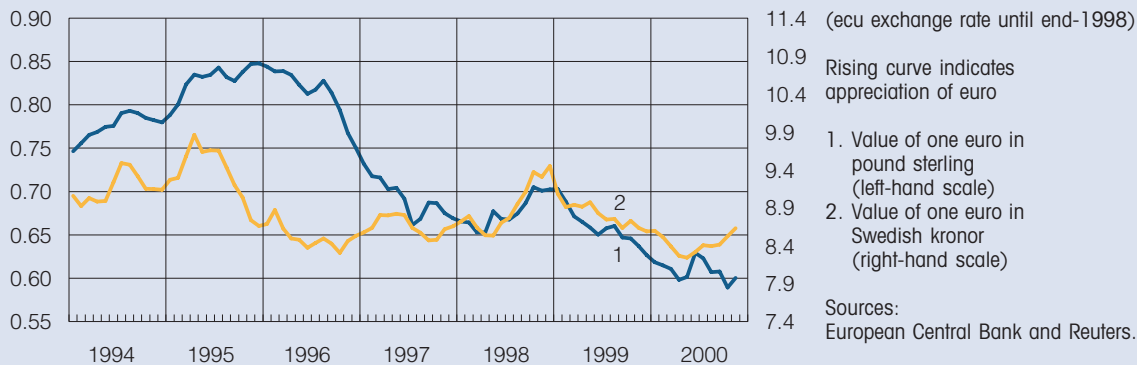
### 29. Euro exchange rates against the US dollar and the yen, daily values



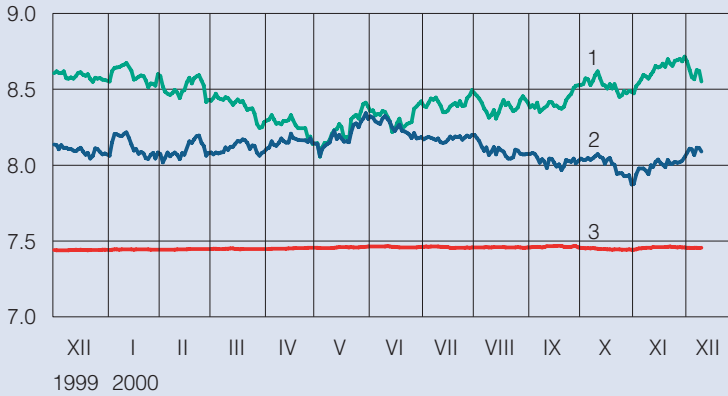
### 30. Euro exchange rates against the US dollar and the yen, monthly values



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



### 32. Euro exchange rates against the Scandinavian currencies

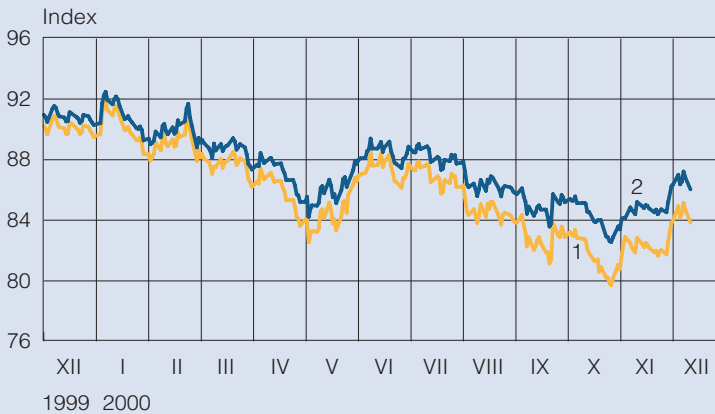


Rising curve indicates appreciation of euro

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

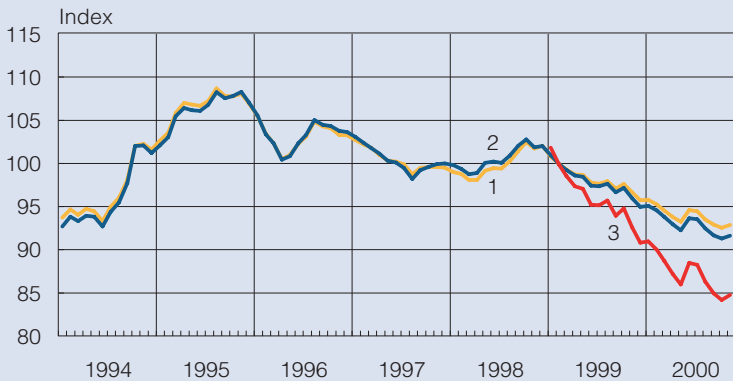


1999 Q1 = 100  
An upward movement of the index represents an appreciation of the euro / a weakening in Finnish competitiveness

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

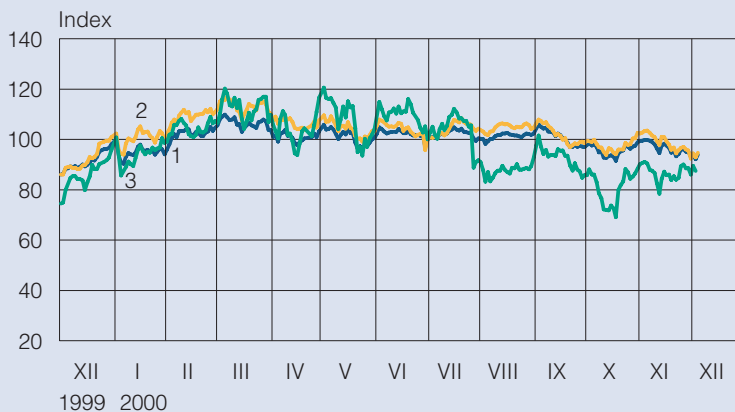


1999 Q1 = 100  
An upward movement of the index represents a weakening in Finnish competitiveness

1. Bank of Finland's old currency index
2. Narrow plus euro area competitiveness indicator
3. Narrow competitiveness index

Source: Bank of Finland.

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

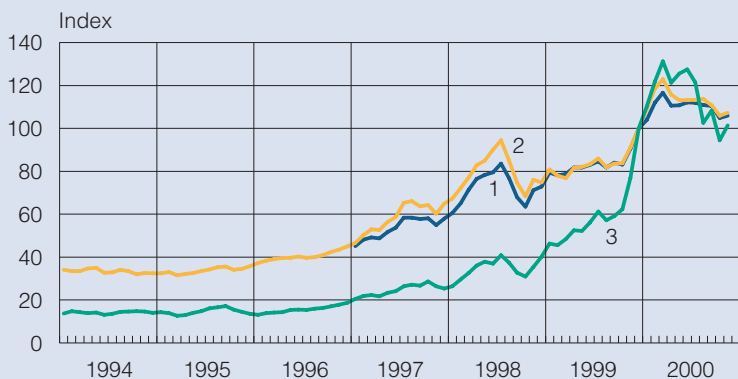


30 December 1999 = 100

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

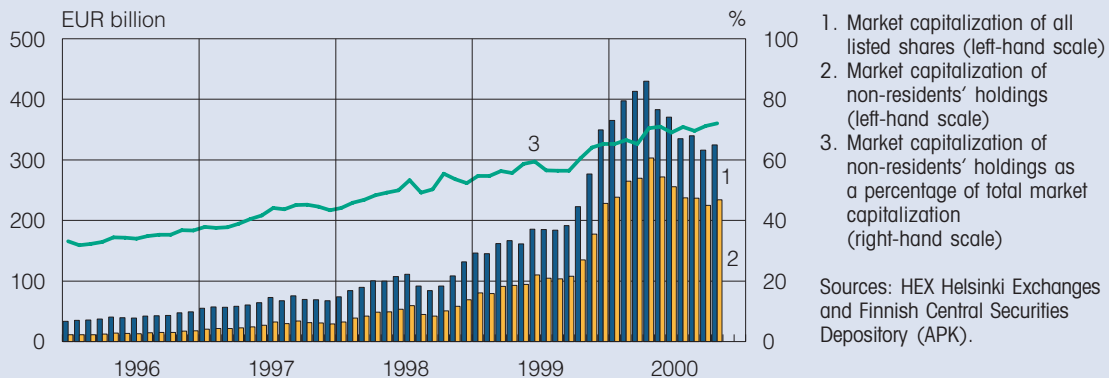


30 December 1999 = 100

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

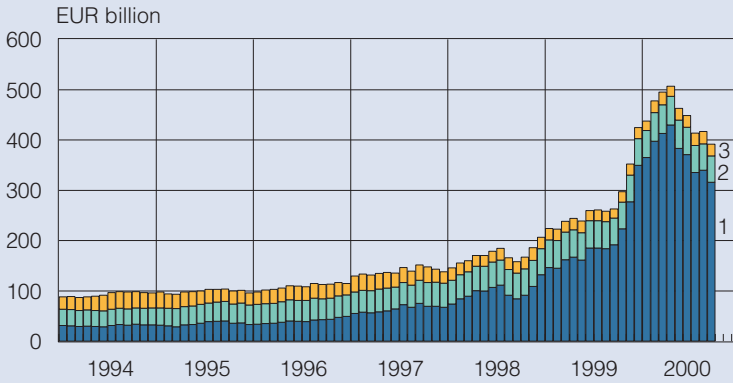
Sources: Bloomberg and  
HEX Helsinki Exchanges.

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



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

### 38. Securities issued in Finland

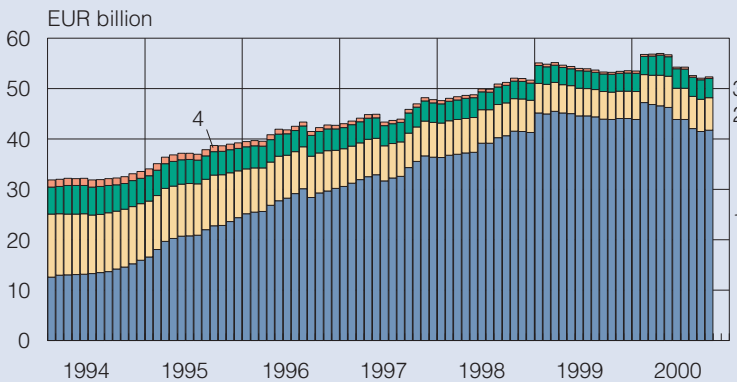


End-month stock

1. Market capitalization 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

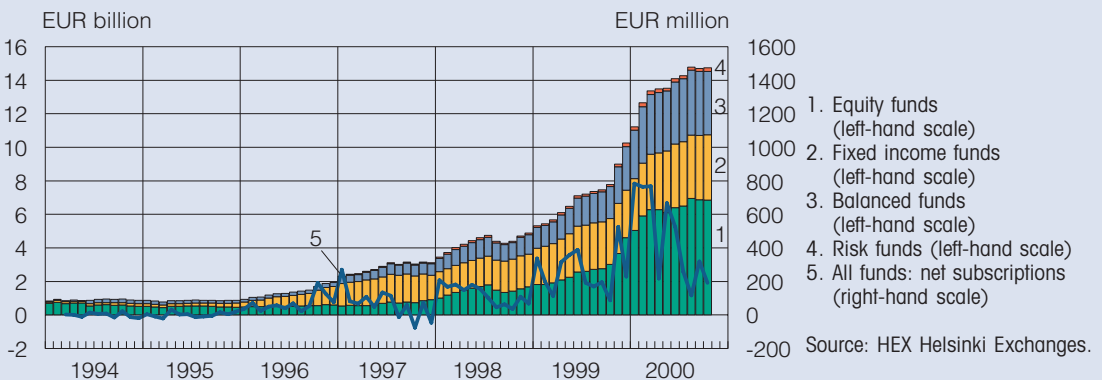


End-month stock

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

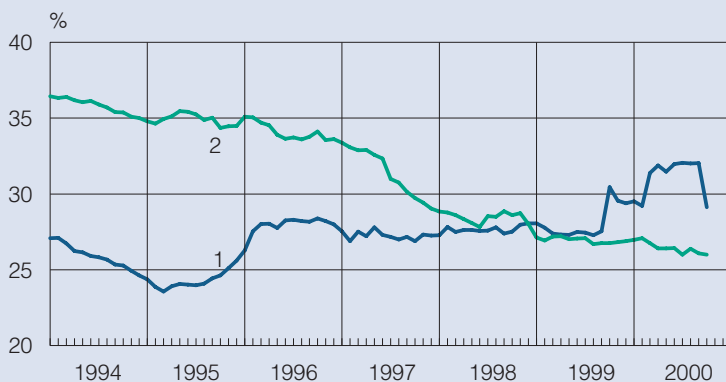
Source: Statistics Finland.

### 40. Mutual funds registered in Finland



Source: HEX Helsinki Exchanges.

#### 41. Central government revenue and expenditure in Finland

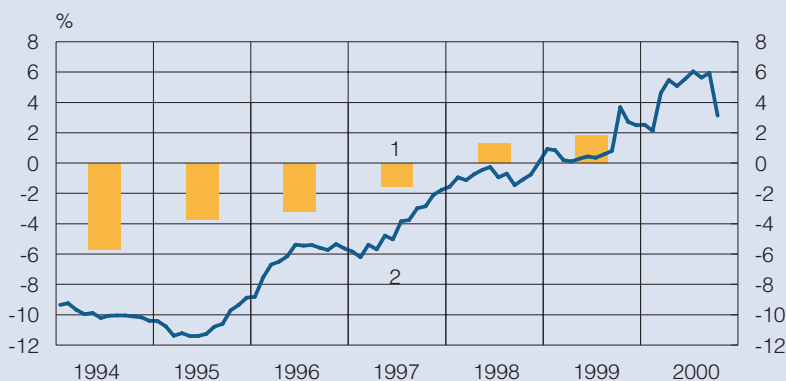


Excluding financial transactions  
12-month moving totals, % of GDP

1. Revenue
2. Expenditure

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

#### 42. Public sector balances in Finland

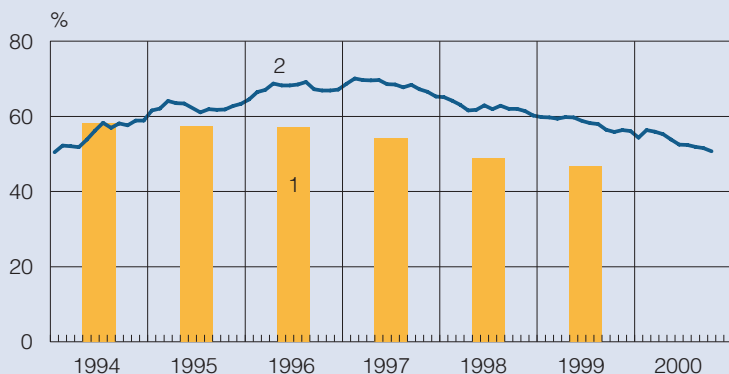


% of GDP

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

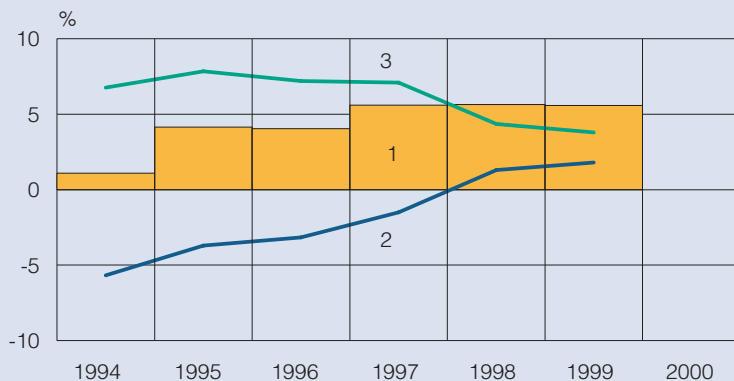


% of GDP

1. General government debt
2. Central government debt

Sources: Statistics Finland and  
State Treasury.

#### 44. Net lending in Finland by sector

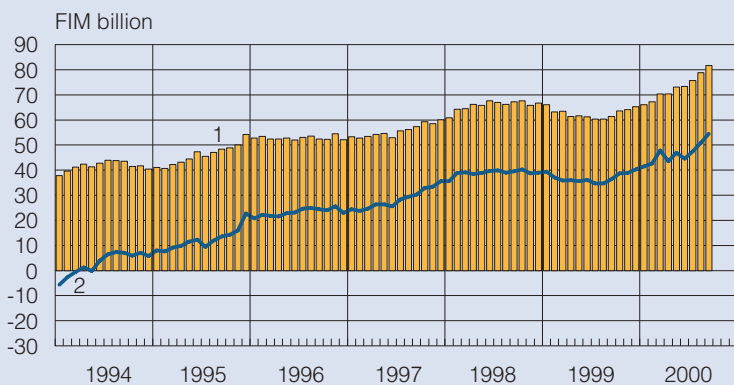


Main sectoral financial balances, % of GDP

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

Sources: Bank of Finland and Statistics Finland.

#### 45. Finland: goods account and current account

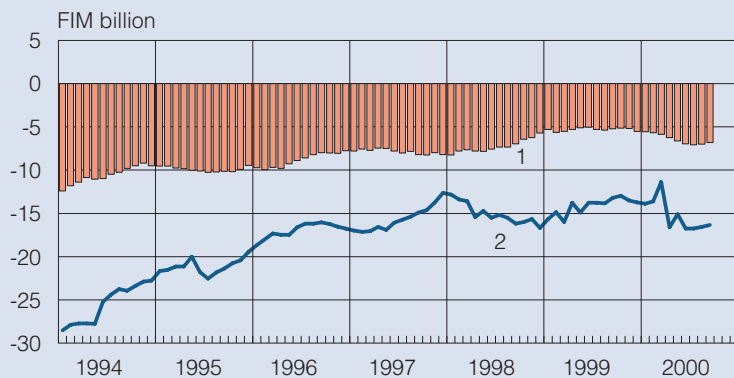


12-month moving totals

1. Goods account, fob
2. Current account

Source: Bank of Finland.

#### 46. Finland: services account and income account



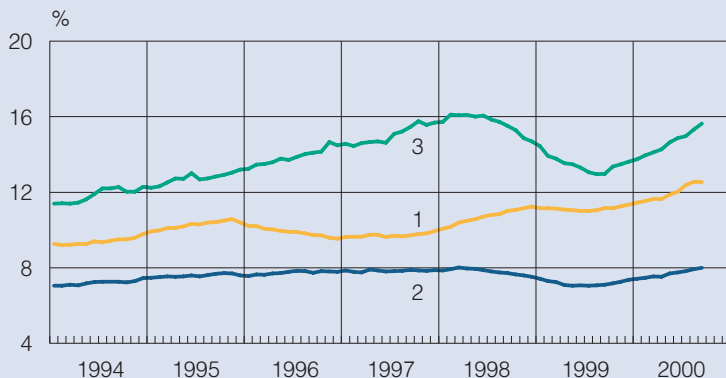
12-month moving totals

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

Source: Bank of Finland.



#### 47. Regional distribution of Finnish exports

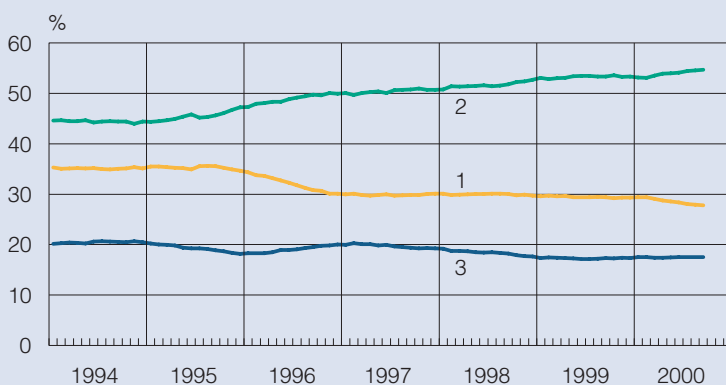


12-month moving totals,  
% of GDP

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

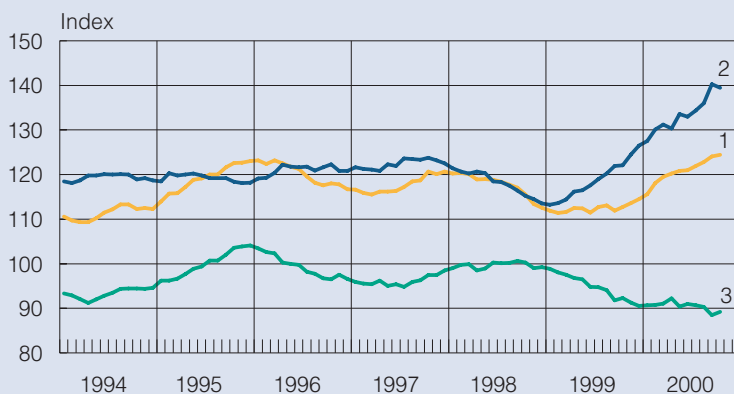


12-month moving totals,  
percentage of total exports

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

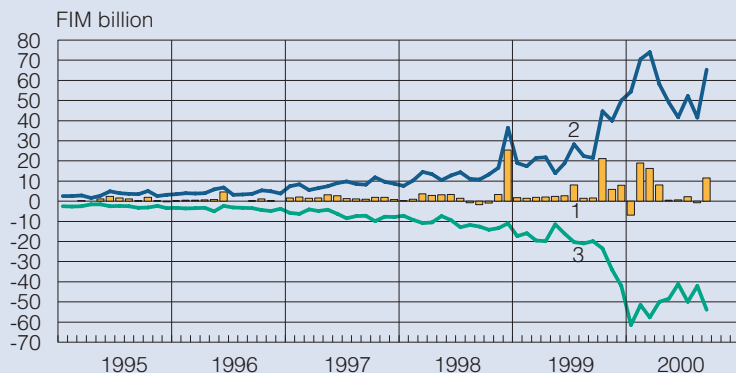


1990 = 100

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

Source: Statistics Finland.

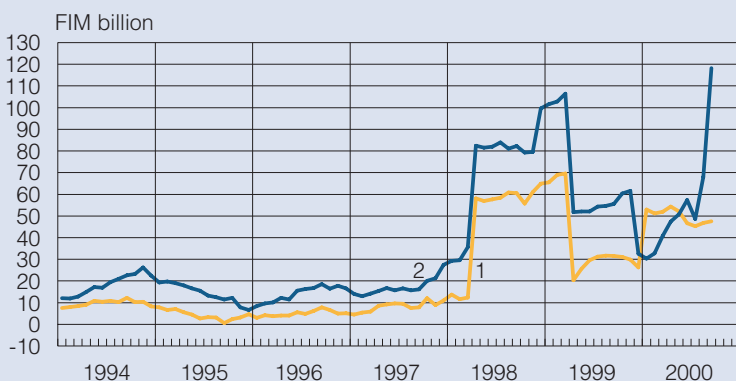
## 50. Non-residents' portfolio investment in Finnish shares



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

Source: Bank of Finland.

## 51. Finland: direct investment

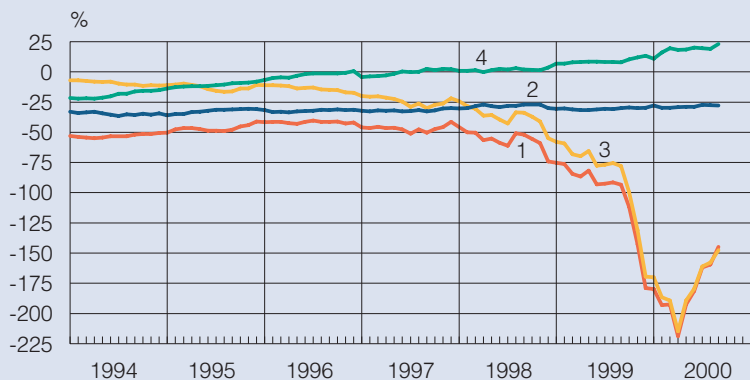


12-month moving totals

1. In Finland
2. Abroad

Source: Bank of Finland.

## 52. Finland's net international investment position

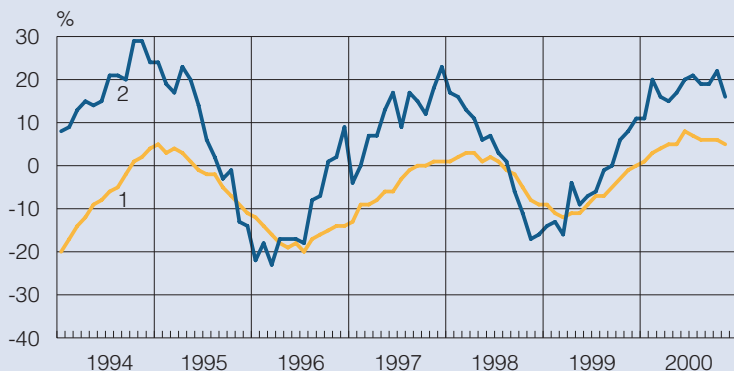


% of GDP

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.

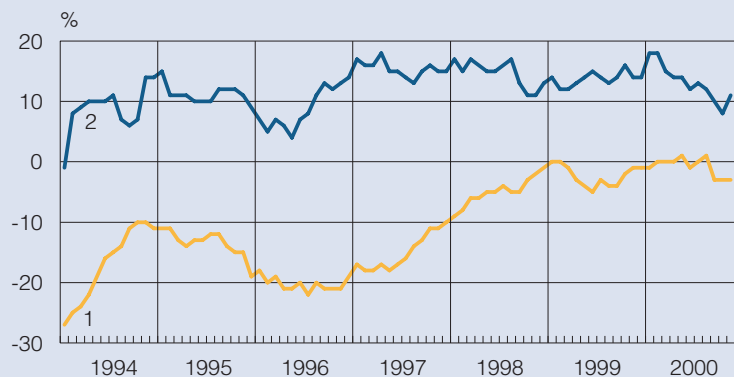
### 53. Industrial confidence indicator in the euro area and Finland



- 1. Euro area countries
- 2. Finland

Source: European Commission.

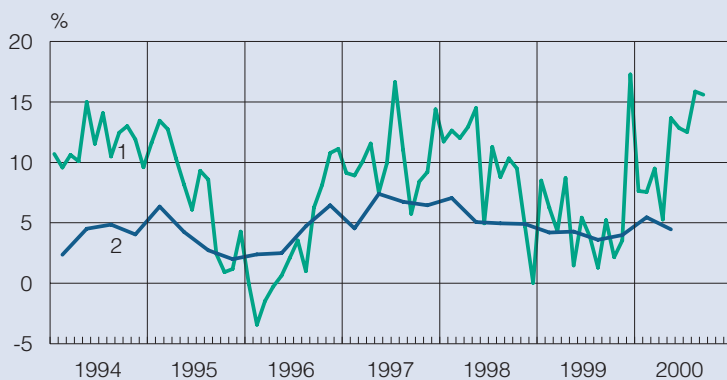
### 54. Consumer confidence indicator in the euro area and Finland



- 1. Euro area countries
- 2. Finland

Source: European Commission.

### 55. Finland: GDP and industrial production

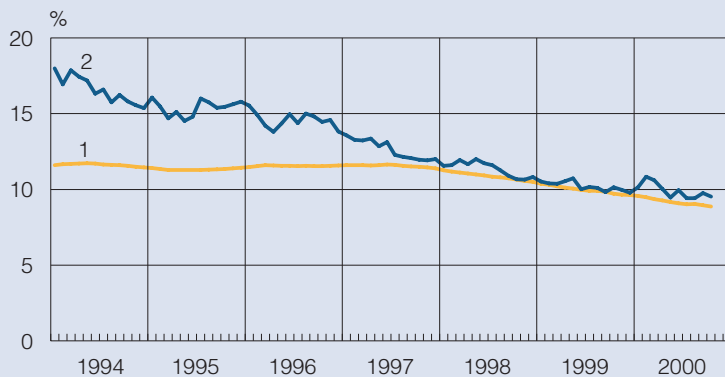


Percentage change from previous year

- 1. Industrial production
- 2. Gross domestic product

Source: Statistics Finland.

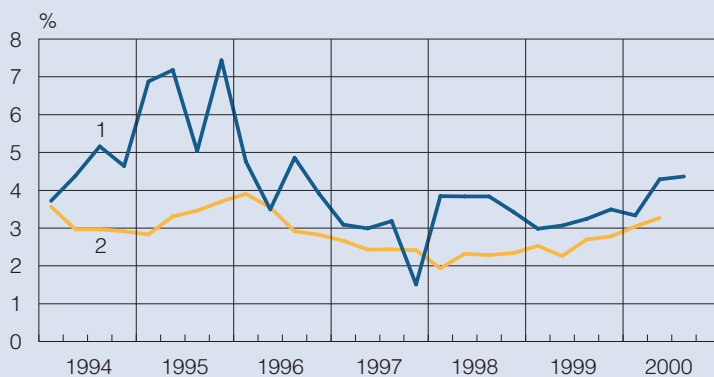
## 56. Unemployment rate in the euro area and Finland



- 1. Euro area countries
- 2. Finland

Sources: Eurostat, Statistics Finland and Bank of Finland.

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

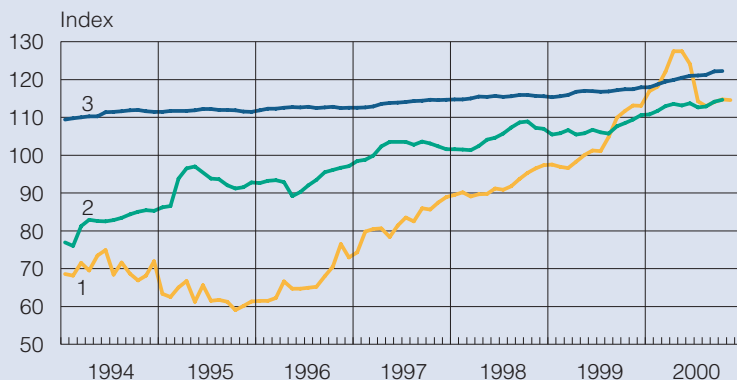


Percentage change from previous year

- 1. Euro area countries
- 2. Finland

Sources: Eurostat and Statistics Finland.

## 58. Selected asset prices in Finland



January 1990 = 100

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

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

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## Articles and Items

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#### **Current situation in the Finnish housing market**

by Mikko Spolander

#### **The value of publishing official central bank forecasts**

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#### **The new competitiveness indicators compiled by the Bank of Finland**

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Presidential elections – Tarja Halonen becomes Finland's new president

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#### **The Bank of Finland's macroeconomic forecast**

#### **Financial stability in Finland**

#### **Better-informed wage setters**

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#### **Unemployment, labour markets and EMU**

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#### **Retail payments in Finland: changes in the 1990s**

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Commemorative coin for the church  
Commemorative coin for Helsinki

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by Helvi Kinnunen

#### **Labour supply and income taxation**

by Mika Kuismanen

Sinikka Salo appointed to the Board of the Bank of Finland  
Commemorative coin for Aleksis Kivi and Finnish literature

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# Organization of the Bank of Finland

20 December 2000

## Parliamentary Supervisory Council

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

Anton Mäkelä, Secretary to the Parliamentary Supervisory Council

---

## The Board

**Matti Vanhala**  
Governor

**Matti Louekoski**  
Deputy Governor  
(effective 1 January 2001)

**Sinikka Salo**  
Member of the Board

Heikki T. Hämäläinen, Secretary to the Board

---

## Departments and other units

**Pentti Pikkarainen**  
Economics  
Antti Suvanto\*

**Heikki Koskenkylä**  
Financial Markets  
Harry Leinonen\*

**Juha Tarkka**  
Research  
David Mayes\*

**Markus Fogelholm**  
Market Operations

**Raimo Hyvärinen**  
Payments and Settlement

**Martti Lehtonen**  
Statistics

**Antti Juusela**  
Communications

**Urpo Levo**  
Payment Instruments

**Esa Ojanen**  
Administration

**Kjell Peter Söderlund**  
International Secretariat

**Hannu Karppinen, ad int.**  
Legal Affairs

**Antero Arimo**  
Publication and  
Language Services

**Taina Kivelä**  
Internal Audit

**Arno Lindgren, ad int.**  
Personnel  
Anton Mäkelä\*

**Armi Westin**  
Information Technology

**Heikki T. Hämäläinen**  
Management  
Secretarial Staff

**Terhi Kivilahti**  
Development and Budget

**Jyrki Ahvonen**  
Security

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**Pekka Sutela**  
Institute for  
Economies in Transition

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\* Adviser to the Board

Branch offices: Kuopio, Oulu, Tampere, Turku

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