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# BANK OF FINLAND

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# BULLETIN

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2001 • Vol. 75 No. 4



- The Bank of Finland's macroeconomic forecast 2001–2003
  - Financial stability in Finland
  - Public finances and fiscal policy choices
  - Price stability with changing prices
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## The Bank of Finland's macroeconomic forecast 2001–2003

**F**innish GDP growth is still slow due to sluggish export and investment activity. For the euro area as a whole, the benign inflation outlook has enabled an easing of monetary policy. Recovery of the world economy from recession would position the Finnish economy for a return to a path of robust export-led growth.

In Finland the finances of both the private and general government sectors have strengthened in recent years, which will provide a buffer against recession. However, the slowing of growth is exacerbating unemployment, which is still high by European standards.

### World economy in recession – recovery expected in 2002

Short-term prospects for the growth of the world economy are poor, and a recovery is not expected until around mid 2002. According to forecasts of international organisations, world GDP is expected to grow at 2% pa in 2001 and 2002 and to return to its longer-term 4% growth path in 2003. The outlook for the world economy was weak already before the September terrorist attack on the United States. The attack has continued to have some effect on the near-term outlook, as it dampens US and worldwide economic growth.

Estimates of US economic growth have been repeatedly revised downward, and it is generally expected that annual growth of US GDP will be only around 1%, or even lower, in 2001 and 2002. It is now received wisdom that the US economy is in a recession. Expectations of a recovery of the Japanese economy from its protracted depression have faded, and it is felt that recovery is not yet in the offing. Economic growth has also slowed sharply in other Asian countries, especially those dependent on exports to the United States, and Latin American coun-

tries, especially Argentina, have encountered difficulties. In the November revisions of international organisations' forecasts, euro area output growth is lowered to 1.5% on average for 2001 and 2002. This means that the euro area has been in a near-recession during the second half of 2001. Besides the growth slowdown, the second half of year 2001 has seen a deceleration of inflation in both the United States and the euro area, and falling commodity and producer prices signal further moderating of inflation.

Demand for euro area exports, especially Finnish exports, has flagged as a result of a pronounced slowing of growth of world trade. Both volumes and prices of exports have declined. Changes in the US economy quickly impact the world economy and euro area via the financial markets and incomes, production and investment of multinational companies. One reason that the euro has remained weak against the dollar is the dimming of growth prospects for the euro area. The slowing of growth in the euro area and the halt in the decline in unemployment derive not only from external factors but also from internal structural problems. As regards Finland, the recession is export-based, and the economy is expected to begin a gradual recovery at the start of 2002, as growth resumes in the export markets. For Finland too, the economy's functionality and flexibility will determine how much support the domestic markets can provide over the course of the export recession.

Observations from the last quarter of 2001 and survey data on near-term plans of companies and households in the United States and euro area, as well as in Finland, continue to signal faltering economic performance. On the basis of several euro area indicators, exports are not expected to pick up in the final months of this year, nor is an upturn expected in private investment. On the other hand, private consumption will continue to grow, albeit more slowly in both the euro area and United States. Share prices

**Table 1. Forecast summary****Demand and supply 1999–2003 (1995 prices)**

	1999	2000	2001f	2002f	2003f
<b>%-change on year earlier</b>					
Gross domestic product	4.0	5.7	0.4	1.3	3.1
Imports	4.0	15.7	-1.9	1.8	7.6
Exports	6.8	18.1	-3.0	1.0	7.7
Private consumption	4.0	3.0	1.8	2.1	2.3
Public consumption	1.9	0.7	1.6	2.4	2.1
Private fixed investment	3.9	7.4	2.7	0.3	3.6
Public investment	-2.2	-5.4	0.2	1.8	4.4
Inventory change plus statistical discrepancy, % of year-earlier total demand	-0.4	0.2	-0.3	-0.1	-0.1
Total demand	4.0	8.1	-0.2	1.4	4.3
Final domestic demand	2.7	3.3	1.4	1.6	2.4

**Key economic indicators**

	1999	2000	2001f	2002f	2003f
<b>%-change</b>					
Harmonised index of consumer prices	1.3	3.0	2.6	1.5	1.5
Consumer price index	1.2	3.4	2.7	1.5	1.6
Level of earnings	2.7	4.1	4.6	3.1	3.6
Labour productivity	1.5	4.8	0.3	1.1	2.6
Unit labour costs	0.6	-0.2	6.2	1.9	1.5
Number of employed	3.3	1.7	1.1	-0.7	0.6
Employment rate, 15–64 year-olds, %	66.0	66.9	67.7	67.1	67.5
Unemployment rate, %	10.2	9.8	9.2	9.8	9.7
Export prices of goods and services	-5.1	4.6	-0.6	-0.7	1.0
Terms of trade	-3.8	-2.0	1.3	-1.6	-1.0

**% of GDP (national accounts)**

Ratio of taxes to GDP	46.2	46.9	45.3	44.4	44.1
General government net lending	1.9	6.9	4.5	2.6	2.8
General government debt (Maastricht definition)	47.3	44.0	41.8	41.5	39.8
Goods account	9.5	11.3	10.5	9.7	9.9
Current account	6.0	7.4	6.6	6.0	6.0
Average interest rate on new loans granted by deposit banks, %	3.9	5.2	5.2	4.3	4.6

Sources: Statistics Finland and Bank of Finland.

have rebounded somewhat from lows reached after the terrorist attack in September.

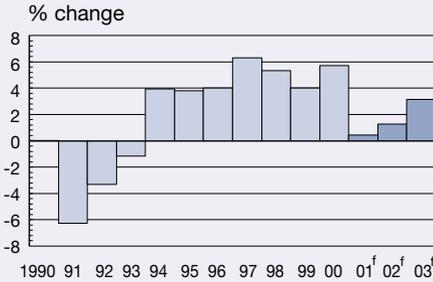
Economic policy has been aimed at promoting confidence in financial markets and throughout the economy. US monetary policy has been eased via a series of cuts in its policy rate, totalling 450 basis points and bringing the rate to a record low of 2%. The ECB has lowered its policy rate this year by a

total of 150 basis points to 3.25%, as inflation pressures have subsided. US fiscal policy has been eased in an effort to buoy demand. In 2002 in many euro area countries, including Finland, previously-decided tax easing will be implemented in the context of several-year structural programmes. Moreover, in Finland and other euro area countries with sufficiently strong public sector finances, built-in stabilities will

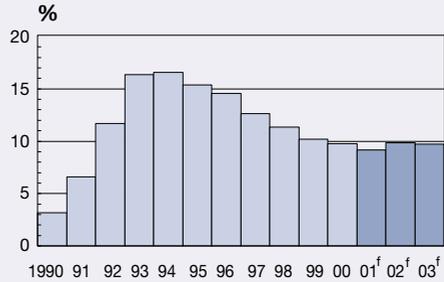
**Chart 1.**

**Key economic indicators**

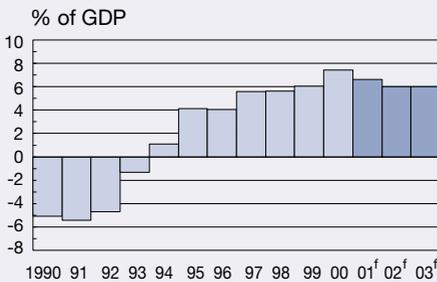
**Gross domestic product**



**Unemployment rate**

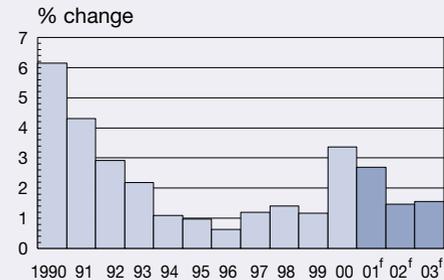


**Current account**

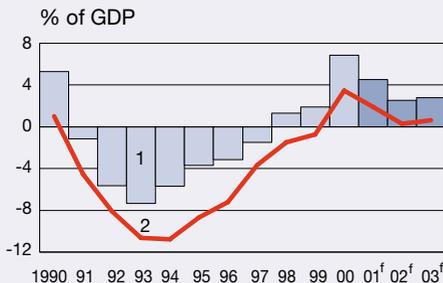


**Inflation**

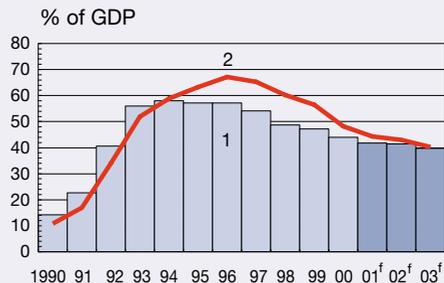
**Consumer price index**



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



**General government debt (Maastricht definition)**



- 1. General government
- 2. Central government

f = forecast.

Sources: Statistics Finland and Bank of Finland forecast.

serve to support growth of the real economy. This is because tax revenues will accumulate at a slower pace in a sluggish economic environment and unemployment benefits will smooth out fluctuations in household incomes.

The euro area is well placed to move back to its long-run growth path after the current economic

slowdown, provided the international economy also recovers. Although opinions on growth potential for the US economy – especially ‘new economy’ effects – have recently become somewhat more cautious, the best-scenario outlook is for a return to close-to-trend growth in 2003. More cautious forecasts suggest slower-than-usual growth, at least in the near term,

## Box 1. Forecast assumptions

### World trade and import prices

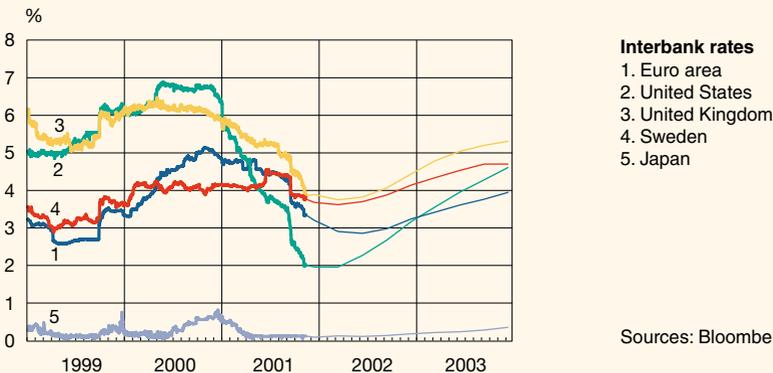
It is assumed that the pronounced slowdown in world trade in 2001 is temporary and will be followed by a rapid recovery in the second half of 2002 (Table 2). Import growth in the key customer countries for Finnish exports is expected to slow to 2.5% in 2002 and to rebound to over 7% in 2003. The price of crude oil has declined in the latter part of 2001 but will average about USD 24 a barrel for the year as a whole. The price is expected to stay at a low level; futures prices point to less than USD 20 a barrel. In conjunction with the decline in the price of oil, other commodity price declines have turned the import price average downward in 2001. It is expected that in 2002 the prices of non-oil commodities will reverse course and rise slightly and

that, despite a decline in the price of oil, import prices will rise on average. Import prices are projected to rise already in 2003 by about 2% on average, as the recovery in the world economy begins to show in the behaviour of commodity prices.

### Interest rates and exchange rates determined by market forces

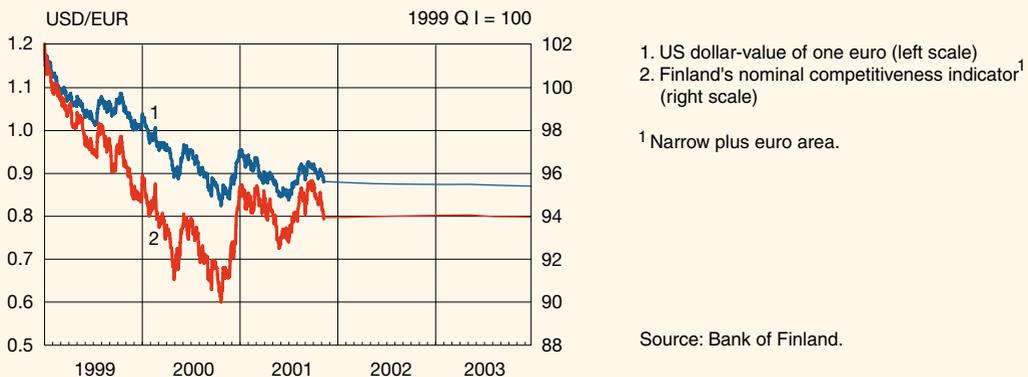
Three-month money market rates and long-term interest rates are assumed to be consistent with market interest rate and exchange rate expectations on 13 November. Thus the assumptions regarding interest rates and exchange rates are purely technical; no attempt is made to predict future ECB interest rate policy or the equilibrium exchange rate. Expectations are calculated on the basis of publicly

**Chart 2. Three-month interest rates and interest rate expectations for selected currencies**



Sources: Bloomberg and Bank of Finland.

**Chart 3. Exchange rate expectations**



Source: Bank of Finland.

**Table 2. Forecast assumptions**

	1999	2000	2001f	2002f	2003f
Import volume growth in Finnish export markets, percentage change	4.0	11.1	3.1	2.5	7.3
Finnish import prices, percentage change	-1.9	6.9	-1.0	0.8	1.9
Oil price, USD per barrel	18	28	24	19	19
3-month Euribor, %	3.0	4.5	4.3	3.0	3.7
Yield on taxable 4–5 year government bonds, %	4.1	5.3	4.6	4.3	4.7
Finland's nominal competitiveness indicator <sup>1</sup>	97.8	92.8	94.3	94.0	94.0
US dollar-value of one euro	1.07	0.92	0.90	0.88	0.87

<sup>1</sup> Narrow plus euro area, 1999 QI = 100.

Sources: Statistics Finland and Bank of Finland.

quoted interest rate futures<sup>2</sup>. Short-term market interest rates are expected to decline further in the first half of 2002 and then to trend modestly upward (Chart 2). On the basis of these interest rate

<sup>2</sup> An interest rate future is a standardised 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 13 Nov 2001 (see Seppälä – Viertiö 1996, *The Term Structure of Interest Rates: Estimation and Interpretation*, Bank of Finland Discussion Papers 19/96).

expectations, the euro<sup>3</sup> is likely to depreciate slightly vs the US dollar, but Finland's nominal competitiveness indicator should remain fairly steady. Market expectations on the whole indicate only small changes in exchange rates over the forecast period (Chart 3).

<sup>3</sup> The expected future paths of exchange rates are calculated on the basis of uncovered interest rate parity (which rules out arbitrage) using the exchange rates quoted on the day in question and the expected future path of interest rates. The assumption is purely technical and does not entail a view as to the euro's equilibrium exchange rate.

due to private sector indebtedness and a current account deficit.

Finnish economic growth<sup>1</sup> (Table 1, Chart 1) over the period 2001–2002 will be considerably weaker than indicated in the Bank's published forecast revisions (Bulletin 3/2001). This year GDP declined slightly in first quarter and substantially in the second quarter, and sluggish growth is expected for the rest of this year and the early part of 2002. If the world economy recovers as assumed in the above discussion, the Finnish economy will be well positioned to resume a fast rate of growth, via export growth, in the second half of 2002. However, a return to the boom conditions of recent years seems unlikely. The inflation outlook has moderated. Strong fiscal positions achieved in recent years by both the private and general government sectors serve as buffers against

the effects of recession. The central government surplus, however, will virtually disappear. The slowing of growth increases unemployment, which is still high by European standards.

## Export growth to accelerate again in spring 2002

The slowdown in the world economy that began with the ICT sector in the United States has had pronounced effects on Finland's two major industrial sectors. Exports in the second quarter of this year were especially weak for both the ICT and forest industries, due to sluggish demand. The situation was also affected by ongoing inventory adjustments in many countries. The decline in exports has bottomed out in recent months, as the inventory run-down ran its course. Moreover, as the year winds down, the

<sup>1</sup> Forecast based on information available at 26 Nov 2001.

**Chart 4. Finnish exports and markets**



outlook is fairly good for ICT exports. Although there are also signs of recovery in market conditions for the forest industry, eg a rise in pulp prices, exports are not expected to pick up before next spring. As regards other exports – metal and engineering products and others – growth may not resume before the world economy picks up in earnest.

Export volume this year will be 3% less than in 2000. Although exports are expected to turn up in the first half of 2002, growth for the whole year is expected to be a modest 1%. Over the period 2001–2002, Finnish export growth will probably be considerably slower than the growth in world trade, which is unusual. Thanks to wide-ranging restructuring, Finnish exports grew substantially faster than world trade during the 1990s, in contrast to the 1980s when domestic industry was concentrated in slow-growth sectors and markets (Chart 4). In recent years exchange rate developments, in addition to the restructuring, have supported export activity.

Because of the solid structure of Finnish industry, export growth is forecasted to move ahead of world trade growth toward the end of 2002. However, the growth will continue to be focused, as in recent years, on the ICT sector, where growth in the coming years is likely to be slower than in recent history. Recovery in the world economy will spur export growth first in the forest industry, where the present low level of capacity utilisation enables considerable expansion of output in the near term. Possibilities are also good for increasing exports in other sectors in the coming years, partly because compa-

nies' strong capital positions enable them to invest in new capacity.

Price competitiveness of exports will remain good over the forecast period. Rapid development of ICT technologies will continue to spur productivity growth and reduce production costs. This means that export prices in telecommunications equipment, eg mobile phones, will trend downward during the forecast period. In spite of work stoppages, export prices of forest products are forecasted to continue downward until the start of 2002. Finnish export prices will begin to rise around the start of 2002 and by the end of the forecast period will likely be tracking movements in competitor-country prices.

Thanks to restructuring in recent years, other sectors besides ICT and forest products are now on a firmer footing. It is possible that also in Finland the utilisation of information technology is raising productivity and this, in conjunction with deepening of the European internal market, will also spur export activity in other sectors. Growing demand in neighbouring countries creates room not only for products of well established companies but also for newer products. Since it is possible that ICT output will move back onto its earlier rapid-growth path, export growth over the coming years could top the present forecast by a clear margin.

Although the forecast outlook for export markets is fairly good, there are risks involved. First, the demand situation as regards mobile phones, and especially telephone networks, remains cloudy. Financial results of teleoperators have weakened considerably

throughout the world, as demand growth has been considerably slower than that assumed in connection with large-scale investments. The poor financial results, in combination with weak capital structures, have been instrumental in pushing borrowing costs to exceptionally high levels. Moreover, in Europe costs related UMTS licences have weakened companies' capital positions. For this reason, the anticipated investment surge could be delayed for some time. As regards mobile phones, business prospects could be dampened by consumers' lack of information as to what services and equipment will be available via new-generation networks. Pricing is another factor affecting the pace at which people will make use of these services.

Import activity this year will be considerable more subdued than in 2000, partly because of the decline in ICT output, which relies heavily on intermediate goods. For this reason, the ratio of imports to GDP is down sharply in 2001, albeit the ratio should recover swiftly in 2002 and 2003 as export activity, as well domestic consumption and investment, picks up steam. It is projected that already by the end of the forecast period import growth will be robust.

## Households' savings are increasing – consumption growth is moderate

Although private consumption has increased at a slower pace this year than in 2000, it has been buoyed by an improved employment situation and strong

income performance in the household sector. Retail trade has again been quite brisk, albeit the demand for cars is still lacklustre, largely due to uncertainty about future car taxes.

Consumer confidence in prospects for the Finnish economy has fallen substantially in the course of the year, because of the decline in total output, lower share prices and a diminished outlook for world economic growth. According to Statistics Finland's consumer confidence indicator, in November some 40% of consumers foresaw a weakening of the Finnish economy during the next twelve months, and over half of them felt that unemployment would increase during the same period. Despite the weakening of the economy as a whole, about a fourth of consumers believed that their own finances would improve during the next twelve months (Chart 5). Consumers felt that borrowing was worthwhile, and saving possibilities were assessed as good.

The growth of private consumption is expected to slow to less than 2% in 2001. Increased uncertainty and the increase in the risk of unemployment are constraining consumption and boosting the household sector saving ratio, to about 3%, ie almost a full percentage point higher than in 2000. It is projected that, after this year, private consumption growth will stabilise at slightly over 2% and the rise in the saving ratio is expected to slow down, as economic growth gradually recovers and household incomes rise moderately. The projected resumption of a rising unemployment rate in early 2003 is another constraint on savings growth. In 2003 the household sector saving

**Chart 5. Consumption**



1. Private consumption (left scale)
2. Retail sales, 3-month moving avg (left scale)
3. Consumer confidence indicator (excl. expectations of macroeconomic performance), 3-month moving avg (right scale)

Sources: Statistics Finland and Bank of Finland forecast.

## Box 2. Forecast based on no change in interest rates

The forecast takes into account market expectations for short-term interest rates, as explained in Box 1. The ECB decision of 8 November 2001 to cut interest rates led to expectations of a further modest lowering of rates in the coming months, but the market is looking for a gradual rise in interest rates in 2002–2003, as euro area economic growth picks up. Interest rate expectations are handled in the forecast by assuming that, in making consumption and investment decisions, companies and households accurately predict future interest rates.

When, instead of market expectations, the technical assumption of no change in interest rates is employed, somewhat more robust growth figures are obtained over the forecast period. GDP growth is slightly faster every year of the forecast period than in the forecast based on expectations of rising interest rates, as investment and private consumption grow slightly faster. Moreover, in this forecast (Table 3), the world economic recession is estimated to have a somewhat smaller impact on the Finnish economy as compared the baseline forecast. Under these assumptions, inflation also moderates.

**Table 3. Forecast based on no change in short-term interest rates, key variables**

%-change	2001f	2002f	2003f
Gross domestic product	0.5	1.6	3.4
Imports	-1.9	1.8	7.8
Exports	-3.0	1.4	7.9
Private consumption	1.8	2.3	2.6
Public consumption	1.6	2.4	2.1
Private fixed investment	2.7	1.0	4.6
Public investment	0.2	1.8	4.4
Inventory change plus statistical discrepancy, % of year-earlier total demand	-0.3	-0.2	-0.2
Harmonised index of consumer prices, %	2.7	1.7	1.6

f = forecast

ratio will be about 4.5%, which is still slightly below the average for the 1990s.

The aggregate value of households' financial and housing assets has risen in recent years, and this has buoyed private consumption. The value of households' directly held shares has nonetheless declined considerably since the peak reached in spring 2000, largely as result of a fall in share prices. The consumption-enhancing effect of increased holdings of housing assets has also levelled off, in line with the forecasted relative stability of these assets over the period 2001–2003.

The growth of households' disposable nominal income accelerated to about 5.5% this year, and is now projected to level off at 4–4.5%. The growth of real income is expected to hold fairly steady at nearly 3% pa over the forecast period, as slowing inflation compensates for slowing growth of nominal income after this year. In 2001 aggregate wages are still rising at a 7% annual rate, due to an increase in both average wage and number of hours worked, but in 2002 aggregate

wage wages will increase by only 3%, as wage drift declines and there is no increase in labour input. In 2003 both the number of hours worked and average wage are slated to return to an upward trend and the growth of aggregate wage will accelerate to 5%.

Growth of asset-related incomes will moderate notably, as dividend income declines after this year, and options income and capital gains fall sharply from peak levels reached in 2000 and 2001. The abrupt slowing of economic growth will raise labour's value-added share to 49% this year. The share will increase further to nearly 50% in 2002 and 2003, so that over the whole forecast period labour's value-added share should remain on a par with its recent-years average.

### Temporary slowing of investment growth

Investment demand has remained firm this year because of companies' strong profitability in recent

years and investment projects still in progress. On the other hand, the propensity to invest has declined considerably as the slump in export activity deepens and affects domestic demand. Because there is a great deal of unused capacity, many planned investments will be postponed. Investment activity will remain subdued through the early part of 2002 but should pick up later. Private investment is not expected to increase in 2002, since non-housing investment is projected to recover slowly, and housing investment is still flat. By 2003 private fixed investment should be growing at a reasonably high rate, as companies increase their productive capacity, especially in export goods. The expected real interest rate remains stable, which will bolster investment over the forecast period.

Whereas construction activity has slowed substantially this year, as many housing starts have been postponed, investment in industrial capacity is still on the rise. The previous shortage of skilled labour, which had posed an output bottleneck, has been eliminated, and weakened demand and profitability in the construction sector portend adjustment measures in 2001–2002.

Housing demand has been buoyed so far by robust growth of household income. It is expected that in 2002 housing demand will decline as consumers' uncertainty about income prospects increases in the context of weakening employment conditions. A decline in housing demand will keep housing prices trending moderately downward in 2001–2002. Construction costs, however, are still on a moderate upward path, which is adversely affecting construction

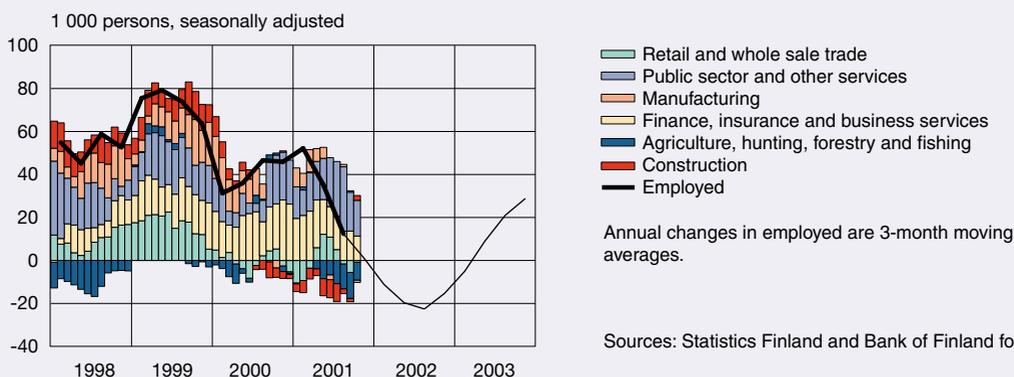
companies' profitability. Housing prices should resume their upward trend in 2003, when demand is again bolstered by cyclical factors. Over the longer term, internal migration and an ongoing need to raise housing standards will underpin the demand for housing.

## Employment situation weakening

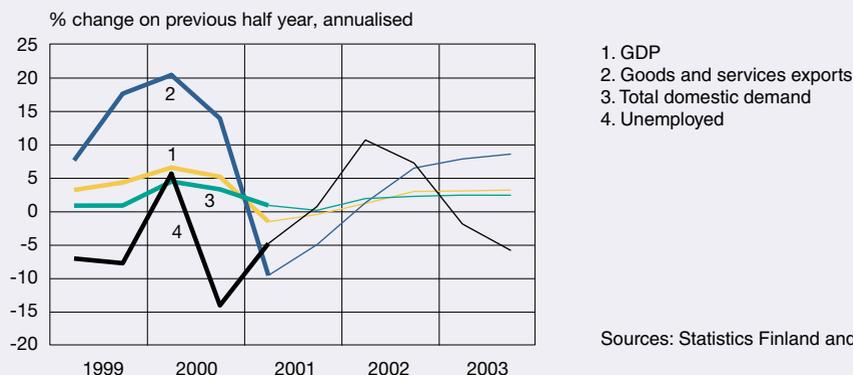
Growth in the number of employed came to a halt in the third quarter of 2001 compared to the previous quarter, but the number of employed is slightly higher than the year-earlier figure. Because of favourable developments in the early part of the year, employment for the whole year is expected to be up by 1%. Employment is expected to decline over the period from late 2001 to end 2002, after which it will increase again.

Employment has improved this year especially in the services, viz in the financial and insurance sector, and in manufacturing. Of the main activities, only agriculture and the forest industries have experienced declining employment already for several years (Chart 6). The decline in construction investment has been reducing employment in the sector already since the end of 2000. The number of jobs in wholesale and retail trade does not appear to be growing in late 2001, and employment growth stopped last summer in the industrial sector. The outlook for employment in manufacturing turned sharply downward in the second quarter of this year and also portended weakening employment conditions in the latter part of the

**Chart 6. Employment: annual change by sector**



**Chart 7. Composition of growth and unemployment**



year and early part of 2002. October survey data (Tendency Survey of the Confederation of Finnish Industry and Employers) suggest that less than a fourth of industrial firms expect employment to decline during 2002.

The slowing of GDP growth affects unemployment with a lag (Chart 7). Thus far the effects have been minimal because the slump is expected to be short-lived and because the growth slowdown has been concentrated in export-driven sectors. The decline in domestic demand has been muted in comparison with gyrations in export activity, and domestically oriented companies in particular have attempted to 'hoard' their employees. The more pessimistic outlook has nonetheless been reflected in some late-autumn layoffs and redundancies, even at some of the large and capital-rich companies.

The supply of labour will not increase in 2002, as demand weakens and job opportunities decline, but it is expected that there will be a modest increase again in 2003. The forecast indicates an increase in the unemployment rate, starting around the end of 2001, gradually climbing to 10% by end 2002, and then falling slowly in the course of 2003, as domestic investment and consumption demand pick up. According to the forecast, the unemployment rate will average 9.7% for year 2003, absent significant restructuring of the labour market. The number of unemployed will still exceed the level of October 2001 at the end of the forecast period, after peaking at end 2002 at an excess possibly as large as 25,000.

The Finnish labour market will soon face its first recession-environment test since the start of monetary

union (EMU). If restructuring has in fact improved the ability of the labour market to adjust to cyclical movements, unemployment need not increase as forecasted. It nonetheless would appear that restructuring efforts have been modest and that unemployment will remain high throughout the forecast period.

### Wage drift will decrease in 2002 – productivity will improve gradually

The growth of total nominal wages has continued at nearly a 7% rate in 2001. Behind the strong growth are this year's 3%-plus across-the-board increase in wages as per the wage settlement, as well as substantial wage drift and bonuses based on strong financial results in 2000. These factors together boosted the average hourly wage rate by 6% and were topped off with a 1% increase in employment.

In 2002 average wages will rise by only about 3%, as settlement-related increases boost the average by just over 2% and wage drift and bonuses remain fairly modest. The aggregate wage per working hour will by the end of the forecast period be rising again at a strong 4% annual rate in an environment of robust economic growth, as wage drift increases again slightly. The tendency to modest wage settlements is expected to continue.

Growth of labour productivity should roughly track the growth of the economy over the forecast period. This year productivity growth will be flat, in line with a near-zero increase in output, after which it should increase at a gradually accelerating rate and

nearly reach its prior trend rate by the end of the forecast period. Unit labour costs are rising a full 6% in 2001 because previously-set wage costs are continuing to increase, despite a decline in output in the early part of the year, due to a collapse in export demand. In 2002 and 2003 the rise in unit labour costs will ease to 1½–2%, as the course of wages moderates and productivity growth accelerates.

## Inflation slowing

Average CPI inflation for this year is expected to be a relatively high 2.7% (Chart 8). Unit labour costs have increased notably even though the inflationary effects of import (especially energy) prices and earlier exchange rate changes have faded or reversed direction. Inflation has eased since last summer and is expected to fall to 1.5% pa in 2002. The rate of increase in unit labour costs will level off at 2% in 2002, as the rise in wages decelerates and productivity begins to recover, nor will the rise in import prices be very pronounced. Although inflation will be spurred slightly in 2003 by increases in import prices, it is expected to remain at a moderate average rate of 1.6%. By the end of the forecast period, domestic cost developments will again be described by accelerated wage increases offset by accelerated productivity growth.

Although the slowing of inflation in summer and autumn was forecasted, the component contributions have been a surprise. Energy prices have fallen faster than expected, whereas prices of food products, par-

ticularly of fresh foods, have continually outpaced predictions.

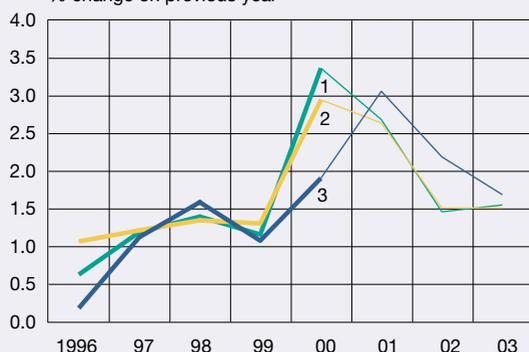
Based on crude oil futures, energy prices are expected to continue to trend downward, and the effect of the energy component of inflation should be slightly negative, not only this year but also in 2002 and 2003. Because of the continuing decline in capital costs of housing (housing prices and interest rates on housing loans), the housing components, except for rents, will continue to be anti-inflationary in 2001–2002, and even toward the end of the forecast period increases in housing capital costs will still be moderate. The jump in food prices due to animal diseases is expected to be a one-off event.

Consumers' inflation expectations have been quite high in recent months, partly in response to realised inflation. Based on consumer confidence surveys, consumers in November expected 2.7% inflation over the next twelve months compared to actual CPI inflation of 1.9% pa in October. Triggering of the index clause of the current wage agreement (based on CPI change for Jan–Dec 2001) is not expected.

The changeover to euro cash at the start of 2002 is not expected to significantly boost the price level, though individual price increases will occur. Statistics Finland estimated already in May 2001 that possible inflation effects of 'euro rounding' had been limited to certain product groups and had no more than a 0.1 percentage point effect on the inflation rate. However, it is likely that rounding to psychologically attractive numbers, such as 99 or round numbers, will occur frequently, especially around the turn of the year. But competition will ensure that some of the rounding is downward.

**Chart 8. Inflation**

% change on previous year



1. Consumer price index (CPI)
2. Harmonised index of consumer prices (HICP)
3. Harmonised index of consumer prices excl. energy

Sources: Statistics Finland and Bank of Finland forecast.

## Current account surplus shrinking

Throughout the forecast period, the surplus on goods will remain considerably below its peak (11% of GDP) reached in 2000 but will still be at a high level. During the forecast period, the surpluses on goods and combined goods and services are expected to settle at just below 10% and at 8% of GDP respectively. The current account balance is improving in 2001, as prices of goods imports decline faster than prices of goods exports, partly due to the fall in the world market price of oil. The forecasts for 2002 and 2003 indicate that export prices will increase at a somewhat slower pace than import prices.

The current account surplus is expected to decline during the forecast period from its year-2000 level of 7.5% of GDP to 6%, in line with the decline in the surplus on goods. The deficits on current transfers and income will amount to about 2% of GDP during the forecast period. Sizeable dividend payments, based on profits in 2000, were made to non-residents in the early part of this year. Such payments should be smaller in 2002 and 2003, due to lower corporate profits.

During the forecast period the household sector's financial surplus will grow as households increase their saving and only moderately increase their investment. Growth in the corporate sector surplus in 2001 and 2002 will reflect the sluggishness of investment. Although the general government surplus will decline, it will remain around 3% of GDP, largely due to the surplus of social security funds.

## Lending to households continues to increase

Lending and deposit rates are expected to track short-term market interest rates. The average rate on new loans will fall to 4.3% in 2002 and rise to 4.6% in 2003. The interest rate margin, ie the difference between average lending and deposit rates, will narrow as market rates decline in 2002 and widen as rates rise in 2003.

The stock of bank lending to the private sector will increase by about 6% this year and by slightly less in 2002 and 2003. Lending to households will remain strong and households' indebtedness will increase even as growth of the lending stock slows. The decline in housing prices in late 2001 and early 2002

will initially dampen households' borrowing, and growth of the stock of lending to households will moderate over the forecast period. This year's growth in the stock of corporate lending is explained by a decline in internal financing and reduced possibilities for equity financing. The stock of corporate lending will decline marginally in 2002, as companies reduce their investments and the corporate sector financial surplus grows.

The stock of deposits will increase during the forecast period, nearly in line with the lending stock. The fastest growth will be recorded this year, again a reflection of uncertainty attached to alternative investment outlets. It is projected that deposit growth will slow to about 3% after this year.

## General government surplus shrinking

The general government surplus will contract substantially in the course of the forecast period, from 4.5% of GDP this year to 2.6% in 2002 (Table 4). In 2003 the surplus should increase marginally. The shrinking of the surplus derives not only from weakening economic performance but also from the disappearance of one-off tax revenues linked to the year-2000 rise in share prices. Because of the lagged impact on the tax base, these one-off factors will continue to boost central government revenues particularly this year, and the ratio of central government surplus to GDP could hold at around 2%. This means that the weakening of central government finances will not become clearly visible until 2002, when the surplus drops to 0.3% of GDP. A marginal improvement in the ratio is projected for 2003.

The outlook for central government finances has weakened rapidly. Yet in the spring it was estimated that the ratio of central government surplus to GDP would stabilise at 2–3% for the long run. Municipalities in toto will continue to generate small deficits during the forecast period. The surplus of the social security funds will remain at around 3% of GDP. The decline in the central government surplus and sluggish economic growth will slow the reduction in the central government's debt-to-GDP ratio. It is now estimated that the debt ratio will be 40% in 2003, compared to the spring projection of 34%. This means that in 2003 the general government sector debt – ie EMU debt – will amount to 40% of GDP.

**Table 4. General government financial balance, % of GDP**

	1997	1998	1999	2000	2001f	2002f	2003f
General government revenue	55.1	54.4	53.9	55.3	53.6	52.6	52.3
General government expenditure	56.6	53.1	52.0	48.5	49.1	50.0	49.5
General government primary expenditure	52.4	49.5	48.9	45.6	46.4	47.6	47.4
General government interest payments	4.3	3.6	3.1	2.8	2.6	2.4	2.1
<b>General government net lending</b>	<b>-1.5</b>	<b>1.3</b>	<b>1.9</b>	<b>6.9</b>	<b>4.5</b>	<b>2.6</b>	<b>2.8</b>
Central government	-3.7	-1.5	-0.7	3.5	1.9	0.3	0.6
Municipalities	-0.7	-0.3	-0.3	0.1	-0.3	-0.5	-0.6
Social security funds	2.8	3.1	2.9	3.3	2.9	2.8	2.8
General government primary balance	2.7	4.9	5.0	9.7	7.2	5.0	4.9

f = forecast

Total revenue from income and property taxes in 2001 will be some 5% less than in 2000. A reduction in one-off factors, such as options income, and some tax reductions will slow the growth of income taxes paid by households. In accord with the Government's planned tax reductions, taxation of earned income will be eased in 2001 and 2002, whereas in 2003 only an inflation adjustment is anticipated. Tax-table and inflation adjustments will reduce households' total tax payments over the period 2001–2003 by about EUR 1.7 billion. Corporate tax revenues will decline by more than 20% this year and about another 15% next year, as companies' financial results will remain weak and their payments on tax-withholdings shortfalls will decline as compared to this year. As regards year-2003 corporate tax revenues, it is estimated that revenues will track the growth of operating income (viz GDP growth) over the forecast period. Revenues from output and import taxes will grow more slowly than private consumption over the forecast period. Particularly sluggish car sales in 2001 have reduced car tax and VAT revenues. Assumed tax easing for 2003 will reduce revenues from alcohol and tobacco taxes.

The total tax ratio is projected to fall from 47% in 2002 to 44% in 2003, ie roughly to the pre-depression level. The average tax rate on households' earned income will nonetheless remain notably higher than before the depression. Indirect labour costs will decline slightly, due to a reduction in unemployment insurance premiums.

The growth of general government primary expenditures (ie excl. interest payments) will acceler-

ate somewhat during the forecast period. Wage increases in the sector will add to consumption expenditure, and municipalities are expanding their staffs, especially this year. Social welfare payments will grow faster than in recent years. The downward trend in unemployment benefit payments will end as the employment situation worsens. A pronounced index-triggered increase in pension payments will occur in 2001, and national pension payments will start to increase after several years of decline. Investment in the general government sector is, by contrast, increasing at a fairly slow rate, due largely to municipalities' financial difficulties.

### Built-in stabilisers and tax cuts support growth

The rapid improvement in central government finances in recent years means that the shrinking of the tax base, in conjunction with economic slowing, and the increase in unemployment-related expenditures have not posed an immediate threat to the sustainability of fiscal balance. If the economic slowing proves to be short-lived, as forecasted, the government's built-in stabilisers will be crucial in buffering the income-effects of a weak economy. Moreover, in 2001 and 2002 tax reductions will bolster domestic demand in a timely manner (in terms of cyclical conditions), so that as far as the forecast is concerned new expansionary fiscal measures will not be needed. More extensive countercyclical fiscal measures would in fact be problematic. Experiences

of demand management policies have not been encouraging because the effects of expansionary measures are often ill-timed. Due to various administrative lags, expansionary effects have in fact often been felt when economic growth was already accelerating. This has exacerbated the situation and reduced the effectiveness of built-in stabilisers. Another problem here is the difficulty of estimating the macroeconomic effects of fiscal measures. Fiscal measures can also cause long-term imbalances if they lead to permanent spending increases and so weaken the structural balance between revenues and expenditures.

Despite the weakening of the economy, it is imperative that progress continue in the structural reforms aimed at raising the employment rate, and hence at strengthening the financial base for public sector services. Recently agreed principles for reform of the pension system will further this aim if the changes raise the effective age of retirement. Barriers to employment should be reduced by continuing the tax easing and thus narrowing the tax wedge. Realised and planned tax reductions are not even sufficient to lower the average tax rate on earned income to pre-depression levels.

The slowness in reducing the tax rate is partly due to the fact that the level of municipality taxes has not declined from the high level reached during the depression. Although there are wide differences between municipalities, they have not on average been able to build up buffers in good years – to tide them over in years when the tax base shrinks. Thus, now that business conditions are weakening, the average municipal tax rate will go on the rise again next year. This is at odds with both the Government's tax-reduction plan and with the economic situation.

## Forecast risks

The possibility that recovery of the world economy will take more than the assumed time poses a risk that economic growth in the short run will be less robust than forecasted. If export demand fails to recover as assumed, Finnish industry will be forced to

make bigger adjustments, not only by postponing some investments and abandoning others, but also via more layoffs and redundancies than forecasted. This would weaken household incomes and confidence over the forecast period and thus slow the growth of private consumption. The supportive effects of domestic demand on employment and economic growth would then be weaker than in the forecast.

The uncertain outlook for worldwide ICT sector developments and investments creates forecast risks – upside and downside – as regards Finnish exports. Domestic developments also entail forecast risks, which again are not one-way risks, since workforce adjustments could turn out to be smaller than forecasted if companies anticipate a resumption of economic growth by 'hoarding' skilled employees. This would depend on the availability of other means of cutting costs. Looking toward the end of the forecast period, the growth forecast risk appears fairly evenly balanced as to direction.

The risk of higher-than-forecasted inflation is linked in part to global price developments. A pick-up in world economic activity could lead to a general acceleration of inflation above forecast, especially in 2003. The forecast assumes that labour productivity growth will pick up gradually to a near-trend rate by the end of the forecast period. Slower growth would entail cost pressures and higher inflation, but a growth rate slightly higher than forecasted is not out of the question. There are less, and more balanced, risks associated with wage developments than was the case with the previous forecast. Overall, upside and downside inflation risks are fairly evenly balanced as regards the early part of the forecast period, but looking toward the end of the period the risks appear to be weighted to the upside.

5 December 2001

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

In Finland, as in the EU area as a whole, conditions in the financial markets have deteriorated in the course of the year as the economic outlook continues to darken. In particular, uncertainty in the international financial markets has notably increased for a number of reasons.

Despite the temporary weakening in the outlook, financial stability in Finland does not appear to be threatened. The biggest risks for the financial markets are indirect and are related to international economic developments. The increasing competition that comes with integration of financial markets tends to compel Finnish banks and other market participants to keep their costs under control. Improving operational effectiveness and maintaining flexibility will enable institutions to cope more effectively with unforeseen events.

### Increasing uncertainty in financial markets was further aggravated by terrorist attacks

The slowdown in economic activity experienced at about the same time during the past year by the world's major economies has increased uncertainty in the international financial markets. Corporate bankruptcies, for example, have clearly been on the rise in Japan and the United States, and over the course of the year US consumer demand has shown signs of sluggishness.

The series of terrorist attacks on the United States in September brought at least a temporary increase in market uncertainty by deepening the US recession and abruptly changing the risks involved in the financial markets. The attacks also meant that yet more resources worldwide will be needed in order to ensure operational reliability of the financial infrastructure.

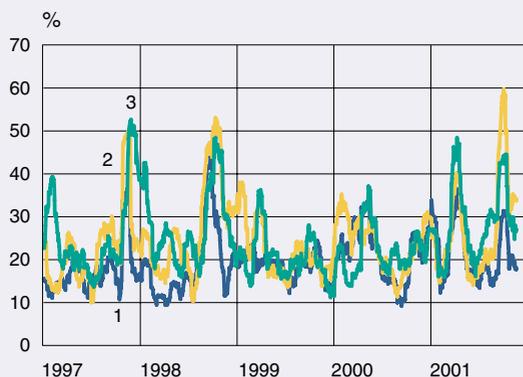
On the other hand, the terrorist attacks accelerated the implementation of expansionary measures that had previously been planned. There has been a rapid easing of monetary policy during the autumn, as the Federal Reserve has lowered its policy interest rate three times by 50 basis points and most recently in December by 25 basis points. The first rate cut came immediately after the terrorist attacks, and was part of a concerted action by the other major industrial countries. The European Central Bank (ECB) in this connection lowered its own policy rate by 50 basis points and made another 50-basis-point cut in November. The central banks' joint effort also served to ensure adequate liquidity for the international financial markets. A series of cuts in the US policy rate – adding up to a full 300 basis points – had already been effected in the year up to September. The rate is now 475 basis points lower than at the start of 2001. Fiscal policy has been eased and further easing is planned, notably in the United States but also to an extent in Japan.

There have recently been increasing signs of restored confidence in the United States, due not only to expansionary economic policies but also to restraint in the war against terrorism. Increased confidence is also signalled by the recovery of stock markets around the world and by the halt, and lately even some reversal, in the widening of bond yield spreads. On the other hand, volatility has increased to relatively high levels in these markets (Chart 1).

The situation remains sensitive and highly uncertain. The large international organisations, such as the IMF and OECD, have pessimistically revised their forecasts. Further disturbances could significantly hamper the incipient restoration of market confidence, as investors would become overly cautious and risk avoidance would take precedence over other considerations. Consumers would then increase their savings, and a normal economic downturn could turn into a full-blown recession.

**Chart 1.**

**Stock market volatility\***

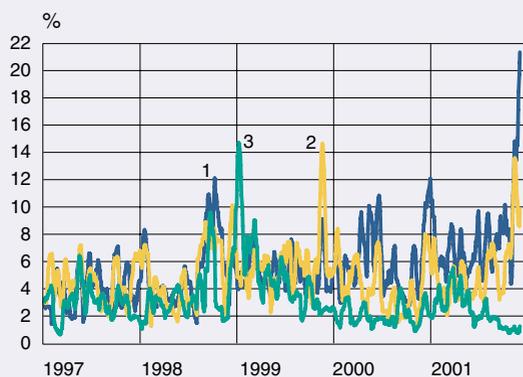


1. Standard & Poor's 500 (USA)
2. Dax (Germany)
3. Nikkei 225 (Japan)

\* 22-day moving avg of standard deviation

Source: Goldman Sachs.

**Bond market volatility\***



1. USA
2. Europe
3. Japan

\* 22-day moving avg of standard deviation

Source: Goldman Sachs.

The deteriorating situation in Japan is an increasing cause for concern. Policy measures have not been sufficient for bringing about the necessary structural changes. The international rating agencies have recently lowered Japan's long-term ratings and the outlook remains negative. Corporate bankruptcies in Japan have increased in September to levels not seen since the start of the 1990s, as deflation has hurt borrowers. According to the latest estimates, Japan's non-performing loans have risen to as much as 25% of GDP.<sup>1</sup> The Japanese Government has in fact attempted to allocate more funds to the state-run Resolution and

Collection Corporation, to enable it to redeem non-performing loans from banks.

As an emerging market economy heavily dependent on external financing, Argentina has suffered a great deal from a 'flight to quality'. The Argentine peso is tied to the US dollar via a currency board arrangement, and this has led to a significant current account deficit and a sharp rise in indebtedness, as the dollar appreciated. Argentina's unilateral decision to go ahead with a financial restructuring plan has caused interest rates to soar in the secondary markets. In early November 2001, the rating agency Standard & Poor's lowered Argentina's credit rating to 'selective default' (SD), indicating partial defaults on obligations. Recently, Argentina has put a monthly limit on withdrawals of bank deposits in order to prevent capital flight.

<sup>1</sup> The figure is approximately double that for the most difficult years of the Finnish banking crisis in the early 1990s (calculation methods may differ).

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## Weakened prospects also for EU area financial markets

Financial results for EU area banks have weakened during the year as economic prospects have increasingly darkened. Standard & Poor's believes there will be a reduction in the profitability of the larger European banks in particular.

The growth in lending over the last few years has probably resulted in a lowering of EU area banks' asset quality. Despite this, the banks have not yet materially increased their loan loss provisions. The deceleration of lending, together with the decline in market interest rates and resulting narrowing of the overall interest rate margin,<sup>2</sup> has resulted in a slowing of the growth of net interest income. The banks' cost-to-income ratio remained unchanged in 2000 despite an increase in personnel costs. Solvency ratios (BIS) weakened slightly during that year but remained at a healthy level. In Germany, for example, several of the larger banks have recently announced restructuring measures.

Consolidation in the EU area seems set to continue as expected, perhaps most significantly on an area-wide basis in the Nordic and Benelux countries and in the Iberian peninsula. Structural change will continue to be somewhat hampered by cross-country regulatory differences.

The levelling off of the decreasing trend in interest rate margins, growth in new lending (especially housing loans), higher incomes from intermediation, and a low level of net loan losses has in recent years led to favourable developments in retail banking. There are still significant differences in productivity across national banking sectors, albeit the overall trend is positive. However, the most immediate challenges facing retail banks are to reduce overheads and prepare for an increase in loan losses. For European banks, unsecured consumer loans and palettes of housing loans, including various risks, are not as common as for American banks.

Investment banks enjoyed a period of exceptionally robust growth in the latter half of the 1990s, but they – including those in the EU area – are now faced with the need to reduce costs. A slight increase in interest income has not compensated completely for

this year's losses in M&A business and stock market brokerage. Income from asset management and private banking has also turned down, and many banks have had to write down their shareholdings. The worst difficulties are being faced by banks that are heavily involved in investment banking. Income from investment banking accounts for over half the profits of some of the biggest banks.

EU area banks are exposed in varying degrees to the financing of high-risk sectors. In the Nordic countries this exposure is chiefly in the telecommunications sector. Elsewhere in Europe such exposure also exists in other sectors that have proven susceptible to terrorist attack, such as airlines, insurance companies and the travel industry.

It is possible that risks realised outside the EU area will have some effect on banks within the EU area. EU area banks have varying degrees of exposure in the US, Japanese and emerging economies, and some of them have significant exposures in Latin America. EU area banks' exposures in the United States cannot be considered large, and they often involve non-financial companies. Recently, EU area banks have reduced their exposures in the Japanese and other Asian economies.

With the increase in investment-related uncertainty we have seen increasingly clear evidence of an 'escape to quality'. This involves investors attempting to transfer their investments to instruments with higher credit ratings. This has naturally meant that already weak and exposed companies have become subject to refinancing risks. The costs of borrowing have increased in line with the widening of yield spreads, most clearly for bonds issued by companies in the telecommunications, consumer goods and industrial sectors. Despite the anticipated economic upturn, we are still likely to see an increase in bankruptcies at the start of 2002. Recently, in both Europe and the United States, more credit ratings have been lowered than raised. In Europe, non-financial enterprises in particular have been downgraded; mostly in the manufacturing sector. Despite this, October saw an increase in bond issuance in the non-financial private sector after a sluggish summer. The reduction in credit ratings has, on the other hand, led to a decrease eg in money market funds' investments in corporate debt.

Share prices bottomed out in mid-September, after which there has been an upward trend, despite

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<sup>2</sup> Difference between average lending and deposit rates.

differences across regions and companies. Share prices of US and European financial firms – both banks and insurance companies – turned down in early 2001, in line with an anticipated reduction in profitability.

## Prospects for Finnish banking sector slightly weaker but stable

Developments and prospects for the Finnish banking sector have weakened since the spring (see Bulletin 2/2001). However this is seen as a short-term situation not posing a threat to the banks' capital position

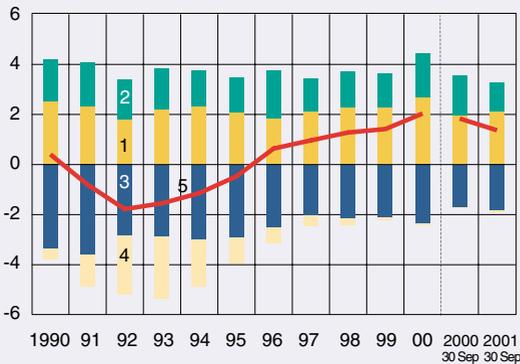
(Chart 2). Neither would one anticipate either a debt-deflation spiral as in Japan or the kind of deep recession experienced by Finland a decade ago. The Finnish economy is benefiting from a stable environment within the EMU and, because of low levels of indebtedness (Chart 3), bank customers are not prone to bankruptcy. On the other hand, continuing progress in consolidation and cross-sectoral diversification and economies of scope are heightening competition. Against this background, banks are obliged to continuously increase efficiency and control costs.

Finnish banks have increased their loan loss provisions (to an extent) and their interest rate margins on new lending to companies. This suggests that the

**Chart 2. Financial results: deposit bank groups**

(incl. Merita Bank and Sampo groups)

EUR bn



1. Net income from financial operations
2. Other income
3. Operating expenses and depreciation
4. Loan and guarantee losses
5. Operation profit

Data for 2000 and 2001 are not fully comparable with earlier data due to mergers in the banking sector.

Source: Financial Supervision Authority.

**Chart 3. Debt ratio by sector**

% of GDP

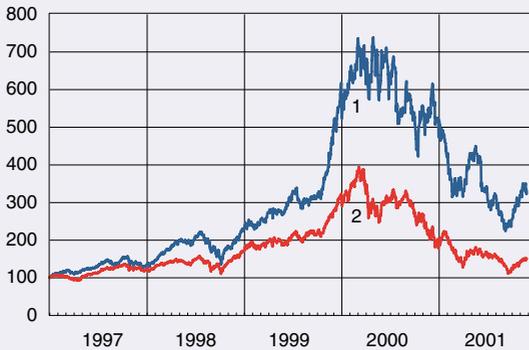


1. Corporate (excl. housing companies)
2. Household
3. Central government

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

**Chart 4. Stock indices**

Index 4 Jan 1999 = 100



1. HEX all-share index
2. Nasdaq composite

Sources: HEX and Bloomberg.

banks are further preparing for a slowing of economy and have begun to increase the risk premia in lending rates.

Should the worst of the current international scenarios be realised, Finland too could be faced with an entirely different situation, if present loan loss provisions and risk premia turn out to be underestimated. Companies operating in the financial sector need to be sufficiently prepared for realisation of operational risks in a crisis situation on a par with last September's crisis. Organisational flexibility facilitates adjustment to unexpected events.

The major financial groups operating in Finland have completed numerous internal restructurings aimed at improving operating efficiency. Nordea Group's motivation for expansion is cost reductions via the synergies of combination. The Group expects a rapid expansion of its activities, particularly in the Baltic countries and Poland.

Sampo Group failed in its attempt to increase its presence in the Nordic countries by acquiring Storebrand, the Norwegian financial conglomerate, due to a strong local resistance. The subsequent recovery of Sampo's share price indicates that the market did not view the failure as a financial setback. Despite the failure, Sampo's casualty insurance business has been linked up with the Nordic If. Sampo already ten years ago reduced its reinsurance commitments, which could now work to its advantage as the insurance industry worldwide faces difficult times.

The OKObank group (amalgamation of cooperative banks) has increased its market share, especially in Greater Helsinki. Yet, compared to its competitors, it is still relatively less active in the growth centres. The group has focused on the household sector, which partly explains its market-share growth since bank lending to households has been growing at a relatively rapid rate in recent years. Some OKObank group members, however, continue to be burdened by large low-yield real estate holdings.

Big and rapid structural changes increase banks' risks. However, risks continue to derive mainly from outside sources related to the world economic situation. Cross-border mergers are increasing Finnish banks' operating risks even in the absence of domestic causes.

### Stock markets recovered quickly after terrorist attack

Sectoral differences in share-price behaviour are reflected in differences across geographic areas. Since the terrorist attack, share prices have risen the most in Finland. Led by Nokia, the HEX all-share index has climbed by close to 50 % since the attack, while in the largest euro area countries prices have risen by 5% on average (Chart 4). In contrast, prices in Ireland and Austria have fallen by almost 10% during the last two months. It should be borne in mind in this connection that the share of ITC-sector shares is

relatively large in the HEX index. The direct effects of the attack on Finnish securities markets have been modest. An apparent direct effect was in the FSA's decision to suspend redemptions of mutual fund units, for which evaluation became impossible when the New York marketplace was closed. The closing of the NYSE also resulted in concentrated trading of Nokia shares on the HEX.

Developments involving different EU area securities markets have continued. The most significant event from Finland's perspective was the strategically important cross membership agreement between HEX and EuroNext.<sup>3</sup> The arrangement gives HEX a useful connection with one of Europe's key marketplaces. HEX has also attempted to widen and diversify its range of traded instruments, eg by expanding into Estonian shares, exchange-traded fund (ETF) units, and derivatives based on sector indices. As regards securities services, the diversification effort is visible eg in the availability of outsourced back office services to securities brokers.

The risks involved in securities clearing and settlement systems continue to be reduced. HEX is in the process of converting its share settlement to an RTGS<sup>4</sup>-based system that will meet ESCB requirements by the end of 2002. HEX and other Nordic marketplaces have been examining possibilities for intermediating central counterparty services in respect of share trading in order to reduce counterparty risks.

At the international level, the board of the London-based derivatives exchange LIFFE has made a recommendation to its shareholders that the exchange merge with EuroNext. The Australian and Singapore stock exchanges have increased their cooperation. Global settlement is being made more efficient via an alliance (CCP12<sup>5</sup>) of the world's major central counterparty service providers.

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<sup>3</sup> EuroNext is a Pan-European stock exchange resulting from a merger of the Amsterdam, Brussels and Paris stock exchanges in early 2000.

<sup>4</sup> Real-time gross settlement.

<sup>5</sup> The Central Counterparty, one of the world's largest central counterparties, is an organisation comprising twelve members. A central counterparty acts as counterparty to both buyer and seller in bilateral trades.

## Conversion of payment systems to euro cash environment proceeds according to plan

The terrorist attacks on the United States have not had any significant effect on payment systems within the EU area. The events, however, underlined the need to pay greater attention to operational risks, particularly risks related to the concentration of payment systems, and to ensuring that adequate back up systems are in place. Holding a key position in the global transfer of payments is the SWIFT (Society for Worldwide Interbank Financial Telecommunications) system, currently in use in 194 countries. The break in data communication caused by the attacks on New York meant that many operators lost the means to meet their payment obligations on time, for obvious technical reasons, which left recipients short of funds. The problems thus faced in the United States were solved with the help of measures applied by the Federal Reserve while other central banks around the world entered into foreign exchange swap agreements to ensure dollar liquidity levels for foreign financial institutions.

Development of payment systems has continued apace within the EU area. STEP1, a system for handling small transactions, was introduced by the Euro Banking Association, and several other payment systems are slated for start-up in the near future.

The cash changeover to euro at the turn of the year poses a major challenge. The changeover will not however affect the Bank of Finland's interbank payment system (BoF-RTGS), nor will it affect the EU-wide TARGET system, as all transactions have been euro-denominated since the start of 1999. TARGET and the nationally operated RTGS systems will be closed on Monday, 31 December 2001, due to the cash changeover. Banks will be closed for four days running at the turn of the year.

The euro cash changeover will require adjustments to two other Finnish payment systems, as transactions and matching in the large-value online netting system for express transfers and cheques (POPS) and the interbank retail payment system (PMJ) will be effected in markkaa until 28 December 2001 and in euro from 2 January 2002. Settlements for these two systems are effected via the BoF-RTGS system and have therefore been euro-denominated since the start of 1999. Banks operating the POPS and PMJ

## Box. Financial stability and the Bank of Finland

One of the legally mandated tasks of the Bank of Finland, in addition to participating in the preparation and implementation of monetary policy, is to participate in maintaining the reliability and efficiency of the payment system and other financial system and participate in their development. Moreover, as a member of the European System of Central Banks (ESCB), the Bank of Finland is obliged to promote the reliable operation and stability of the financial system.

A stable and efficient financial system is crucial for price stability and successful conduct of monetary policy. A stable financial system also supports the nation's economic policy and overall well-being. Thus it is important that the major risks to the functioning of the financial system be prevented.

The Bank of Finland aims to maintain confidence in the financial system without having to intervene. Achievement of this aim requires behind-the-scenes work, such as influencing other authorities, financial market participants, and the general public. Influence requires research and analysis,

publishing findings, issuing statements and participation in a variety of cooperative tasks such as working on legislation concerning the financial markets.

The Ministry of Finance and the Financial Supervision Authority (FSA) are two of the key domestic partners in cooperative efforts. The Ministry's primary role is to draft and implement financial markets legislation. The FSA operates as an independent body in connection with the Bank of Finland. Its tasks include prudential supervision of credit institutions, financial firms, exchanges, and settlement systems, as well as the legality of their operations.

Much of the important international cooperation is carried on within the ESCB. A major task of the ESCB is to promote the stability of the EU financial system. It does this by overseeing payment systems and securities settlement systems and carrying out macroprudential analysis of the financial markets, within the ECB's Payment and Settlement Systems Committee and Banking Supervision Committee, as well as in other fora.

systems will carry out the conversion to euro and banks' customers will not be directly affected.

Preparations for the euro cash changeover have all gone according to plan, and it is expected that the changeover should pass through the start of next year without any significant hitches. ATMs will be converted to euro from the start of 2002; the objective being that a week later all ATMs will be dispensing only euro. The banks will make automatic conversions of markka-denominated accounts and loans to euro, enabling them to supply their customers with euro-denominated bank statements, transaction statements etc, from the start of 2002. Frontloading of euro banknotes and coins to the banks commenced in September 2001.

## Financial stability – key developments in regulation and supervision

The terrorist attack on the United States turned out to be a test of the global financial system. It became necessary to completely reconsider the risks involved and how to mitigate them. The specific issue that has risen in priority is that of the risks of centralisation. Although the financial infrastructure has performed well, it has become clear that, going forward, excessive physical centralisation of systems entails risk. It is imperative that the major market participants' back-up systems be made more reliable. Operational reliability of the infrastructure in times of crisis is critical, but equally important is crisis prevention – to

the extent possible. One means of prevention is to reduce terrorists' ability to operate, particularly by gaining control over their financial networks. This raises questions about bank secrecy and adequate sharing of information. Tightening of regulatory and supervisory activities connected with money laundering is one way of uncovering these financial networks.

Also other means are being explored for improving the supervision and stability maintenance of financial markets. One of the major efforts in this area is the reform of capital adequacy requirements, a project of the Basel Committee on Banking Supervision, which will also form the basis for EU legislation. Although progress has been made, it has been necessary to postpone the effective date from 2004 to 2005. The Basel Committee has had to re-evaluate several matters, eg the overall level of minimum capital requirements, which studies have indicated to be considerably higher than present requirements. High capital requirements would particularly hamper the financing of small and medium-size companies, whose treatment has been a particular concern of the Committee. Another matter of concern is the complexity of the envisioned regulations as a whole. Yet another issue has risen to the fore: a concern about possible pro-cyclical effects of the capital requirements. For example, during a recession capital requirements are tightened because they are tied to companies' (now declining) credit ratings. This could lead to a reduction in lending, which might exacerbate the economic situation.

Various regulatory reforms are underway. In December 2000 the Joint Working Group, comprised of representatives of the International Accounting Standard Board and national authorities, issued its draft accounting standards for financial instruments. The draft standards call for valuing all financial instruments at market value, which has raised a lot of questions. In September the EU Commission noted a number of areas that require further study. One such key area is market-value valuation of the banking book, ie banks' lending and deposits. On this, the ECB has rendered a negative opinion.

In connection with the development of financial markets, issues related to the integration of EU area financial markets have become increasing important. In this context, the EU Commission has drawn up a Financial Services Action Plan, which is slated for

implementation by 2005, and EU area securities markets are to be integrated by 2003. Even though a number of such steps have been taken, implementation of the plan is somewhat behind schedule.

Regarding securities markets regulation, in February 2001 Alexandre Lamfalussy's 'Committee of Wise Men' proposed a four-level approach for Europe: (1) legislation adopted via normal procedures (Commission proposal to Council of Ministers/European Parliament), (2) two new committees: European Securities Committee (ESC) and Committee of European Securities Regulators (CESR), (3) enhanced cooperation among securities regulators, (4) strengthened enforcement of regulations.

The CESR acts as a specialist and technical adviser, competent in the field of securities, and the ESC is composed of high-level persons from Member States. Both bodies commenced their work in September. They currently have advisory status but are aiming for committological<sup>6</sup> status, which is still open.

As regards supervision of securities clearing and settlement, the ESCB and CESR have decided to set up a working group for the purpose of establishing Europe-wide standards for settlement systems and central counterparties. The basis for the project is the CPSS-IOSCO<sup>7</sup> international recommendations. In connection with settlement systems, another current issue is that of supervision of multinational central securities depositories. A study on the matter is in progress.

One of the chief tasks of central banks is oversight of the stability of the financial system. The key issues for Europe, in this context, relate specifically to the stability of the banking system. The Brouwer group, an outgrowth of a Finnish initiative, is focusing on clarifying the possible threats to the stability of the European banking system as well as the praxis of risk control. The group has issued two related reports, the first containing recommendations and the second, inter alia, on monitoring their implementa-

<sup>6</sup> In the committological procedure, the EU Parliament and the Council delegate decision-making power to the Commission, which makes decisions with the assistance of a committee having committological status.

<sup>7</sup> Committee on Payment and Settlement Systems (G10 countries) and International Organization of Securities Commissions.

tion. Finland has moved quickly eg in respect of recommendations concerning the regulation of financial conglomerates.

As regards new directives and regulations, one should mention the proposed directive on collateral. The aim is to have the proposed directive taken up by the Ecofin Council<sup>8</sup> in mid December. The purpose of the directive is specifically to ease the cross-border use and realisation of collateral and to harmonise EU countries' key regulations on collateral usage.

In July the EU Commission issued a draft regulation on small-value cross-border payments in euro, according to which the cost of making a euro-denominated payment is to be on a bank-specific par with domestic services. In November the EU's Council of Internal Market Ministers agreed that the regulation applying to credit transfers of less than EUR 12,500 is to be effective by July 2003. The same upper limit would apply to the equality of costs of ATM and credit card cross-border payments, but with commencement already in July 2002. The limits will be raised to EUR 50,000 in 2006. The regulation is based on the idea that the whole euro area is a single market area and that euro area citizens must be able to make payments in the area at costs similar to those for domestic payments. Finnish banks have anticipated that they will be forced to raise the prices of domestic giros due to the regulation. The draft regulation is still under consideration by the European Parliament.

In respect of domestic regulation, the key developments are the Government's legislative proposals on supervision of financial and insurance conglomerates and on the restructuring and winding-up of credit institutions. The Government bill on the regulation and supervision of financial conglomerates is in line with the corresponding proposed EU directive, although it is impossible to know the exact timetable for implementation. Key points in the bill include the determination of the coordinating supervisor and the improvement of information flow within conglomerates. The duties of the coordinating supervisor would include overall supervision and supervi-

sion of certain group members involved in other-sector activities. The coordinating supervisor would be either the Financial Supervision Authority (FSA) or the Insurance Supervisory Authority (ISA), according to the dominant sector of the conglomerate. Improvements in information flow will enable conglomerates to operate more efficiently and will facilitate risk management. The draft directive does not define a financial conglomerate's solvency ratio, as there has not been agreement on the matter. Finland places a high priority on swift implementation of the directive, because of the restructuring that has already been accomplished in Finland.

Draft legislation concerning the restructuring and winding-up of credit institutions also covers temporary suspension of operations by deposit banks and the responsibilities of shareholders in a crisis situation. The proposed legislation aims, inter alia, at ensuring harmonisation of the protection of creditors' interests regardless of the credit institution's juridical status.

In connection with the Finnish banking system, the working group on banking services, which was set up by the Ministry of Finance in 1999, has moved ahead on a revision of the Credit Institutions Act. The group recommended a change that would extend the scope of the Act to include both the business of general payments intermediation and the issuance of electronic money. It recommends a new provision on payment transaction societies. The group also recommends new provisions on requirements for non-credit institutions that intend to accept repayable funds from the public. It is also intended that the recommendations increase the availability of banking services.

12 December 2001

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

<sup>8</sup> Ecofin is composed of ministers representing Member State Governments.

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## Public finances and fiscal policy choices

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**T**he slowdown in world economic growth has affected the Finnish economy and hence has had an impact on general government finances. Revenue estimates have been revised downward throughout the year, as the growth of tax bases has slowed. Although overall general government finances are forecasted to remain in surplus in the coming years, the central government surplus will nearly disappear. Moreover, uncertainty surrounding economic growth increases the risk of another reversal of the downward trend of central government debt.

Maintaining a strong budgetary position is crucial, since this will have a major impact on Finland's ability to deal with increased public expenditures in connection with population ageing. If the downward trend of central government debt of the past few years were to be reversed, more stringent adjustment measures would be required at latest in about 10 years, when large cohorts start to retire. For this reason, the choices for fiscal policy are particularly difficult now. In the current situation – that of a weakening economy – a buffer should be created to cover expenditures related to population ageing. At the same time, the growth prospects for the economy should be further strengthened via tax cuts and other structural measures.

### General government surplus will decline

According to the Bank of Finland's recent forecast, central government finances will clearly remain in surplus this year. This is due to payments on a large shortfall in year-2000 tax withholdings, which continue to boost this year's central government revenue. The general government fiscal balance will be only slightly weaker than last year. However, slower economic growth has already narrowed the tax base and several significant downward revisions have been made

to estimates of central government tax revenue. In addition, as central government expenditure has increased somewhat more than budgeted, debt repayment will already this year be more modest than previously forecasted. The central government debt-to-GDP ratio is forecasted to amount to 44% at the end of 2001.

According to the Bank of Finland's forecast, the central government surplus will disappear almost entirely next year, and it is not expected to increase significantly in 2003. As local government finances will still be slightly in deficit, the surplus in overall general government finances will derive from the social security funds. The general government surplus is forecasted at less than 3% of GDP in 2002 – 2003 or about 2 percentage points lower than forecasted in the spring. Stronger economic growth in 2003 will bring the debt ratio down to about 40%. According to the Ministry of Finance's update of the stability programme, the general government fiscal surplus is expected to remain at about 2% up to 2003 and to improve only after that. Central government finances are forecasted to post a small deficit in 2003.

### Balance is weakened by cyclical factors

The surplus in general government finances will contract this year and next year, not only because of a slowing of growth of the tax base but also because of tax cuts, a slight decrease in social security contributions, and an increase in general government expenditure. In 2001 about half of the reduction in the primary balance (financial balance excl. interest payments) is assumed to be structural<sup>1</sup>, ie the result of fiscal measures. The corresponding assumption for 2002 is one-third. Fiscal policy will therefore be eased both this and next year (Table 1). In 2003 fiscal policy is expected to be slightly contractionary. The Bank

**Table 1. General government fiscal position, primary balance, impact of cyclical factors and cyclically adjusted primary balance, % of GDP**

	1998	1999	2000	2001f	2002f	2003f
Fiscal position	1.3	1.9	6.9	4.5	2.6	2.8
Primary balance	4.9	5.0	9.7	7.2	5.0	4.9
Cyclical factors	1.2	1.3	1.5	1.0	-0.1	-0.5
One-off factors*			1.9	1.2	0.8	0.2
Cyclically adjusted primary balance	3.7	3.7	6.3	5.0	4.2	5.1

f=forecast

\* One-off factors are a rough estimate of taxes collected on capital gains and stock option income related to the rise in share prices in 2000. They also include dividends received by the central government in connection with corporate ownership arrangements in 2000.

Sources: Statistics Finland and the Bank of Finland's forecast.

of Finland's forecast assumes that there will be a small reduction in indirect taxes in 2003, whereas tax tables are assumed to remain unchanged, apart from an inflation adjustment. No changes are expected in expenditure developments.

Unfavourable movements in the business cycle and the end of the impact of one-off revenue items largely explain the decrease in the general government primary balance starting with 2001. According to the calculations presented in Table 2, the cyclically adjusted primary balance will decrease by just 1.6 percentage points relative to GDP during the forecast period whereas the unadjusted primary balance is expected to decrease by 4.8 percentage points. The ratio of cyclically adjusted primary balance to GDP is forecasted at about 5%. The Ministry of Finance's update of Finland's stability programme estimates the cyclically adjusted primary balance at around 5% of GDP<sup>2</sup>.

<sup>1</sup> Structural or cyclically adjusted budget balance is calculated by subtracting the impact of cyclical factors from the actual budget balance. The impact of cyclical factors is obtained using a method applied at the ECB, in which the cyclical component of each cyclically sensitive revenue and expenditure item is determined on the basis of deviations-from-trend for tax base and employment. (Cyclically Adjusted Budget Balances: an Alternative Approach, ECB Working Paper No. 77)

<sup>2</sup> The impact of one-off factors is not taken into account in the calculations for the stability programme. On the other hand, the cyclical component has been estimated only on the basis of GDP deviations from trend, which overestimate the share of the cyclical component in periods when slower GDP growth was mainly due to a decline in exports, which have a smaller impact on tax bases than the other aggregate demand components.

The cyclically adjusted primary balance for the central government is estimated at roughly 3–4% for the forecast period. The estimate is based on the actual primary balance excluding cyclical factors affecting central government revenues and expenditures as well as the positive effect of increased one-off factors on central government finances. This estimate shows that about half of the 3.5 percentage point improvement in the ratio of the central government primary balance to GDP in 2000 was due to cyclical and one-off factors. As interest payments by the central government amount to about 2–3% of GDP, central government finances should record a very small structural surplus, ie less than 1% on average during the forecast period.

However, changes in the structural balance can only be assessed in very rough terms. The impact of cyclical factors is difficult to measure as it depends not only on uncertain elasticities of revenue and expenditure items with respect to the tax base and to employment but also on economic performance beyond the forecast period. In the above-mentioned calculations, the rate of economic growth is projected to increase again to more than 3% toward the end of the forecast period. If the strengthening is short-lived, a part of the decrease in surplus caused by cyclical factors will in fact constitute a deterioration of the structural financial balance.

## Long-run outlook is weaker

As the central government's fiscal position is expected to be weaker than estimated in the spring, there is a

need to re-evaluate the previous long-term calculations, which were based on the earlier, more favourable, outlook for the central government surplus. Weaker central government finances will reduce the possibility to pay down the central government debt before population ageing pushes up expenditures on pensions, health care and social services. At the same time, the central government's room for manoeuvre in taxation is in danger of shrinking.

Economic slowdown weakens the outlook for central government debt pay-down compared to earlier estimates. Forecasts done early this year assumed the surplus in central government finances would remain in the coming years at around 2–3% of GDP. In the Ministry of Finance's spring calculations, running up to 2050<sup>3</sup>, central government debt was projected to decline at a rapid rate, even though tax cuts were assumed for the coming years without changes in the bases for expenditures. These long-term calculations were based on the outlook in spring 2001 (see also the Bank of Finland's autumn estimate<sup>4</sup>).

According to the revised calculations based on a weaker outlook, the ratio of central government debt to GDP will decrease, due to the surplus in the primary balance, but at a considerably slower rate than in earlier estimates. It will take about 20 years before indebtedness is below 10%<sup>5</sup>. The possibility of cutting taxes over the next few years – as per the Ministry of Finance's spring calculations – seems remote, without spending cuts. Central government finances will remain at a surplus of about 1% of GDP over the next 10 years. The surplus will then decrease as expenditure related to ageing begins to grow faster in the mid 2010s (Table 2).

<sup>3</sup> Economic Policy Challenges in the coming years, Economic and Economic Policy Surveys, Ministry of Finance 4/2001.

<sup>4</sup> See the article 'Strong public finances provide scope for tax cuts' by Helvi Kinnunen, in the Bulletin 2000/4.

<sup>5</sup> Productivity, employment, earnings and inflation rates are assumed to change in the same way as in Ministry of Finance calculations. Pension expenditure, health care and social security expenses related to population ageing are finance ministry estimates submitted to the European Commission (Budgetary Challenges by Ageing Populations, to be published by the Commission). The calculations do not observe pension reforms that would raise the average retirement age. In contrast to finance ministry calculations, employment pension fund contributions are assumed to remain unchanged.

**Table 2. Financial balances, government sector, 2000–2030, % of GDP**

	General government	Central government	Employment pension funds
2000	6.9	3.5	3.1
2001	4.5	1.9	2.8
2002	2.6	0.3	2.8
2003	2.8	0.6	2.7
2005	4.2	0.9	3.3
2010	3.2	0.9	2.3
2015	1.4	0.7	0.7
2020	0.0	0.6	–0.7
2025	–2.1	0.3	–2.3
2030	–4.0	0.0	–4.0

Sources: Statistics Finland and the Bank of Finland's forecast.

Since scenarios extending over decades involve numerous problems, the paths presented here should not be regarded as forecasts. Long-term calculations produce significantly different scenarios when even small changes are made in tax rates and exogenous variables. Ministry of Finance calculations on productivity and the employment rate assume economic growth to slow to about 2% in the medium term and to approach 1% in the long run. Assuming this is the case, a continuation of current fiscal policy would lead to problems with the fiscal balance or a clearly increasing tax ratio when expenses related to population ageing start to grow.

Although long-run calculations do not enable precise estimates of changes in the central government's fiscal position within the next few decades, they nonetheless show that the leeway for central government finances is very limited. Even a small increase in the ratio of central government expenses to GDP would push central government finances into deficit and reverse the decline in indebtedness, in the event of a long period of sluggish economic growth. Moreover, while there is pressure to cut taxes, fiscal policy choices over the next few years will not only be difficult but will also have far-reaching implications.

## Fiscal policy choices

The rapid improvement in central government finances, especially last year, was largely the result of exceptionally favourable economic conditions and a temporary increase in revenues. This did not produce

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a clear structural surplus. The positive development of revenue has reduced central government indebtedness while expenditure growth has, at least to an extent, been kept under control via spending limits. Expenditure growth has been restrained partially also by cyclical components, such as the slowdown of the growth of employment-related costs. In the coming years the situation will become more problematic as a weakening in employment conditions will automatically increase unemployment and an economic slowdown will lead to lower central government revenue.

From the perspective of sustainability of central government finances, it is important to adhere to the Government's debt reduction target. A clear reduction in central government indebtedness in this decade would create buffers against increased expenditures due to population ageing. On the other hand, an increase in the debt ratio could turn out to be difficult to reverse later if economic growth remains sluggish. The aim to reduce the debt in the coming years is linked also to structural problems in the economy. Despite the rapid economic growth, the employment situation has not improved as expected, and population ageing will cause problems especially if the employment rate should remain at a low level. In or-

der to restrain expenses due to population ageing and maintain the growth of potential output, the key objectives are to raise both the employment rate and the effective retirement age.

Recently announced measures to reform pension systems would enable an increase in the employment rate and a firming of the economy's financial base, providing the measures raise the effective retirement age. As regards the labour supply, further reductions in labour taxes would be beneficial. As structural measures will in any case strengthen general government finances only after a long time-lag, central and local government expenditures should be adjusted in line with the shrinking financial base. In the future, it will also be necessary to consider the allocation of spending more carefully than in the past few years.

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- **Key words: fiscal policy, cyclically adjusted financial balance, sustainability of central government finances**

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## Price stability with changing prices

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**F**inland has experienced nearly ten years of price stability. This article presents a new way of depicting inflation and relative price changes in the same chart and a new measure of the intensity of relative price changes. Our findings show that changes in relative prices have been quite large and declines in individual prices commonplace during the decade of price stability. However, compared to previous years, individual price declines have occurred less frequently in the last twelve months despite the slowing of inflation.

### Inflation – sand or grease?

In the economics literature, it is commonplace to distinguish between ‘real’ and ‘nominal’ shocks. The term ‘shock’ is used whether the effects on the economy are judged to be good or bad.

All real (supply) shocks are changes in the structure of demand and supply, which call for changes in relative prices. Such changes should not have predictable effects on the general price level. Nominal (aggregate demand) shocks, on the other hand, include all changes that affect the general price level or its rate of change and which should not have predictable effects on relative prices.

An increase in the demand for an individual commodity (good or service) is an example of a real shock. This should be followed by an increase in the relative price of the commodity. The relative price could decline later, if the price rise attracts new producers into the sector. Another example of a real shock is an innovation that increases productivity, which then leads to a decrease in the commodity’s relative price. Such a change in relative price can be permanent. More obvious real shocks would include significant changes in the prices of raw materials.

Of the nominal shocks, one could mention an easing of monetary policy. This would increase aggregate nominal demand and ultimately lead to a rise in the price level or an acceleration of inflation.

In practice, distinguishing between nominal and real shocks is difficult, if not impossible. Moreover, changes in relative prices and in the price level are not truly independent of each other. Because of price rigidities, a significant rise in a good’s relative price can bring about a rise in the price level. Correspondingly, an easing of monetary policy is likely to boost the price level gradually, in steps. When some prices rise at an earlier stage than others, there will also be temporary changes in relative prices during the adjustment period.

Flexibility of relative prices is a central feature of the price mechanism. In principle, relative prices can react quickly to real shocks and the price mechanism can function well regardless of the average rate of increase in prices, at least if the inflation rate is stable and expected. Experience shows that a high rate of inflation is generally associated with wide changes in inflation and much uncertainty about future inflation rates. When changes in the rate of inflation are large, it is difficult to distinguish between changes in relative prices and changes in the price level. This means that the quality of price information deteriorates and the functioning of the price mechanism weakens as a result. It is as if one were to throw *sand* into the wheels of the market economy, as Milton Friedman put it in his 1976 Nobel Lecture.

On the other hand, price stability or very low inflation means that some prices will have to fall in absolute terms. If prices do not adjust downward in such an environment, relative prices cannot have the required flexibility and the price mechanism will not function properly. Acceptance of a margin of positive inflation creates leeway for changes in relative

prices. According to this view, modest inflation works like *grease* in the wheels of the market mechanism, to borrow an expression used already in the early 1970s by James Tobin, who later became another Nobel laureate.

The Chairman of the Board of Governors of the US Federal Reserve System, Alan Greenspan, has stated on several occasions that price stability obtains when households and companies need not take account of prospective changes in the general price level in their economic decision-making. Industrial countries' central banks have long considered price stability to be a prime policy objective, and they have succeeded fairly well in achieving it. This is apparent in low inflation expectations and popular acceptance of the objective.

If a stable price level is expected and accepted, small changes in the rate of change of the consumer price index (CPI), which is a measure of average inflation, need not be significant in the eyes of the general public. By contrast, relative prices remain important and may even receive greater attention as they become easier to perceive.

From the perspective of monetary policy, price stability of course does not imply that price monitoring and inflation forecasting become less important. But even so, the importance of relative prices is underscored. This is already reflected in growing inter-

est in constructing inflation indicators that eliminate the main effects of real shocks.

### How frequent are declines in individual prices?

Finland has been experiencing price stability for almost ten years now. The annual inflation rate stayed below 2% throughout the period 1994–1999, being close to zero in 1995 and 1996. In the last couple years inflation has exceeded 2% and actually rose above 4% in summer 2000. The main factors in the pickup in inflation have been rises in housing costs and fuel prices, but the prices of services have also been increasing at a faster rate than before. More recently, inflation has again been slowing rapidly (Chart 1).

During the 1980s, when the inflation rate was fairly high, fresh inflation numbers were usually accompanied by a listing of items having the greatest effects on the rise in the CPI. Generally there were no comments on price declines since these occurred so seldom. The exceptions included the occasional decline in prices of fuel and seasonal food products as well as discount sales.

During the period of price stability, the list of declining prices has grown much longer. This be-

**Chart 1. Finnish CPI inflation**

Inflation, Jan 1996 – Oct 2001



Source: Statistics Finland.

comes apparent if one examines changes in prices of individual commodities included in the CPI.

The CPI, which is calculated and published monthly by Statistics Finland, measures movements in prices of commodities purchased by households resident in Finland. The index uses the Laspeyres formula, based on 1995 consumption shares. The weights change over time as relative prices change. The CPI includes 458 different components.

We have obtained from Statistics Finland a full set of monthly data covering the CPI with all its components and their respective weights from the beginning of 1995. The Table gives the frequency distribution of individual percentage price changes for twelve-month periods ending in October of each year in 1996 – 2001. The breakdown is by per cent of all 458 CPI items whose prices changed by the specified percentages.

In the Table, changes of more than 5% magnitude (positive or negative) comprise the class of largest changes, followed by those in the range 2–5% and those of magnitude less than 2%. The unweighted frequencies in the upper panel indicate relative frequencies of rising and falling prices for CPI items but do not account for relative importance of the changes to households. Thus the lower panel is constructed to reflect the importance of each class of price changes in households' average consumption basket. Although the class limits are arbitrary, the

frequencies give a rough picture of relative frequencies of rising vs falling prices. This is most visible in the last (balance) column of the Table, which gives the difference between the combined percentages of the first two columns minus the combined percentages of the last two columns. The rationale for excluding the middle column (smallest changes) is the possibility of sampling errors

From the upper panel one can see that falling prices were fairly common in the years 1996–1998. Almost 20% of the 458 item prices fell by more than 2% in the previous twelve-month period. In 2000 the frequency of falling CPI prices decreased to nearly 10% and rising price frequency increased to nearly 50% at the same time as the rate of inflation accelerated.

The difference between 2000 and 2001 is noteworthy. The frequency of stable prices decreased and that of rising prices increased notably, even though the rate of increase in the CPI slowed from over 4% to less than 2%. This reflects the fact that the deceleration in inflation was due to decreases in a few heavily weighted prices. Generally speaking, leftward drift of the frequency distribution in the Table is a warning sign of increasing inflation risk.

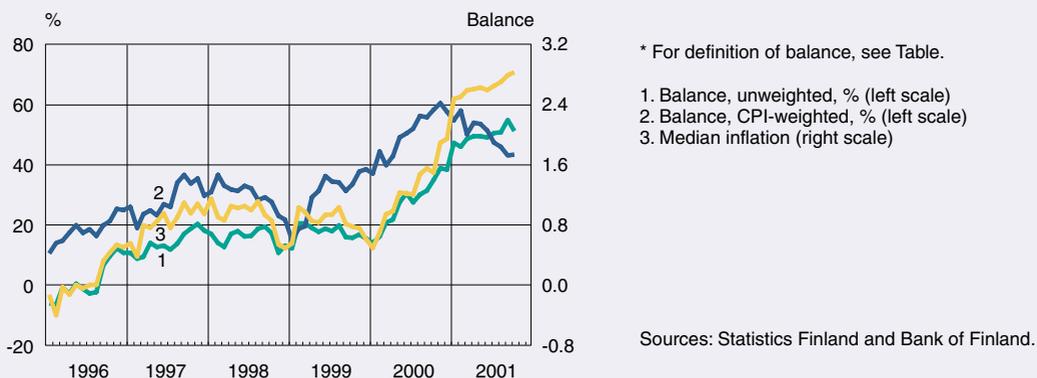
The balances in the lower panel of the Table indicate that commodities whose prices have been on the rise have long dominated commodities whose prices have trended downward in the average household

**Table. Frequency distribution of price changes within the CPI, %**

October	$p > 5$	$2 < p \leq 5$	$-2 \leq p \leq 2$	$-5 \leq p < -2$	$p < -5$	Balance*
Unweighted						
1996	11.1	16.8	53.7	9.2	8.7	9.6
1997	11.1	25.8	45.0	11.1	7.0	18.8
1998	10.7	25.1	45.6	11.1	7.4	17.2
1999	9.6	22.9	50.7	10.5	6.3	15.7
2000	14.4	30.6	45.0	5.9	4.1	34.9
2001	25.1	33.0	35.2	4.1	2.6	51.3
Weighted						
1996	18.1	22.2	40.7	7.7	11.3	21.3
1997	9.6	36.2	42.1	5.3	6.7	33.8
1998	10.4	33.6	39.6	11.4	4.9	27.7
1999	15.6	32.1	38.2	7.2	7.0	33.5
2000	19.9	45.0	28.7	4.9	1.5	58.4
2001	20.2	35.9	31.2	1.9	10.7	43.5

\* The balance is calculated by subtracting the percentage share of negative price changes ( $p < -2\%$ ) from the percentage share of positive price changes ( $p > 2\%$ ). Because of rounding, sums may not be exact.

**Chart 2. Balance\* of rising vs falling prices and median inflation**



consumption basket. Except for October 2001, the consumption share-weighted balance has been considerably larger than the corresponding unweighted balance. The weighted balance decreased sharply between 2000 and 2001, while the unweighted balance increased. This confirms the fact that the price declines were concentrated in a few heavily weighted items.

Chart 2 presents the corresponding balances for each month in the period January 1996 – October 2001. A curve showing the median inflation rate is also included, which depicts the price change for which the frequency distribution of price changes reaches its peak.

Acceleration of inflation in 2000 shows up, as expected, in a pronounced increase in the number of rising prices. Both the unweighted and weighted balances more than doubled. The consumption-share weighted balance started to increase already in the first half of 1999 and peaked around the end of 2000, at which time over 65% of the CPI prices rose and only about 5% fell. Since then it has been trending downward while the unweighted balance has continued to increase. This provides further evidence that the slowing of inflation has been tied to just a few heavily weighted commodities. The unweighted balance has followed a path similar to that of the median inflation - another sign of the continuation of increasing frequency of rising prices throughout 2001.

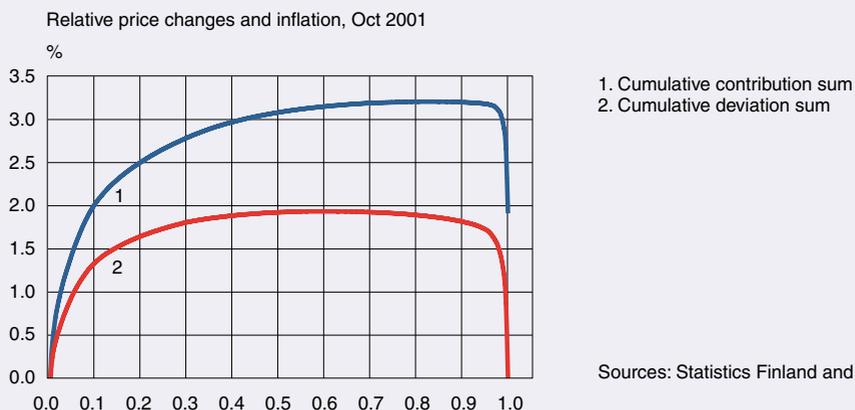
## Composition of inflation: component contributions

The effect of an individual component's price change on the whole CPI is measured by multiplying the percentage price change by the component's weight in the CPI. The weight reflects the component's importance in the average household's consumption basket. The inflation effect of a component, calculated in this way, is referred to as the component's *contribution* to the inflation rate. By calculating the contributions of all the components and ordering them by size, one can depict in a single chart both the changes in relative prices and the rate of change in the total CPI.

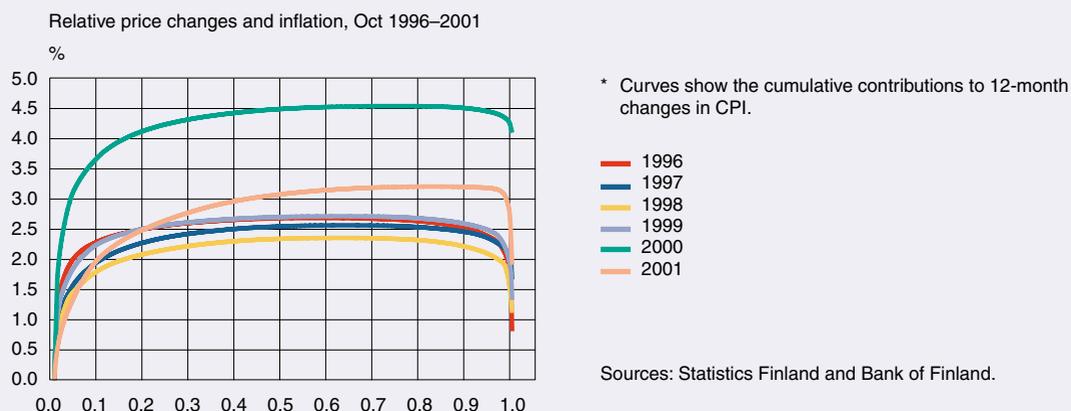
Chart 3 presents two curves. We call the upper curve the *cumulative contribution sum* and the lower curve the *cumulative deviation sum*. The curves are constructed on the basis of twelve-month (to end October) price changes for the 458 components of the CPI, each weighted by the component's CPI weight. The method of calculation is presented below. Each curve begins at zero, and the horizontal axis is normalised to run from zero to one.

By ordering the component contributions by size and calculating the cumulative sum, one can construct a curve that depicts both rising vs falling prices and the rate of change in the total CPI. The curve is concave upwards, due to the size-ordering of contribu-

**Chart 3. Composition of inflation: cumulative contribution and deviation sums**



**Chart 4. Composition of inflation: cumulative contribution sum\***



tions. If each component had the same weight and all prices rose at the same rate, the curve would be a straight line ending at the rate of change in the total CPI.

From the chart, we see that the increase in the CPI for the twelve-month period ending October 2001 was 1.9%. The curve is sharply rising at first, after which it trends gently upward for most of its length and ends with an abrupt drop. This indicates that falling prices were not very common. Only a few prices fell, but their impact on the CPI was large. The Table tells the same story.

Chart 4 presents the cumulative contributions for each of the years 1996–2001. All six curves reflect

CPI changes for twelve-month periods ending in October.

All of the curves have a long flat stretch. This means that many item price changes have been so small that they have added only marginally to the cumulative sum and thus have had little impact on the rate of change of the total CPI.

Each of the curves for 1996–1999 rises sharply at the left side and declines sharply at the end. Thus the period's price stability was not primarily the result of a lack of rising prices but was also importantly affected by the occurrence of falling prices. There are however differences across the different years' curves, even though the differences in corre-

sponding rates of change in the CPI were not large. For example, in 1996 the positive CPI-contributions of rising prices and negative contributions of falling prices were greater than those for 1997 and 1998. This suggests that in 1996 relative price changes were particularly intensive.

In general, an acceleration in overall inflation should show up as an upward and rightward shift in the peak of the curve. This is what happened with the year-2000 curve, albeit the upward shift is due mainly to a few significant (fuel) price rises. Price rises were however more common and declines less common among the other CPI components. The combined contribution of rising prices to the rate of increase in the total CPI was nearly twice as strong as in the period 1996–1999. The increase in the CPI in 2001 was a couple percentage points less than in 2000, despite the fact that component price rises were more numerous in 2001.

## Intensity of relative price changes

If all the CPI weights were equal and all prices had risen at the same rate, the cumulative contribution curve would be a straight line ending at the rate of CPI inflation. The larger the relative price changes and the greater their importance in the consumption basket, the more extreme the curves' concavity and the greater the area between the curve and a straight line from starting to ending point. One possible measure of the magnitude of relative price changes would be that same area, which could be called an indicator of the intensity of relative price changes. The problem here is that the straight line used for comparative purposes assumes equal component weights. Thus we propose a different measure.

Our measure is calculated in the same way as the cumulative contribution. First, the deviation of each component's price change from the rate of change of the total CPI is calculated. Then each component's deviation from inflation is multiplied by the component's weight, which gives the component's contribution to average deviation from inflation. The contributions (which sum to zero) are ordered by size, from largest (positive) to smallest (largest-magnitude negative). Taking the cumulative sums of the contributions to average deviation from inflation gives the points for a concave curve that begins and ends at

zero. The ordering here is not necessarily the same as for contributions to inflation, but this is of no concern since the focus is now on changes in relative prices.

The lower curve in Chart 3 shows the cumulative component deviations from the percentage increase in the CPI for the twelve-month period ending October 2001, calculated as explained above. The area between this curve and the horizontal axis indicates the intensity of relative price changes in a manner that enables comparisons across time periods. The greater the area, the higher the intensity of relative price changes. Chart 5 displays cumulative deviations for the same years as in Chart 4. The observations reflect price changes for twelve-month periods ending in October.

Based on the curves, it appears that the intensity of relative price changes was high in October 1996, when the average price rise was only about 0.5%, and in October 2000, when the twelve-month inflation rate exceeded 4%. The shapes of the two curves are nonetheless quite different. The curve for 2000 rises sharply at the start but soon turns downward, whereas the curve for 1996 is almost symmetric. The intensity of relative price changes is fairly high also for October 1999, when the first signs of a pickup in inflation appear. The curves depicting relative price changes for October of 1998 and 1999 are fairly symmetric in that the positive and negative deviations from inflation are roughly of the same magnitude.

In Chart 5 the areas between cumulative deviations curves and the horizontal axis are given in parentheses after each respective year designation. The areas were calculated by adding the cumulative deviations and dividing the total by the number of components. By dividing in this way, one obtains the above-mentioned normalisation of the horizontal axis to the interval  $[0,1]$ . The number thus obtained is a quantitative measure of *the intensity of relative price changes*.<sup>1</sup> Like other averages, this one also eliminates information contained in the distribution, here eg the location of the peak, but it also enables comparison across time periods. The advantage is that the intensity of relative price changes calculated for each time period can be presented as a time series.

<sup>1</sup> This measure is very highly correlated with the more commonly used measure of relative price variability (RPV) defined as the square root of the weighted second moment of the distribution of price changes.

Chart 6 shows the intensities of relative price changes together with actual inflation rates for the period January 1996 – October 2001.

The intensity of relative price changes peaked in 1996, when overall inflation was at its lowest. During 1997 inflation accelerated just as the intensity of relative price changes declined. The situation in 1998 was the reverse. The intensity of relative price changes continued to increase during 1999 and inflation began to accelerate rapidly toward the end of the year. The intensity of relative price changes fell sharply in 2000 but turned up again in 2001 while inflation continued its slowing trend.

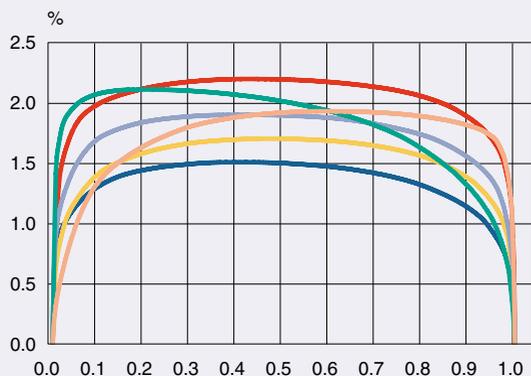
Finland's entry into the European Union resulted in substantial shocks to the real economy. The main

effects were notable declines in relative prices of food products. In an environment of price stability, this was effected via absolute price reductions. This is an example of a real shock that is positive from the consumers' viewpoint. It also explains in part why the intensity of relative price changes was still high in 1996. Another example of a positive real shock is the 1998 decline in fuel prices, which was accompanied by yet another real shock – viz the notable decline in prices of personal computers and mobile phones that resulted from a rapid increase in productivity in the ICT sector. A negative real shock occurred in autumn 1999, when fuel prices turned sharply upwards.

Such real shocks affect only relative prices and hence our indicator of the intensity of relative price

**Chart 5. Changes in relative prices: cumulative deviation sum\*, 1996–2001**

Relative price changes, Oct 1996–2001



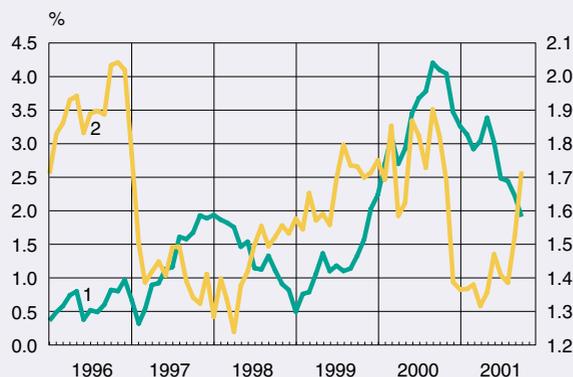
\* Curves show the cumulative deviations from 12-month change in CPI, in Oct 1996–2001. The figure in parentheses after each year designation is the area between the curve for that year and the horizontal axis.

- 1996 (2.0)
- 1997 (1.3)
- 1998 (1.5)
- 1999 (1.5)
- 2000 (1.8)
- 2001 (1.7)

Sources: Statistics Finland and Bank of Finland.

**Chart 6. Intensity of relative price changes and inflation**

Inflation and change in relative prices, Jan 1996 – Oct 2001



- 1. Inflation (left scale)
- 2. Change in intensity (right scale)

Sources: Statistics Finland and Bank of Finland.

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changes. Large individual relative price changes, such as movements in oil prices, are often reflected in same-direction movements in the price level or inflation rate.

Several studies have in fact found a positive correlation between inflation and skewness in the distribution of relative price changes. The same seems to hold for Finland in the period studied here, 1996–2001, especially the last two years. In 2000, when inflation accelerated, the distribution of relative price changes was skewed toward large changes, whereas in 2001, inflation slowed and relative price changes were skewed in the other direction. It should however be noted that in the other years the distribution of relative price changes was not particularly skewed, even though there were wide differences in the intensity of relative price changes.

Identification of a real shock is easy in the case of significant change in the price of a heavily weighted commodity. On the other hand, many of the other relative price changes that characterise a dynamic market economy go unnoticed.

Nominal shocks are more difficult to identify because they are abstract, difficult to observe, and relate to changes in monetary and fiscal policies and in propensities to save and invest, as well as to changes in export demand. Changes in relative prices are visible in price tags, whereas an increase in aggregate demand is often noticed only after the fact and only indirectly. It is widely thought that Finland experienced a negative nominal shock in the early 1990s. Another widely held view - albeit less so than the preceding one - is that in the last couple years the Finnish economy has experienced a positive nominal shock. Discussions on the risk of overheating suggest this, and the fact that at least until early autumn price rises have been increasing in frequency

and declines decreasing in frequency is consistent with the view. This prospect is also apparent from the decrease in the intensity of relative price changes in late 2000.

## Concluding remarks

Inflation behaviour can be described and analysed from many perspectives. In this article changes in the general price level are analysed in terms of relative price changes. This enables a broader and deeper understanding of price dynamics.

The importance of relative prices is underlined in an environment of very low inflation. Significant changes in prices of individual commodities are often visible also in movements in the whole CPI. These kinds of changes, however, do not explain or forecast movements in overall inflation. On the other hand, rising prices, viewed on a commodity-specific basis, may be becoming more frequent and falling prices less frequent, even when measured inflation is slowing because of declines in the prices of some individual commodities.

Finland's experiences in the latter half of the 1990s provides examples of both situations. An interesting finding is the significance of falling prices in several of those years – which argues against generalising the assumption of downward inflexibility of prices to all situations.

22 November 2001

■ **Key words: inflation, relative prices, price stability**

## Items

### Pentti Hakkarainen appointed to the Board of the Bank of Finland

The President of the Republic, Ms Tarja Halonen, appointed Mr *Pentti Hakkarainen*, LL M, MS (Econ), as Member of the Board of the Bank of Finland with effect from 1 February 2002. The term of office for a board member is five years.

Mr Hakkarainen has previously served as Deputy Managing Director of the Sampo Group, Managing Director of the Leonia Group and CEO of Leonia Bank plc as well as Managing Director of OKO Bank Consolidated, before which positions he worked in the financial division of Outokumpu Oyj.

### Supplementary budgets

Parliament approved the second supplementary budget for 2001 on 7 November 2001. A capital injection of about EUR 0.5 billion will be used to improve the financial structure of the partly-state-owned teleoperator Sonera.

On 28 November 2001 Parliament approved the third supplementary budget for 2001. With economic prospects on the decline, tax revenue estimates were lowered by EUR 0.8 billion in net terms. Revenues from income taxes were reduced the most, by about EUR 0.6 billion. More than EUR 0.4 billion of the reduction is accounted for by lower corporate income tax revenues, as business profitability is deteriorating. In addition, VAT revenue was revised downward by EUR 0.2 billion. Central government debt amortisation will be reduced by EUR 0.8 billion.

### Commemorative Finnish markka coins

On 26 September 2001, the Ministry of Finance decided on the striking of commemorative Finnish markka coins. This entails the issue of a maximum of 60,000 gold commemorative coins with a nominal value of one markka and a maximum of 500,000 copper-nickel commemorative coins with a nominal value of one markka.

The purpose of the issue of gold and copper-nickel one-markka commemorative coins is to solemnise the end of the markka era. The basis for the design of the gold markka coin is the work of the sculptor Reijo Paavilainen and the basis for the design of the copper-nickel markka coin is the work of the sculptor Antti Neuvonen.

The obverse of the gold coin features a heraldic lion and the reverse features the stylised trunk and roots of a tree. The obverse of the copper-nickel coin features a heraldic lion and the reverse the trunk, branches and cones of a spruce.

The gold coin weighs 8.64 grams and measures 22 millimetres in diameter. The gold coin is made of an alloy the weight of which includes 750 gold per mil, 125 silver per mil and 125 copper per mil. The copper-nickel coin weighs 6.1 grams and measures 24 millimetres in diameter. The alloy comprises 75% copper and 25% nickel.

The gold coins went on sale in October–November 2001 via Rahapaja Moneta at a price of FIM 1,750 each. The copper-nickel coins are on sale in R Kiosks from the beginning of December 2001 at FIM 19 each.



# The Eurosystem's monetary policy instruments

19 November 2001

## 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 changed six times. Effective 14 November 2001, the minimum bid rate is 3.25%. In the new procedure the minimum bid rate signals the monetary policy stance, which previously was indicated by the rate applied to fixed rate tenders.

The Eurosystem uses the rates on its standing facilities to bound overnight market interest rates. The interest rates on the marginal lending facility and the deposit facility are set separately by the Eurosystem.

<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.

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

## Open market operations

Open market operations play an important role in 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.

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

## 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 collat-



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

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



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## Abstracts

### Discussion papers

#### **Should new or rapidly growing banks have more equity?**

Juha-Pekka Niinimäki  
16/2001

- Key words: financial intermediation, relationship banking, financial fragility, bank regulation, deposit insurance, moral hazard, product quality

There is substantial evidence that new banks and rapidly growing banks are risk prone. We study this problem by designing a relationship-lending model in which a bank operates as a financial intermediary and centralised monitor. In the absence of deposit insurance, the bank's limited liability option creates an incentive problem between the bank and its depositors, the likely outcome of which is a reduction in the amount of resources allocated to monitoring its borrowers. Hence, the bank must signal its safety to depositors by maintaining its equity ratio held. The optimal equity ratio is dynamic, ie new banks need relatively more equity than established banks, which enjoy profitable old lending relationships – charter value – that reduce the incentive problem. However, if an established bank grows rapidly, its share of old relationships also decreases and the bank will have

to raise its equity ratio. With deposit insurance, regulators should set higher equity requirements for new banks and rapidly growing banks than for those in a more established position. The results of the model can be extended to more general inter-firm control of credit institutions.

### Financial conditions indexes

David Mayes – Matti Virén  
17/2001

- Key words: financial conditions, asset prices, house prices, stock prices

This paper provides an exposition of the nature, means of estimation and uses of Financial Conditions Indexes (FCIs) and their relationship to the more common Monetary Conditions Indexes (MCIs) that are used by market analysts, international organisations and central banks. Using panel datasets for Western Europe we explore how asset prices, particularly house and stock prices, can provide useful additional indicators of future changes in output and inflation. We find a clear role for house prices but a poorly determined relationship for stock prices. Unfortunately the most useful role for FCIs comes from their incorporation of high frequency data and the opportunity this gives for extracting information about changes in market expectations for inflation and output. This helps market participants make judgements about likely central bank reactions and helps central banks assess the stance of policy between forecasts. While stock prices are high frequency, house prices are not. At quarterly frequency central banks in particular will want to use traditional economic forecasting methods and summary indicators like FCIs will have only a limited role. We illustrate how such an FCI can be used, drawing on monthly data for Finland.

### Monetary policy rules in practice: Evidence from New Zealand

Angela Huang – Dimitri Margaritis – David Mayes  
18/2001

- Key words: monetary policy, Taylor rule, inflation targeting, New Zealand



We use the ten years of experience in inflation-targeting in New Zealand since 1989 to test whether monetary policy appears to conform to the simple rules that have been recommended for it in the literature. Of the inflation targeting central banks, the Reserve Bank of New Zealand has both the longest experience and probably the most clearly defined target and policy framework for achieving it. We show that while a Taylor rule with the standard parameters used in the United States does indeed describe New Zealand monetary policy quite well, the Reserve Bank has focused rather more strongly on price stability, as required by its Policy Target Agreements. However, while the conduct of New Zealand monetary policy as set out in the Monetary Policy Statements is firmly based on targeting the inflation rate in the future, we find, using the Bank's own forecasts, that targeting inflation close to the present appears to be a better description of policy. Furthermore, restricting the policy choice to the information available to the Reserve Bank at the actual time of policy settings and ignoring subsequent revisions to published statistics does not result in a much improved explanation of its actions. We find a clear 'smoothing' element to the Bank's policy rather than immediate response to every small fluctuation. We show further that some of the variables that enter the policy rule have slightly asymmetric cycles. From symmetric and asymmetric cointegration tests on the long-run relationship between interest rates, the output gap, and inflation, we show that there is insufficient evidence to suggest that monetary policy has been asymmetric in treating upside inflationary pressures differently from those towards deflation.

### **Labour taxation and employment in trade union models:**

#### **A partial survey**

Erkki Koskela

19/2001

- Key words: union bargaining, labour taxation, tax progression

This paper uses a union bargaining framework, where the wage rate is negotiated between the representatives of employees and employers and firms unilaterally determine employment, to discuss the relation-

ship between labour taxation and employment. In imperfectly competitive labour markets higher labour taxes – income and payroll taxes – will increase labour costs and have negative effects on employment. Tax progression tends to moderate wages and boost employment. Moreover, if labour tax bases are unequal due to tax exemptions, the structure of labour taxation matters so that the tax wedge may not be a sufficient statistic to describe the channel of influence of labour taxation. Finally, distortionary effects of labour taxes in more corporatist economies should be smaller than in economies with more decentralised wage bargaining. Empirical evidence – though not always very strong – supports these notions.

### **Output gaps and technological progress in European Monetary Union**

Maria Antoinette Dimitz

20/2001

- Key words: output gap, potential output, CES production function, EMU

Output gaps for ten European countries and the United States are estimated based on a CES production function with input augmentation in technological progress. The substitution parameter is estimated from the coefficients of the labour and capital demand functions. Estimation is carried out using Johansen's cointegration method. For six of the eleven countries analysed, the use of the Cobb Douglas form would not be appropriate. The output gap estimates show a similar cyclical pattern for all countries. They remain mostly within  $\pm 4\%$ , except for Finland and Greece. Separating labour-augmenting and capital-augmenting technological progress gives insight into the driving forces of growth for individual countries.

### **Technological development and concentration of stock exchanges in Europe**

Heiko Schmiedel

21/2001

- Key words: Europe, financial exchanges, panel data, technical efficiency



This paper provides an explanation of technical inefficiencies of financial exchanges in Europe as well as an empirical analysis of their existence and extent. A single-stage stochastic cost frontier approach is employed, which generates exchange inefficiency scores based on a unique unbalanced panel data set for all major European financial exchanges over the period 1985–1999. Overall cost inefficiency scores reveal that European exchanges operate at 20–25% above the efficiency benchmark. The results also affirm that size of exchange; market concentration and quality; structural reorganisations of exchange governance; diversification in trading service activities; and adoption of automated trading systems significantly influence the efficient provision of trading services in Europe. Over the sample period, European exchanges notably improved their ability to efficiently manage their production and input resources.

### **Stock exchange alliances, access fees and competition**

Oz Shy – Juha Tarkka  
22/2001

- Key words: stock exchange alliances, access fees, competition among stock exchanges

This paper investigates the market consequences of alliance formation among stock exchanges. These alliances enable brokers to match investors internationally at their local market, thereby eliminating the need for brokers to maintain memberships in foreign stock exchanges. We sort out the conditions under which alliance formation increases profits for stock exchanges and brokers, and how changes in fee structures affect investors' participation rates and welfare. Finally, we examine several methods for implementing access fees and their welfare implications.

### **Should unemployment benefits decrease as the unemployment spell lengthens?**

Tuomas Saarenheimo  
23/2001

- Key words: unemployment benefit, unemployment, search models

It has become a conventional wisdom in economic policy debate that, in order to minimise adverse effects on employment, unemployment benefits should decrease with the unemployment spell. This paper, using a series of simple search models, shows that the theoretical result regarding the optimality of a declining unemployment benefit profile is largely a result of specific modelling assumptions and fails to hold in a more general setting. While any pure reduction of unemployment benefits always improves employment, a redistribution of unemployment benefits from the long-term unemployed in favour of the short-term unemployed can either increase or decrease unemployment and unemployment benefit expenditure. The direction of the effect depends, inter alia, on the structure of unemployment and on the extent to which employed workers can reduce their lay-off probability.

### **Securities market ATSS. Concepts, their roles and related policy issues**

Kari Korhonen  
24/2001

- Key words: alternative trading system, ATS, ECN, exchange, equities market, bond market, oversight, supervision, systemic risk, investment services directive

The aim of this paper is to clarify the concept of alternative trading systems (ATS) and to present an interpretation of their role in the securities markets. The discussion focuses on trading venues related to debt instruments and equities. Geographically, the American and European markets are the focus of interest. In brief, the primary aim of the paper is to demystify ATSS. Secondly, the paper analyses general policy issues raised by ATSS and concludes with an analysis of selected issues related to the Investment Services Directive.

The main sources available on the subject are reports published by market participant lead associations, regulators or international organisations. As in all fields of the 'new economy', the most up-to-date information sources are publications issued by operators themselves. Moreover, the use of news articles (often online publications) has been deemed appropriate in this context.



## BOFIT Discussion Papers

### **Some empirical tests on the integration of economic activity between the Euro area and the accession countries**

Ilkka Korhonen  
9/2001

- Key words: optimal currency area, monetary union, EU enlargement

This note looks at the correlation of short-term business cycles in the euro area and the EU accession countries. This issue is assessed with the help of vector autoregressive models. There are clear differences in the degree of correlation between accession countries. For Hungary and Slovenia, euro area shocks can explain a large share of variation in industrial production, while for some countries this influence is much smaller. For the latter countries, the results imply that joining the monetary union could entail reasonable large costs, unless their business cycles converge closer to the euro area cycle. Generally, for smaller countries the relative influence of the euro area business cycle is larger. Also, it is found that the most advanced accession countries are at least as integrated with the euro area business cycle as some small present member countries of the monetary union.

### **Currency crises in emerging markets: Capital flows and herding behaviour**

Tuomas Komulainen  
10/2001

- Key words: currency crises, emerging markets, multiple equilibria, herding behaviour

This study shows that due to herding behaviour and possible capital outflows, emerging market countries are vulnerable to multiple equilibria situations and currency crises. It uses a model by Jeanne (1997), where currency crises can be formed by multiple equilibria and self-fulfilling expectations. We determine the country fundamentals according to balance of payments approach. In this study we introduce

capital flows, which depend from crisis probability, into the model. The capital flows are further assumed to follow herding behaviour, which produces a reason and mechanism for the large capital outflows witnessed during the recent crises. The range of country fundamentals, where self-fulfilling crises are possible, is now larger than without capital flows and herding behaviour. Consequently, the country fundamentals have to be better, if the country wants to stay totally out of crises. The model further points out lender interdependence as one shortcoming in the current structure of international capital markets. An empirical application of the model to the Mexican and Asian crises shows that when the possible capital outflows are included, the fundamentals of most emerging market countries were inside the range of multiple equilibria in 1994 and 1996, and so self-fulfilling crises were possible.

### **Substituting a Substitute Currency – The Case of Estonia**

Kari Heimonen  
11/2001

- Key words: euro, dollar, currency substitution, currency demand.

This study evaluates substitution of foreign currency balances in Estonia, a transition economy neighbouring countries participating in EMU. The focus is on substitution between dollar and euro balances in the three basic functions of money – unit of account, store of value and means of payment. While traditional models for currency substitution concentrate on substitution between a domestic currency and aggregate foreign currency balances, we look at substitution between the dollar and the euro or euro-related foreign currency balances. We find substitution between dollarisation and euroisation to be asymmetric in the short run, which suggests that inertia, irreversibility and ratchet effects favour the euro. No significant evidence of asymmetries in the long run was detected. In general, the traditional model for currency substitution explains the dynamics of the euro and dollar as substitute foreign currencies.



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**The role of the new, entrepreneurial private sector in transition and economic performance in light of the successes in Poland, the Czech Republic and Hungary**

Jan Winiński  
12/2001

■ Key words: new private sector, transition, growth, Poland

The central theme of this paper is the role of the new entrepreneurial private sector, established after the fall of communism, in output recovery and, more generally, in economic expansion of post-communist economies. This role is considered specifically in the context of the successes in Poland, the Czech Republic, and Hungary. The author notes a substantial difference between the performance of the new private sector and the privatized sector in the short to medium run (3–7 years), from the start of privatization.

New private firms typically enter the economic game with well-established *de jure* and *de facto* property rights and with industrial relations based on market economy rules. Unlike the public sector or privatised firms, the labor force of these firms is not demoralised by the change to market-economy rules. As a result, they often perform better and are quick to increase their share of aggregate output. This also helps the economy as a whole emerge earlier from transitional recession.

The author discusses two hypothetical paths of recovery and expansion; one with and one without a dynamic new private sector. The determinants for establishment and growth of new private firms are considered. In addition to the specific rules and general framework of transition, the study concludes that broad institutional fundamentals of political liberty, law and order, and trust contribute to the successful emergence of this new entrepreneurial sector.



## Finland in brief

### Land, climate and population

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

Finland has a population of 5,171,302 (31 December 1999) and an average population density of 17 per square kilometre. The largest towns are Helsinki, the capital, with 551,123 inhabitants, Espoo 209,667, Tampere 193,174, Vantaa 176,386 and Turku 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. All the Nordic countries joined the Shengen area on 25 March 2001.

Having abolished most quantitative restrictions on foreign trade in 1957, Finland first took part in European free trade arrangements under the 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 678 (EUR 114) billion in basic values in 2000, 1.4% was generated in agriculture, hunting and fishing, 2.3% in forestry, 28.3% in industry, 5.9% in construction, 11.5% in trade, restaurants and hotels, 9.5% in transport and communications, 3.9% in finance and insurance, 17.2% in other private services and 19.8% by producers of government services. Of total employment of 2.3 million persons in 2000, 6.2% were engaged in primary production, 28.1% in industry and construction and 65.7% in services.

In 2000 expenditure on the gross domestic product in purchasers' values amounted to FIM 780 (EUR 131) billion and was distributed as follows: net exports 9.4% (exports 42.9%, imports -33.6%), gross fixed capital



formation 19.3%, private consumption 49.5% and government consumption 20.6%. Finland's tax ratio (gross taxes including compulsory employment pension contributions relative to GDP) was 46.8%.

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 2000 was USD 23,417.

**Foreign trade.** EU countries absorb the bulk of Finnish merchandise exports. In 1996–2000 their average share was 55.5%. Over the same period, Finnish exports to other European countries (including Russia) accounted for 18.5% and to the rest of the world for 26.0%. During the same period the regional distribution of Finnish merchandise imports was quite similar to that of exports: EU countries accounted for 58.3%, other European countries for 17.4% and the rest of the world for 24.3%.

In 2000 the share of forest industry products in total merchandise exports was 27.1%, the share of metal and electrical products 55.7% and the share of other goods 17.2%. Raw materials and intermediate goods and energy together accounted for 53.1% of merchandise imports, capital goods for 24.0% and durable and non-durable consumer goods for 22.9%.

**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** (30 September 2001). Finland has three major groups of deposit banks with a total of about 1,523 branches. In addition there are five smaller banks and banking groups. The commercial banks have a total of 17 foreign branches, subsidiaries and associate banks and 16 representative offices abroad. There are 40 savings banks, a group of cooperative banks (244) and 42 local cooperative banks. In addition, 7 foreign banks have branches and 7 foreign banks have representative offices in Finland.

**Financial markets.** The total stock of domestic credit amounted to FIM 718.6 (EUR 120.9) billion at end-September 2001 and was broken down by lender group as follows: deposit banks 62%; insurance companies 5%; pension insurance institutions 14%; other credit institutions 9%; central and local authorities and social security funds 10%.

In the money market, the total value of instruments outstanding was about FIM 132.8 (EUR 22.3) billion at end-September 2001; bank certificates of deposit accounted for 49% of the total and Treasury bills, commercial paper and local authority paper for the rest.

At end-December 2000 there were 108 companies on the Main List, 32 on the Investors' List and 17 on the NM List of the HEX, Helsinki Exchanges. At end-September 2001 total market capitalization was FIM 896.0 (EUR 150.7) billion for the Main List, FIM 6.8 (EUR 1.1) billion for the Investors' List and FIM 2.3 (EUR 0.39) billion for the NM List. Domestic bonds and debentures in circulation at end-September 2001 amounted to FIM 296.4 (EUR 49.8) billion; government bonds accounted for 79% of the total. Share turnover on the HEX, Helsinki Exchanges amounted to FIM 1,351 (EUR 227.2) billion in 2000. In January–September 2001 share turnover amounted to FIM 908.4 (EUR 152.8) 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  
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## Balance sheet of the Bank of Finland, EUR million

Assets	2001			
	31.8.	28.9.	26.10.	30.11.
<b>1 Gold and gold receivables</b>	502	502	502	502
<b>2 Claims on non-euro area residents denominated in foreign currency</b>	9 136	8 759	8 697	8 735
2.1 Receivables from the IMF	837	764	745	717
2.2 Balances with banks and security investments, external loans and other external assets	8 300	7 996	7 953	8 019
<b>3 Claims on euro area residents denominated in foreign currency</b>	786	743	819	798
<b>4 Claims on non-euro area residents denominated in euro</b>	0	0	0	0
4.1 Balances with banks, security investments and loans	0	0	0	0
4.2 Claims arising from the credit facility under the ERM II	–	–	–	–
<b>5 Lending to euro area credit institutions related to monetary policy operations denominated in euro</b>	1 971	936	1 430	1 147
5.1 Main refinancing operations	1 250	585	1 083	899
5.2 Longer-term refinancing operations	697	351	348	248
5.3 Fine-tuning reverse operations	–	–	–	–
5.4 Structural reverse operations	–	–	–	–
5.5 Marginal lending facility	24	–	–	–
5.6 Credits related to margin calls	–	–	–	–
<b>6 Other claims on euro area credit institutions denominated in euro</b>	4	4	4	4
<b>7 Securities of euro area residents denominated in euro</b>	–	–	–	–
<b>8 General government debt denominated in euro</b>	–	–	–	–
<b>9 Intra-Eurosystem claims</b>	768	768	768	768
9.1 Share in ECB capital	70	70	70	70
9.2 Claims equivalent to the transfer of foreign currency reserves	699	699	699	699
9.3 Claims related to the issuance of ECB debt certificates	–	–	–	–
9.4 Claims related to TARGET and correspondent accounts (net)	–	–	–	–
9.5 Claims related to other operational requirements within the Eurosystem	–	–	–	–
<b>10 Other assets</b>	572	680	678	639
<b>Total assets</b>	13 739	12 392	12 900	12 594

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



		2001		
	31.8.	28.9.	26.10.	30.11.
<b>Liabilities</b>				
<b>1 Banknotes in circulation</b>	2 632	2 578	2 467	2 361
<b>2 Liabilities to euro area credit institutions related to monetary policy operations denominated in euro</b>	2 017	2 342	2 542	2 745
2.1 Current accounts (covering the minimum reserve system)	2 017	2 342	2 542	2 745
2.2 Deposit facility	–	–	–	–
2.3 Fixed-term deposits	–	–	–	–
2.4 Fine-tuning reverse operations	–	–	–	–
2.5 Deposits related to margin calls	–	–	–	–
<b>3 Other liabilities to euro area credit institutions denominated in euro</b>	–	–	–	–
<b>4 Liabilities to other euro area residents denominated in euro</b>	1	1	0	1
4.1 General government	–	–	–	–
4.2 Other liabilities	1	1	0	1
<b>5 Liabilities to non-euro area residents denominated in euro</b>	1	0	0	1
<b>6 Liabilities to euro area residents denominated in foreign currency</b>	–	–	–	–2
<b>7 Liabilities to non-euro area residents denominated in foreign currency</b>	267	115	117	85
7.1 Deposits, balances and other liabilities	267	115	117	85
7.2 Liabilities arising from the credit facility under the ERM II	–	–	–	–
<b>8 Counterpart of special drawing rights allocated by the IMF</b>	210	201	201	201
<b>9 Intra-Eurosystem liabilities</b>	2 888	1 605	2 024	1 623
9.1 Liabilities related to promissory notes backing the issuance of ECB debt certificates	–	–	–	–
9.2 Liabilities related to TARGET and correspondent accounts (net)	2 888	1 605	2 024	1 623
9.3 Liabilities related to other operational requirements within the Eurosystem	–	–	–	–
<b>10 Other liabilities</b>	321	404	400	433
<b>11 Revaluation account</b>	1 326	1 070	1 070	1 070
<b>12 Capital and reserves</b>	4 076	4 076	4 076	4 076
<b>Total liabilities</b>	13 739	12 392	12 900	12 594

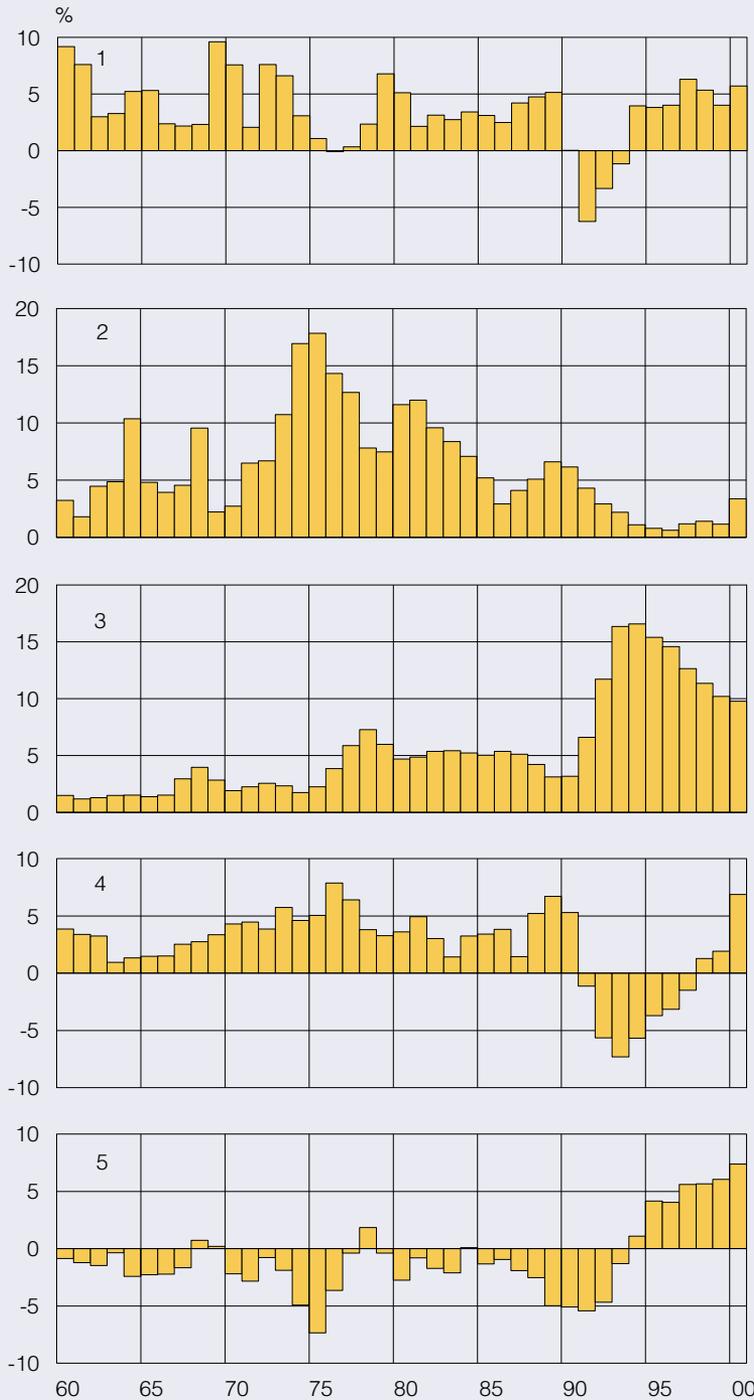


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3. Monetary aggregates for the euro area
4. Growth of the money stock in the euro area and Finland
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58. Selected asset prices in Finland



## 1. Finland: key economic indicators

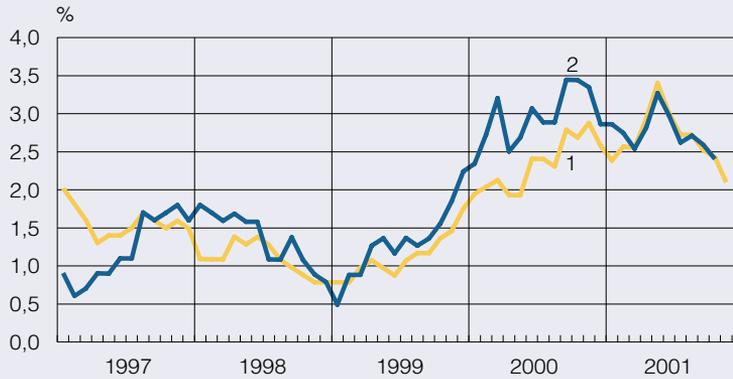


1. GDP, volume change from previous year
2. Consumer prices, change from previous year
3. Unemployment rate
4. General government fiscal position, % of GDP
5. Current account, % of GDP

Sources:  
Statistics Finland and  
Bank of Finland.



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

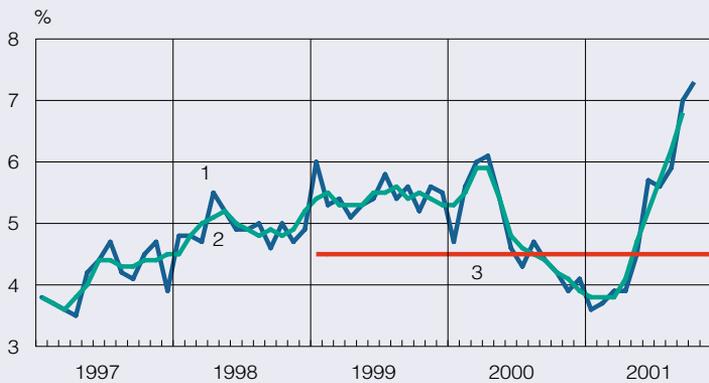


Harmonized Index of Consumer Prices, 12-month percentage change

1. Euro area countries
2. Finland

Sources: Eurostat and Statistics Finland.

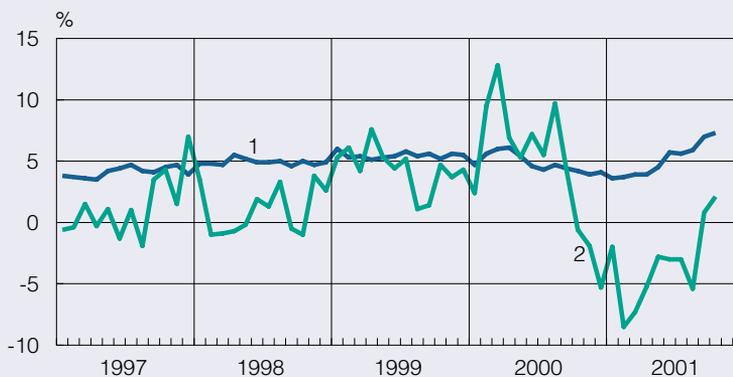
## 3. Monetary aggregates for the euro area



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



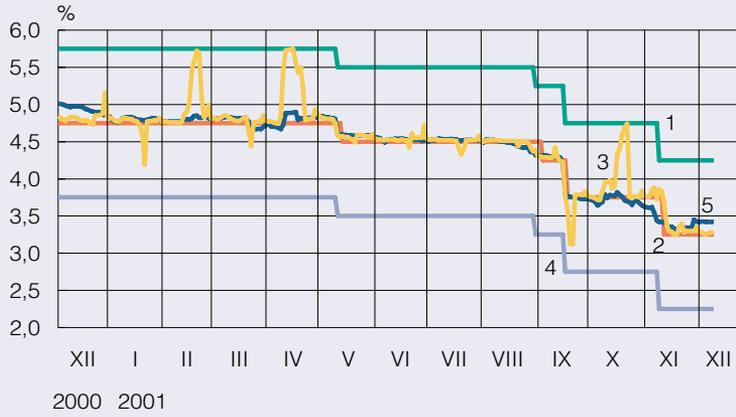
12-month percentage change

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.



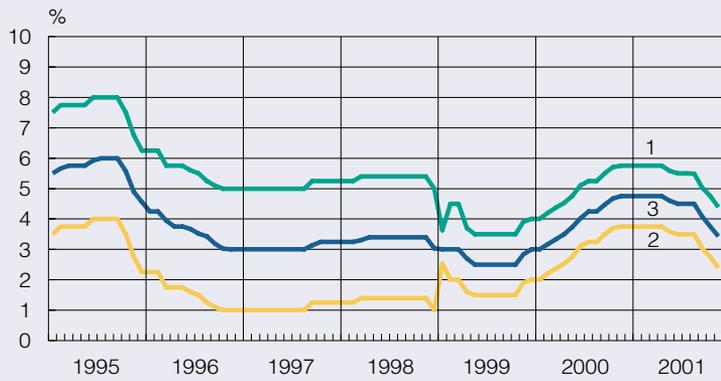
### 5. Eurosystem interest rates and money market rates



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

Sources:  
European Central Bank and Reuters.

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

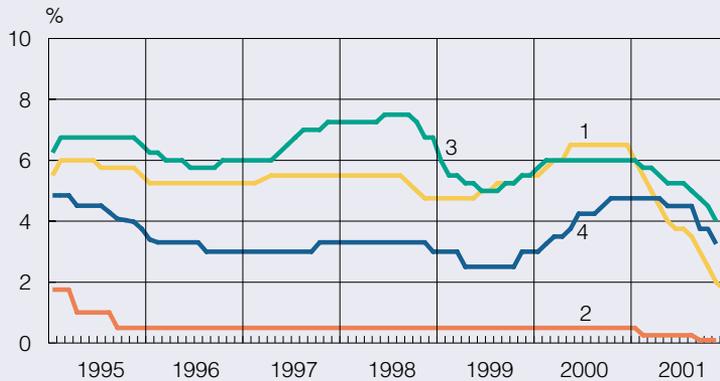


Bank of Finland interest rates until end-1998

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

Source:  
European Central Bank.

### 7. Official interest rates

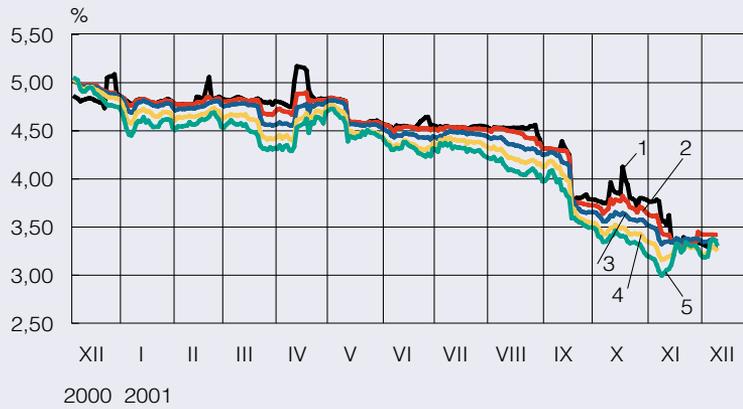


- 1. USA: fed funds target rate
- 2. Japan: discount rate
- 3. United Kingdom: repo rate
- 4. Eurosystem: main refinancing rate (German repo rate until end-1998)

Source: Bloomberg.



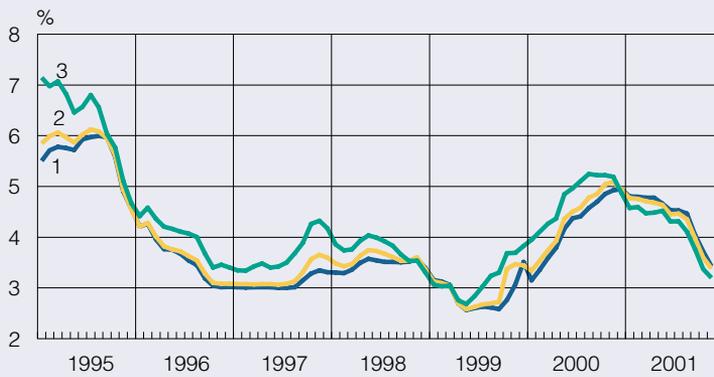
### 8. Euribor rates, daily values



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

Source: Reuters.

### 9. Euribor rates, monthly values

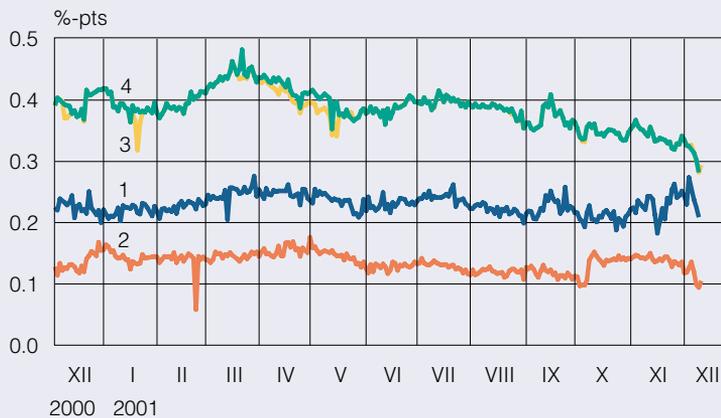


Helibor rates until end-1998

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

Source: Reuters.

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



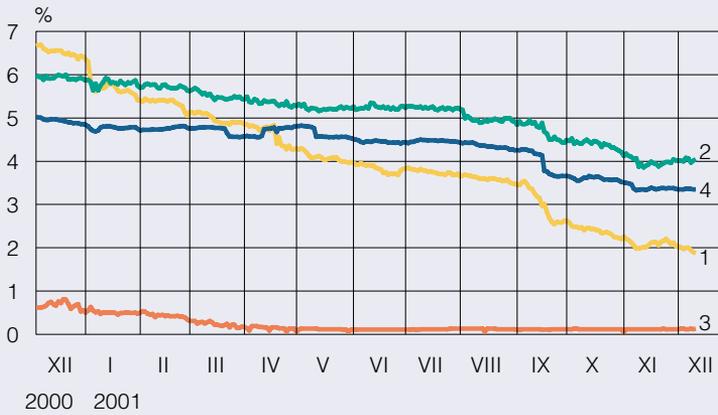
- 1. Finland
- 2. France
- 3. Italy
- 4. Largest differential

Source: Reuters.





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

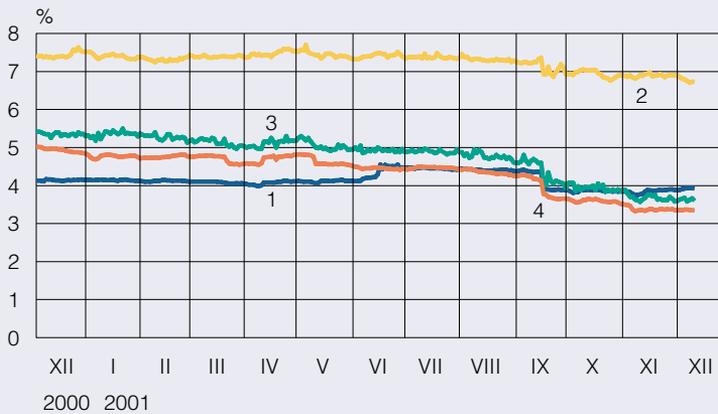


Interbank rates

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

Source: Reuters.

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

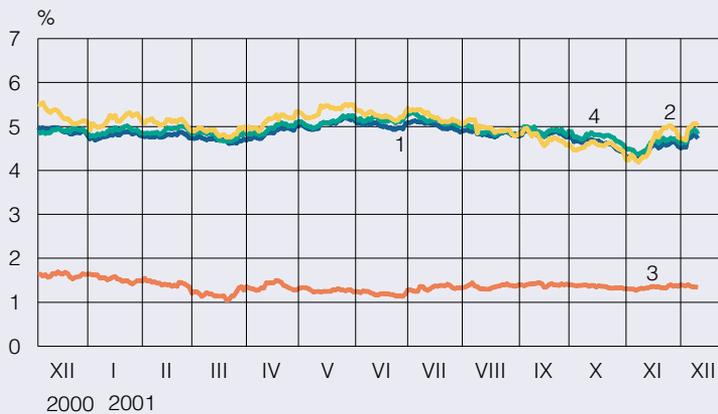


Interbank rates

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

Source: Reuters.

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



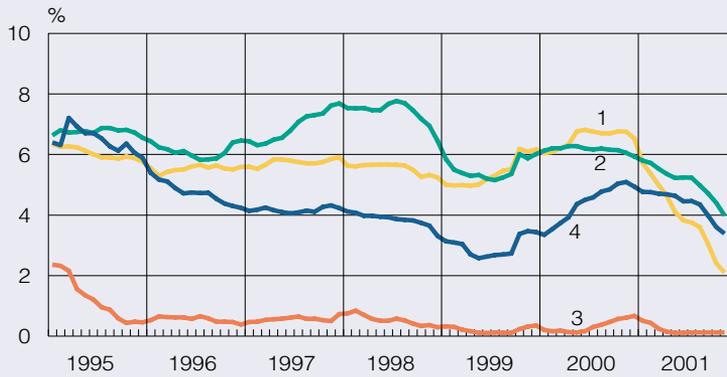
Yields on ten-year government bonds

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

Source: Reuters.

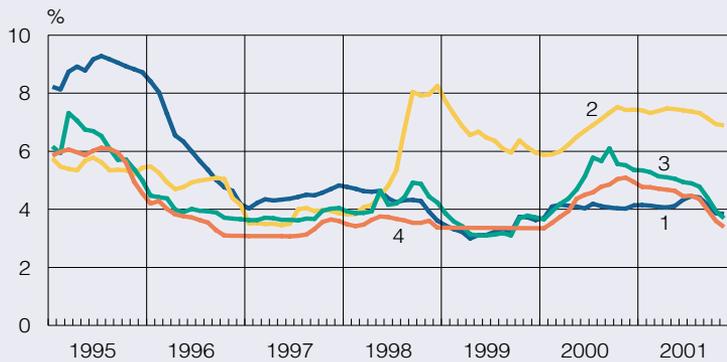


### 14. International three-month interest rates, monthly values



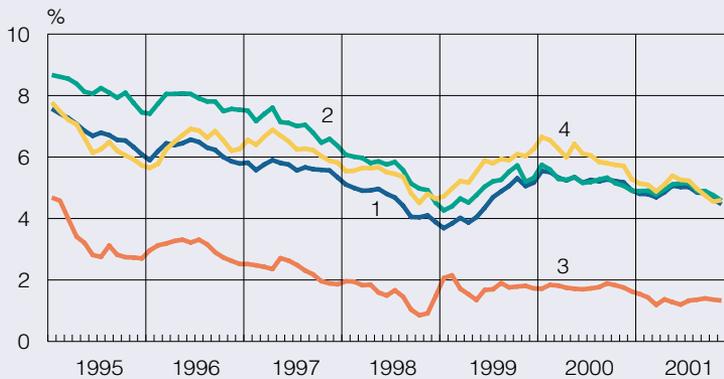
Interbank rates  
 1. United States  
 2. United Kingdom  
 3. Japan  
 4. Euro area  
 Source: Reuters.

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



Interbank rates  
 1. Sweden (Stibor)  
 2. Norway  
 3. Denmark  
 4. Finland (Euribor; Helibor until end-1998)  
 Source: Reuters.

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

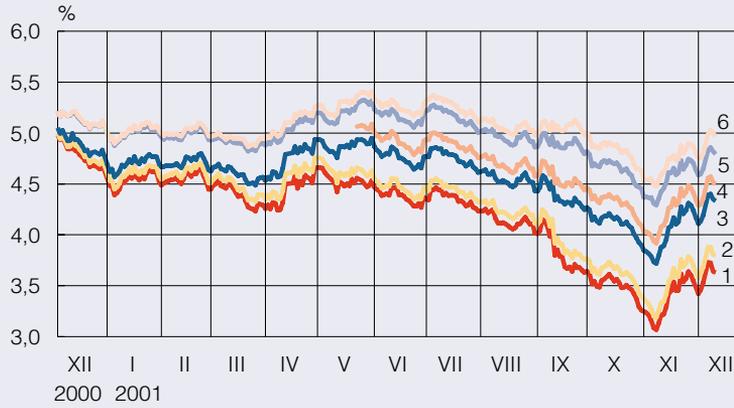


Yields on ten-year government bonds  
 1. Germany  
 2. United Kingdom  
 3. Japan  
 4. United States  
 Source: Reuters.





### 17. Yields on Finnish benchmark government bonds



1. Bond maturing on 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 4 July 2007, 5%
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

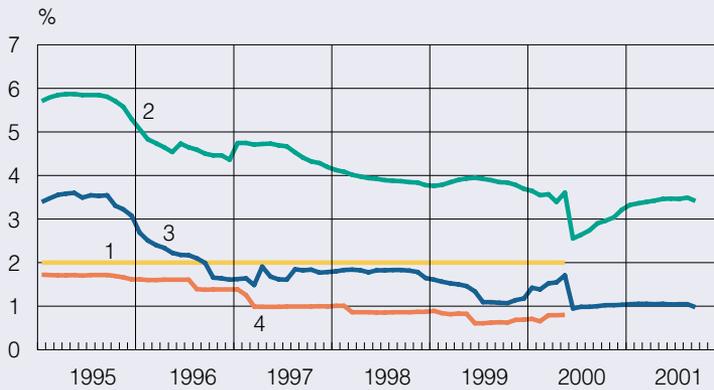


1. Merita prime
2. Sampo prime
3. OKOBANK group prime

Source: Banks.



## 20. Bank deposit rates in Finland



The tax treatment of deposits changed on 1 June 2000.

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

Source: Bank of Finland.

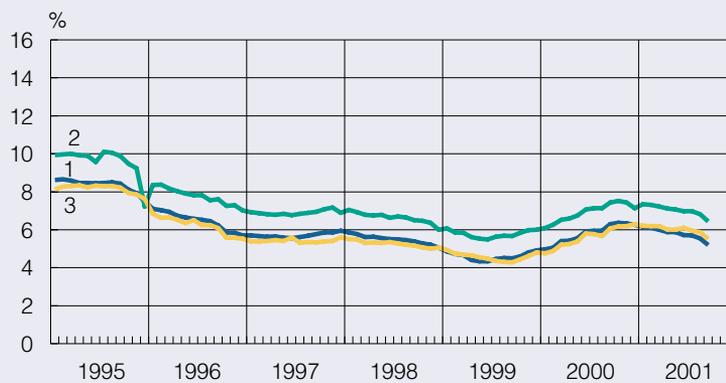
## 21. Bank lending and deposit rates in Finland



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

Source: Bank of Finland.

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

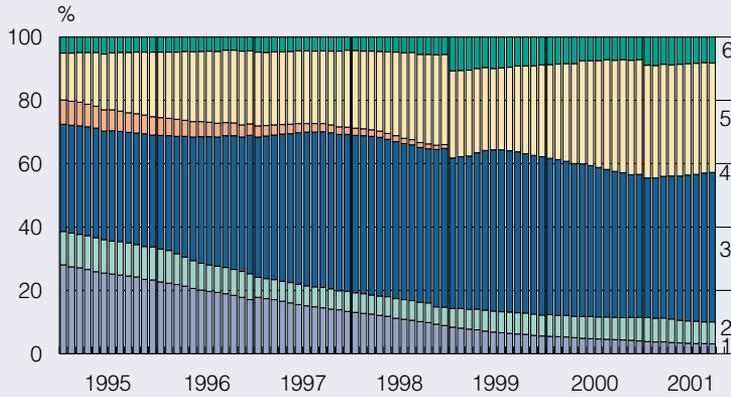


1. New housing loans
2. New consumer credits
3. New study loans

Source: Bank of Finland.



### 23. Stock of bank lending in Finland

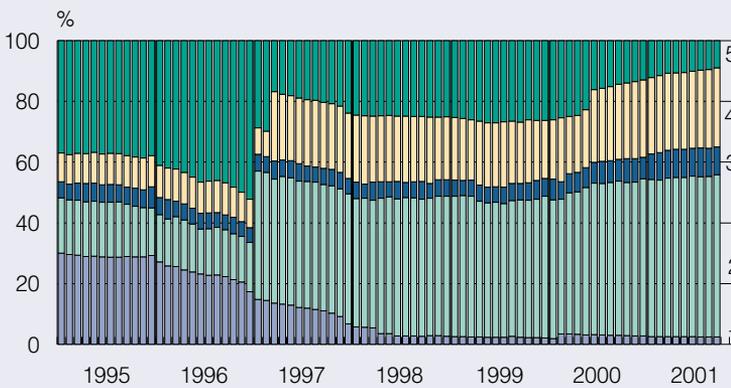


Interest rate linkages, percentages

1. 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

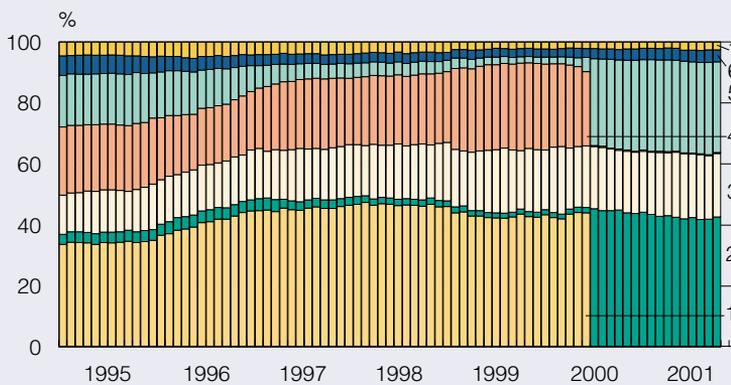


Interest rate linkages, percentages

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



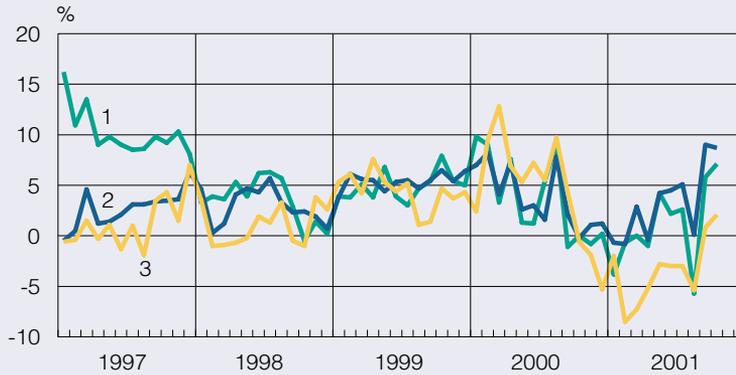
The tax treatment of deposits changed on 1 June 2000.

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

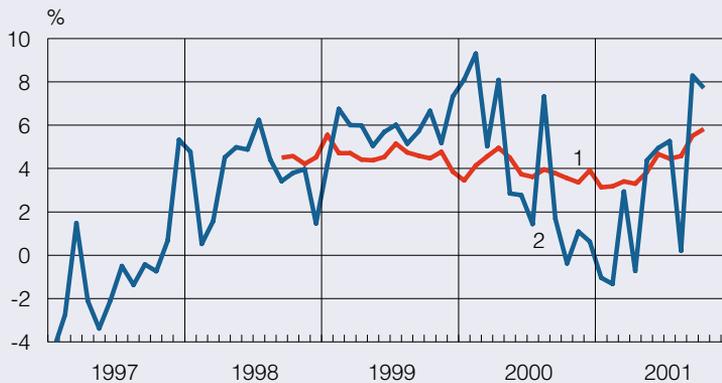


12-month percentage change

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

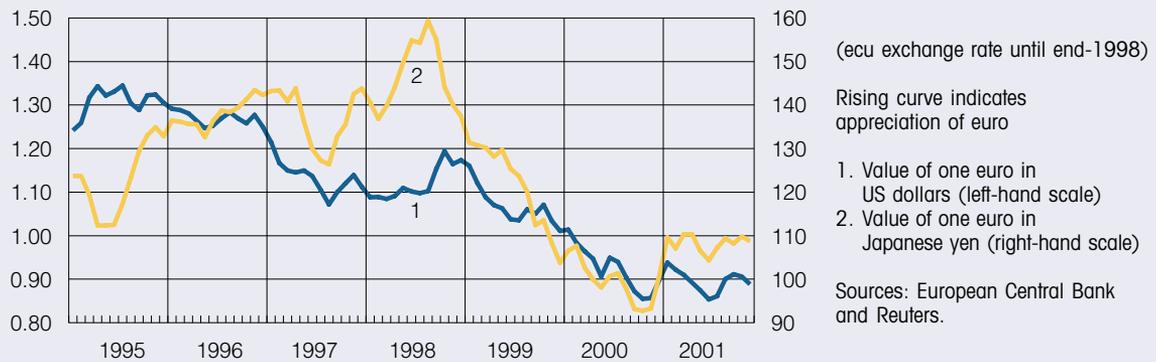
Sources:  
European Central Bank and  
Bank of Finland.



### 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

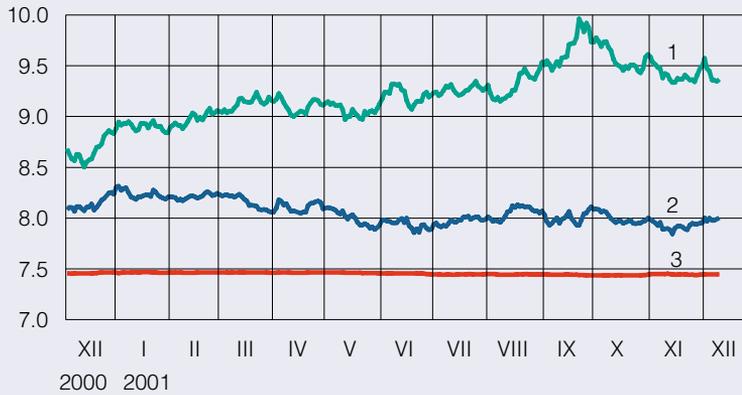


### 31. Euro exchange rates against the pound sterling and the Swedish krona





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

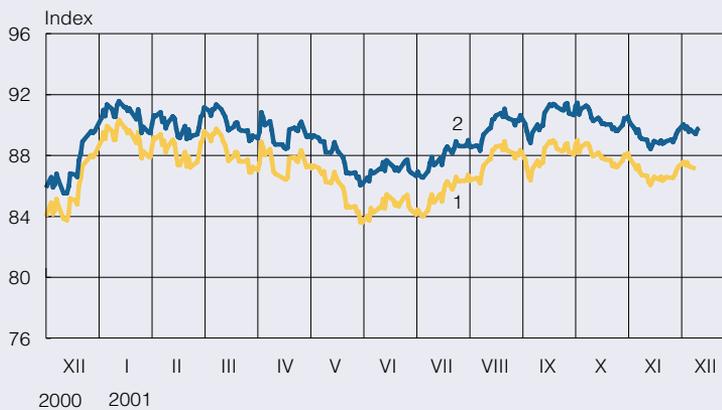


Rising curve indicates appreciation of euro

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



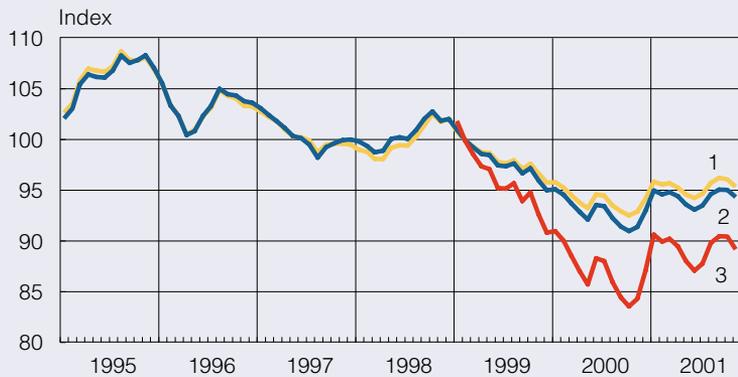
1999 Q1 = 100

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



29 December 2000 = 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

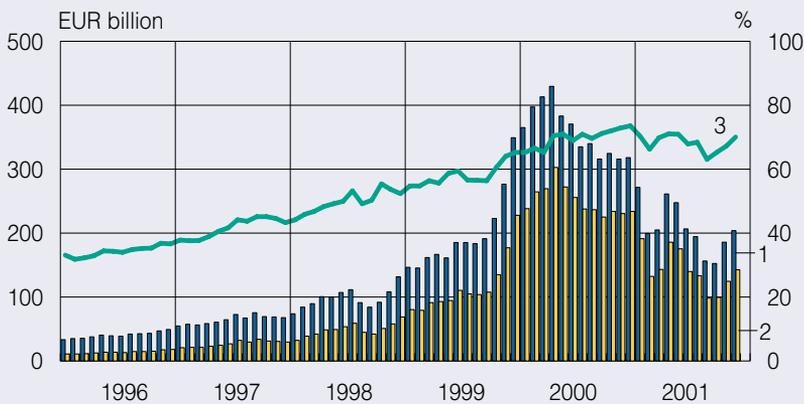


30 December 2000 = 100

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

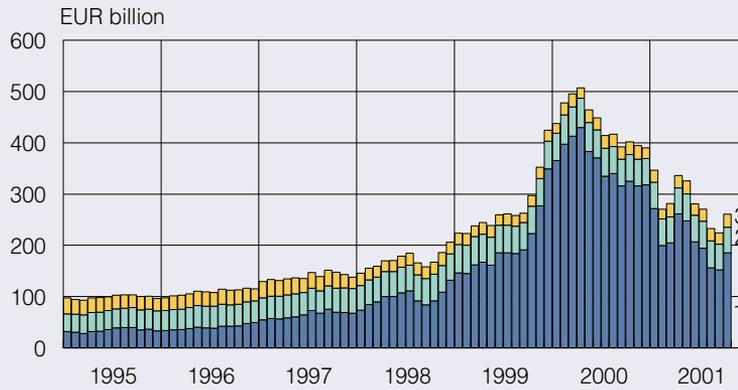


1. Market capitalization of all  
listed shares (left-hand scale)
2. Market capitalization of  
non-residents' holdings  
(left-hand scale)
3. Market capitalization of  
non-residents' holdings as  
a percentage of total market  
capitalization  
(right-hand scale)

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



### 38. Securities issued in Finland

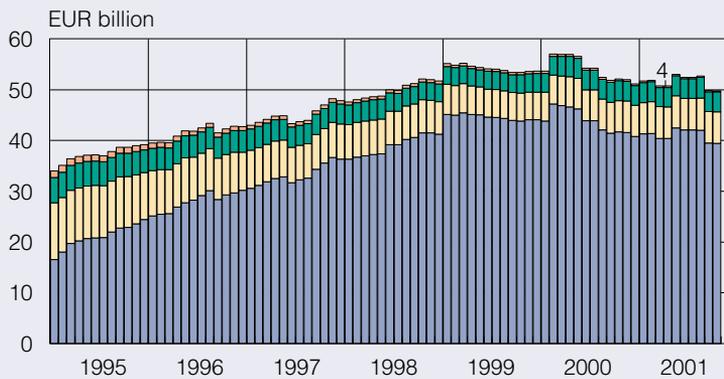


End-month stock

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

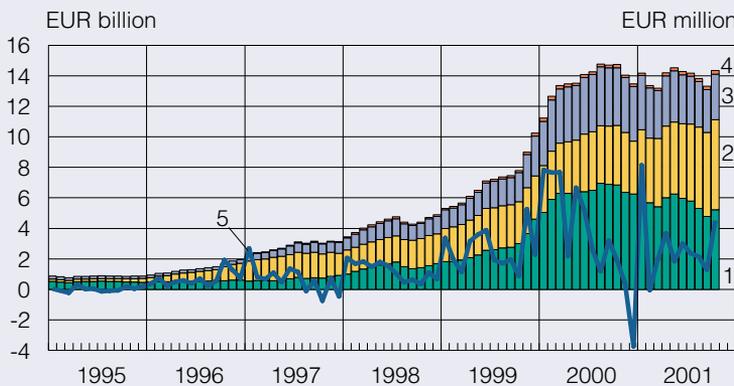


End-month stock

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

Source: Statistics Finland.

### 40. Mutual funds registered in Finland



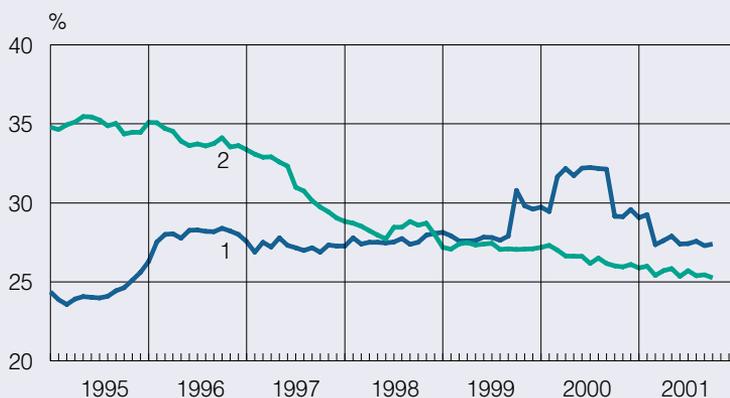
1. Equity funds (left-hand scale)
2. Fixed income funds (left-hand scale)
3. Balanced funds (left-hand scale)
4. Risk funds (left-hand scale)
5. All funds: net subscriptions (right-hand scale)

Source: HEX Helsinki Exchanges.





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



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

- 1. Revenue
- 2. Expenditure

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

### 42. Public sector balances in Finland

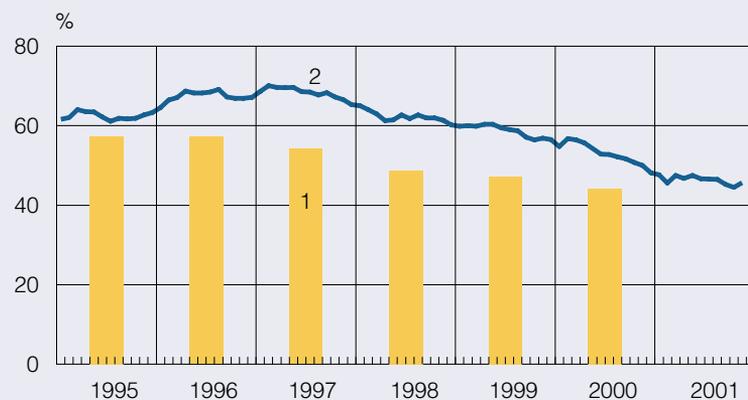


% of GDP

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

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

### 43. Public debt in Finland



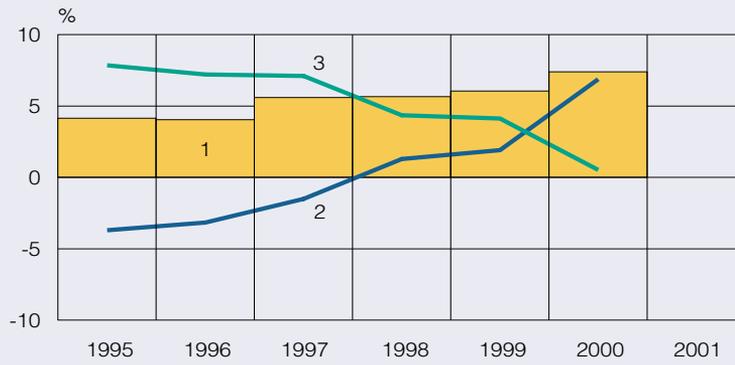
% of GDP

- 1. General government debt
- 2. Central government debt

Sources: Statistics Finland and  
State Treasury.



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

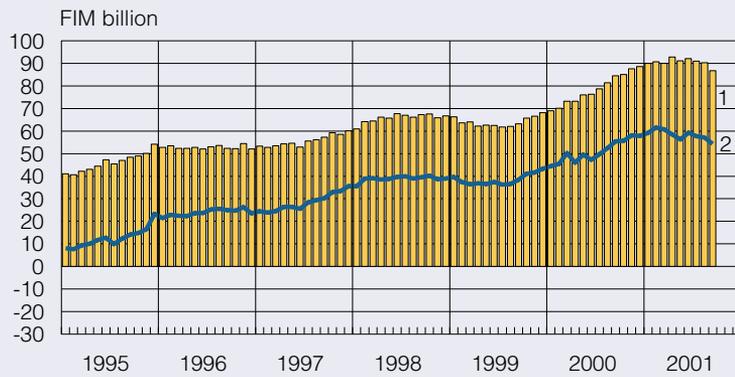


Main sectoral financial balances, % of GDP

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

Sources: Bank of Finland and Statistics Finland.

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

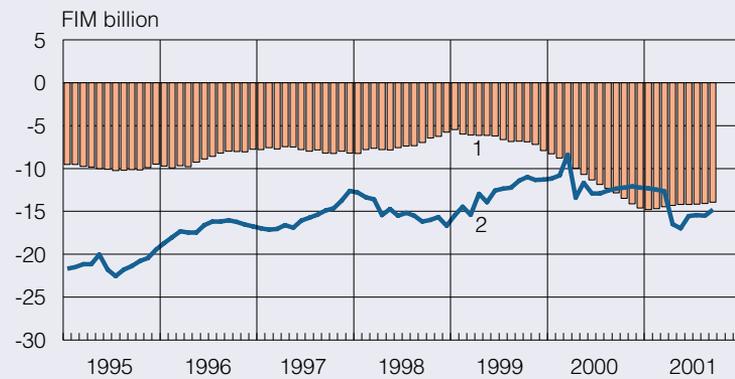


12-month moving totals

- 1. Goods account, fob
- 2. Current account

Source: Bank of Finland.

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



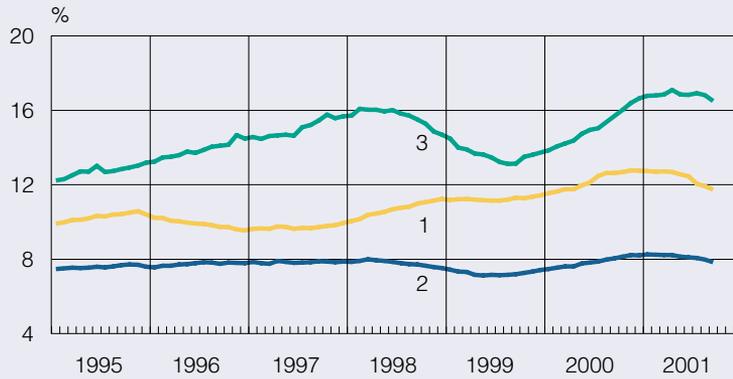
12-month moving totals

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

Source: Bank of Finland.



### 47. Regional distribution of Finnish exports

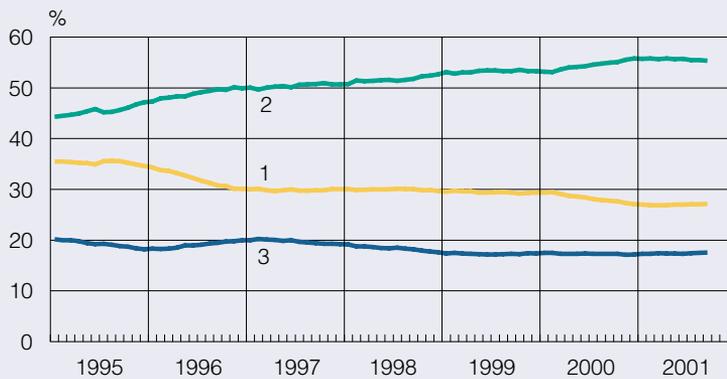


12-month moving totals,  
% of GDP

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

Sources:  
National Board of Customs  
and Statistics Finland.

### 48. Finnish exports by industry

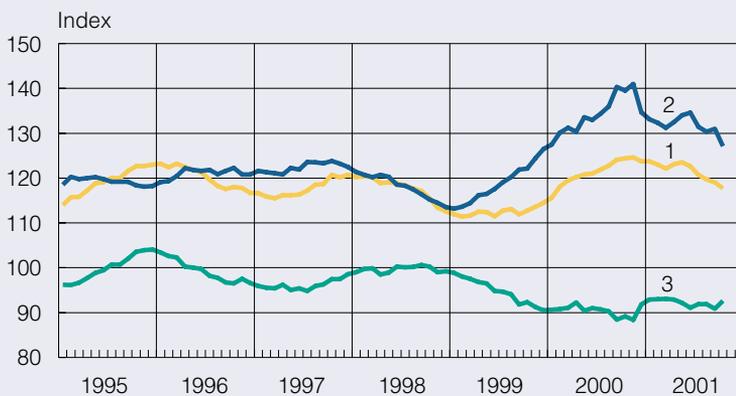


12-month moving totals,  
percentage of total exports

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

Source:  
National Board of Customs.

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



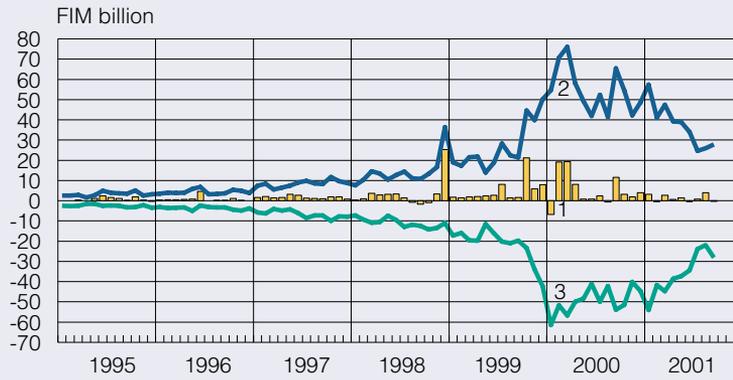
1990 = 100

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

Source: Statistics Finland.



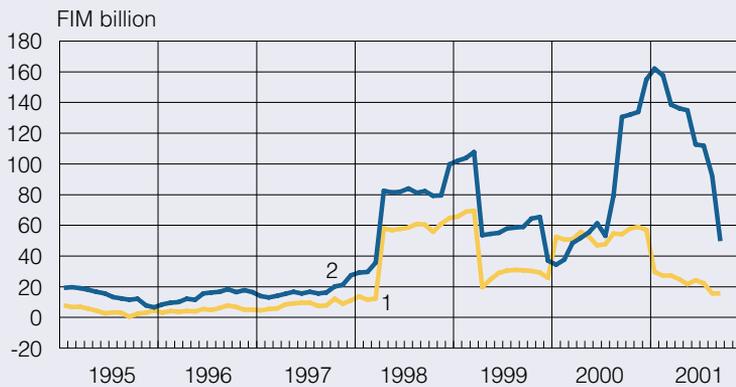
### 50. Non-residents' portfolio investment in Finnish shares



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

Source: Bank of Finland.

### 51. Finland: direct investment

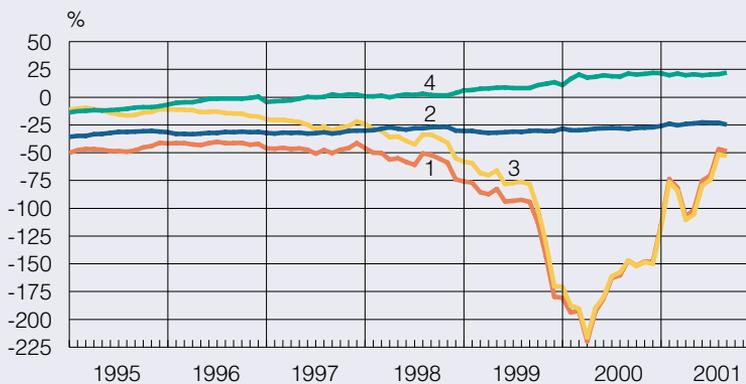


12-month moving totals

- 1. In Finland
- 2. Abroad

Source: Bank of Finland.

### 52. Finland's net international investment position



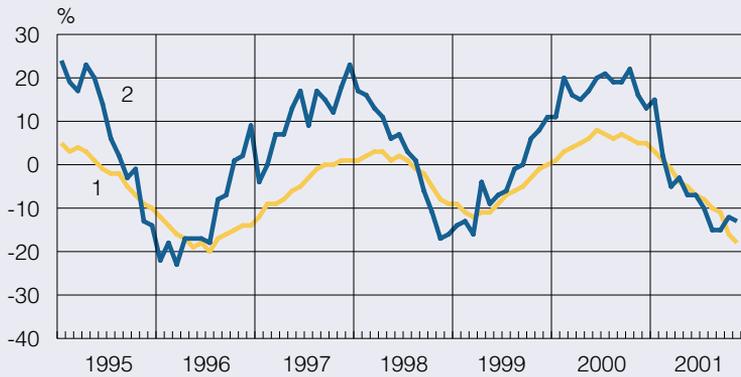
% of GDP

- 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.



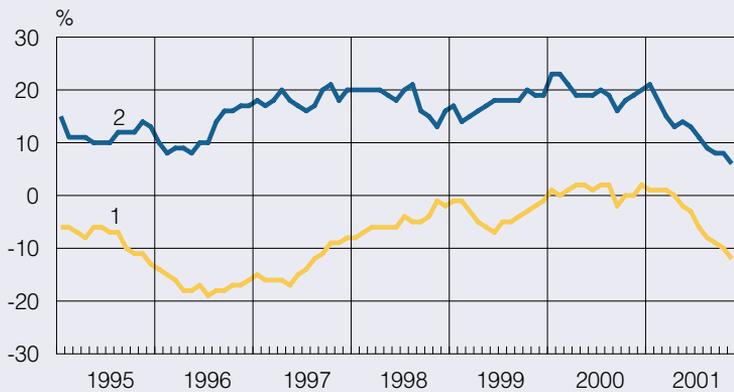
### 53. Industrial confidence indicator in the euro area and Finland



1. Euro area countries  
2. Finland

Source: European Commission.

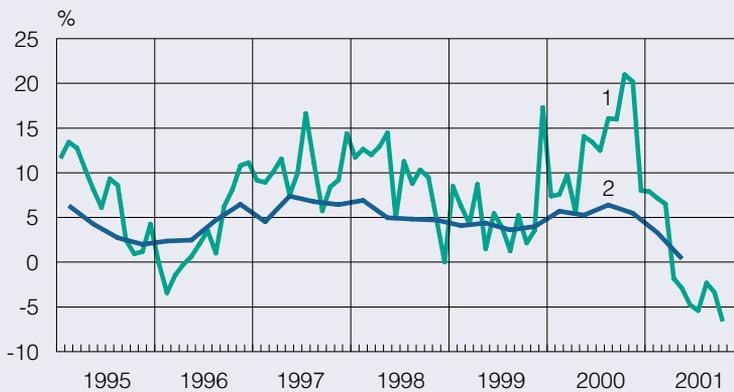
### 54. Consumer confidence indicator in the euro area and Finland



1. Euro area countries  
2. Finland

Source: European Commission.

### 55. Finland: GDP and industrial production



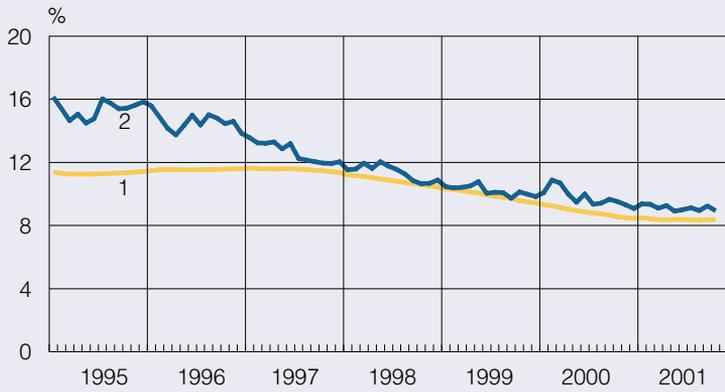
Percentage change from previous year

1. Industrial production  
2. Gross domestic product

Source: Statistics Finland.



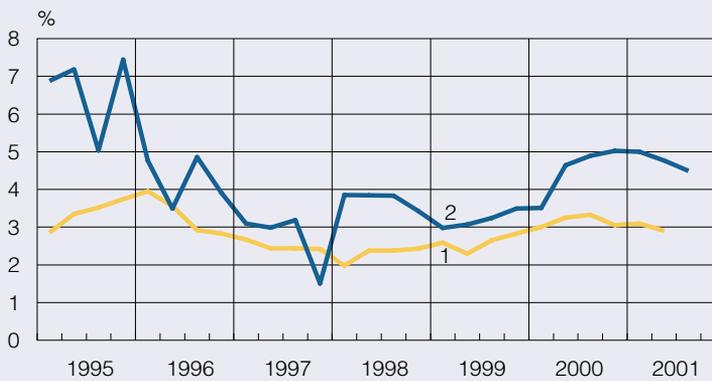
### 56. Unemployment rate in the euro area and Finland



- 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

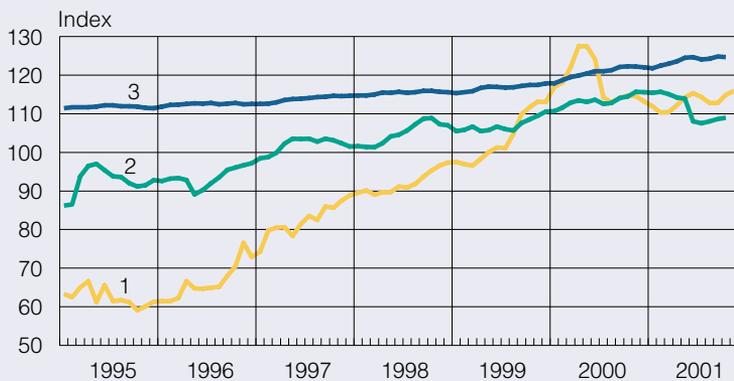


Percentage change from previous year

- 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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#### **Challenges facing the Finnish labour market**

**Systemic risks in the Finnish financial markets**  
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13 August 2001

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\* Adviser to the Board

Branch offices: Kuopio, Oulu, Tampere and Turku.

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