



BANK OF FINLAND

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- The Bank of Finland's macroeconomic forecast 2002-2004
 - Weakening employment - a threat to public finances
 - Factors affecting employment
-

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The Bank of Finland's macroeconomic forecast 2002–2004

During the current year the Finnish economy, led by the export sector, has moved onto a path of gradual improvement. Increases in exports and production have been posted in particular by the electronics industry, but output of forestry and other industries has also trended upward since the start of the year. Domestic demand has also firmed, as evidenced by the steady, and faster than last year, rise in private consumption. Private non-residential investment has remained at a satisfactory level, despite declines in exports and capacity utilisation. A definite quickening of investment activity, however, is not likely until next year, when world economic recovery gains momentum and international trade accelerates.

Growth of gross domestic product will be modest this year. Nonetheless, the forecasted 1.4% growth will exceed that of the euro area¹. Finnish GDP growth should increase to about 3% in 2003 and continue at the same rate in 2004 (Chart 1, Table 1). Higher rates are unlikely, even beyond 2004, as a shrinking labour supply and slowing productivity growth begin to limit the possibilities for growth.

Finnish inflation has slowed this year, to around 2% pa, and is projected to stay at that level over the next couple years. The unemployment rate is rising moderately and is likely to continue on the same path into the early part of next year. Stronger growth should cause the rate to trend moderately downward in the following years, to less than 9% by the end of the forecast period.

The Bank's evaluation of the recovery of the US economy and world trade, done a half year ago, was cautious. Because data received in the spring and summer months have confirmed that the pessimism was well founded, our evaluation is virtually unchanged.

Strong first-quarter growth figures engendered the belief that the US economy would recover swiftly. Weaker growth in the second quarter, along with a fall in share prices, have cancelled the optimism. Expectations of company earnings have weakened, and accounting problems provided another blow to investor confidence. During the summer, expectations of the long-run outlook for US economic growth were also adjusted downward – one reason for the decline in share prices.

The Bank's March forecast indicated sluggish euro area GDP growth of less than 1%, and the outlook has not changed. Euro area domestic demand is not the world's economic locomotive, but the requisites are in place for moderate recovery, along with the rest of the world.

Most central banks have kept their policy rates on hold since the end of last year, and interest rates are now very low, by historical standards. Expectations of monetary tightening faded during the summer months, and there was a notable decline in long-term rates. Money market rates have fallen considerably in Europe, which paves the way for an upturn in growth and investment.

According to the forecast, US and euro area economic growth will accelerate gradually over a two-year period and approach respective trend values. Besides the United States, the Asian countries outside of Japan have notably filled the role of locomotive for world trade. During the last ten years, this area has developed into an important player in the world economy. Japan, on the other hand, is still fighting the deflation war. The banking crisis is still unresolved, and central government indebtedness is still growing apace.

Over the forecast period, Finnish export growth is expected to remain slightly more modest than in our last forecast. Of Finland's key sectors, telecommunications in particular has experienced a growth

¹ Forecast figures based on data available at 6 Sep 2002.

Table 1. Forecast summary**Demand and supply 2000–2004 (1995 prices)**

	2000	2001	2002f	2003f	2004f
%-change on year earlier					
Gross domestic product	6.1	0.7	1.4	2.8	3.3
Imports	16.0	0.1	0.8	5.6	6.9
Exports	20.1	-2.2	1.9	4.9	6.8
Private consumption	2.6	1.1	2.7	2.7	2.6
Public consumption	-0.2	2.1	2.1	2.0	2.8
Private fixed investment	5.5	4.6	-2.8	2.5	5.6
Public investment	-5.4	0.8	2.6	-3.7	1.1
Inventory change + stat discrepancy, % of year-earlier total demand	0.5	0.1	-0.4	0.3	-0.2
Total demand	8.5	0.5	1.3	3.5	4.2
Final domestic demand	2.9	2.0	0.9	2.7	2.8

Key economic indicators

	2000	2001	2002f	2003f	2004f
%-change					
Harmonised index of consumer prices	3.0	2.7	2.2	2.0	1.7
Consumer price index	3.4	2.6	1.8	2.0	1.7
Wage and salary earnings	4.0	4.5	3.4	4.0	4.1
Labour productivity	4.8	0.2	0.8	2.2	2.1
Unit labour costs	-0.6	5.2	1.5	2.2	2.5
Number of employed	1.7	1.4	0.1	0.0	1.1
Employment rate, 15–64 year-olds, %	66.9	67.7	67.7	67.7	68.4
Unemployment rate, %	9.8	9.1	9.3	9.4	8.7
Export prices of goods and services	2.9	-1.2	-4.0	0.8	1.4
Terms of trade	-3.6	1.6	-2.3	-0.9	0.1

% of GDP, national accounts

Ratio of taxes to GDP	47.1	45.4	44.6	44.2	44.4
General government net lending	7.0	4.9	3.3	3.5	3.7
General government debt (EMU definition)	44.0	43.4	42.0	40.6	39.0
Goods account	11.4	10.4	9.5	9.2	9.3
Current account	7.6	6.8	6.2	5.7	5.9
Avg interest rate on deposit banks' new loans, %	5.2	5.1	4.4	4.6	5.0

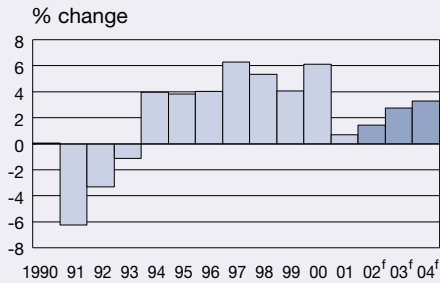
f = forecast

Sources: Statistics Finland and Bank of Finland.

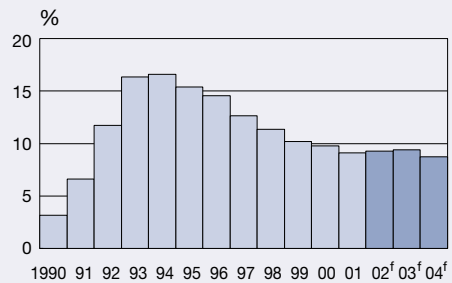
Chart 1.

Key economic indicators

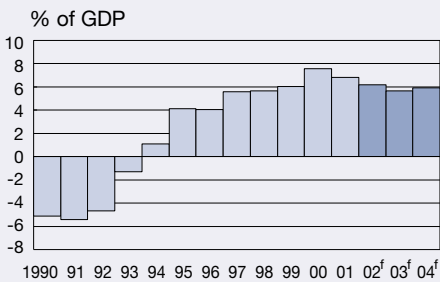
Gross domestic product



Unemployment rate

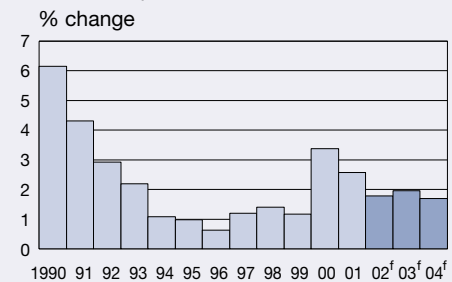


Current account

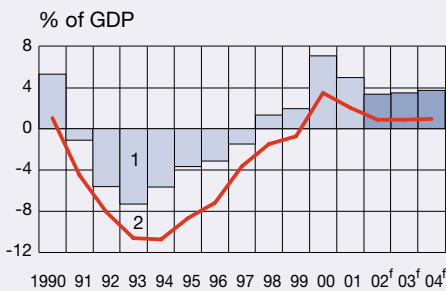


Inflation

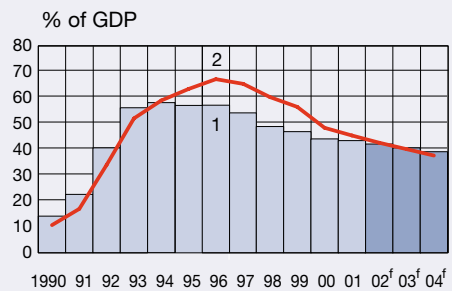
Consumer price index



General government fiscal position (EMU definition)



General government debt (EMU definition)

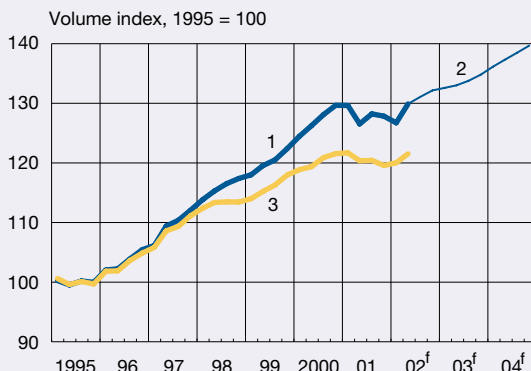


1. General government
2. Central government

f = forecast

Sources: Statistics Finland and Bank of Finland.

Chart 2. GDP indicator, Finland



1. Monthly GDP indicator
2. Bank of Finland forecast
3. Monthly GDP indicator excl. manufacture of electrical and optical equipment

Seasonally adjusted, last observations: 2002 Q2

f = forecast

Sources: Statistics Finland and Bank of Finland.

slowdown in concert with the slump in the world economy. Monthly gyrations in the output volume in the ICT sector are also reflected in movements in total output and exports, which makes it difficult to grasp the overall picture (Chart 2).

The forecast presents a picture of moderate price developments. Import prices are not expected to fo-

ment significant inflation pressures. Market expectations indicate that, as economic growth accelerates, interest rates in the United States and euro area will begin to ease upward while the major exchange rates remain fairly steady over the course of the forecast period (Box 1). The price of crude oil has risen again somewhat in the last few weeks but is assumed to

Box 1. Forecast assumptions

World trade and import prices

Assumptions regarding Finland's key export markets and import prices are based on estimates of world economic performance. Growth of import activity in Finland's export markets will be about

the same in 2002 as in 2001 but is forecasted to accelerate to over 5% in 2003 and almost 7% in 2004 (Table). It is assumed that the price of crude oil will stay at its current level (just over USD 27) till the end of 2002 and subsequently fall gradually toward

Table. Forecast assumptions

	2000	2001	2002 ^f	2003 ^f	2004 ^f
Import volume in Finnish export markets, % change	12.0	1.8	1.7	5.5	6.8
Finnish import prices, % change	6.9	-2.2	-1.8	1.7	1.2
Oil price, USD per barrel	28.4	24.4	24.8	26.2	25.3
Import prices in Finnish export markets, % change	8.0	-1.3	-0.9	0.7	1.2
3-month EURIBOR, %	4.5	4.3	3.4	3.6	4.0
Yield on taxable 4-5 year government bonds, %	5.3	4.5	4.5	4.5	4.8
Finland's nominal competitiveness indicator ¹	92.8	94.4	95.4	96.0	95.8
US dollar-value of one euro	0.92	0.90	0.94	0.97	0.97

¹ Narrow plus euro area, 1999 Q1 = 100

f = forecast

Sources: Statistics Finland and Bank of Finland.

USD 25 by end-2004. Prices of non-oil commodities are expected to decline in 2001, rise sharply in 2003, and level off in 2004. Changes in export prices in Finland's trade-partner countries are assumed to be much more subdued. After declining in 2002, these prices should rise by about 1% pa in 2003 and 2004. Import prices will continue to decline in 2002 and rise by only 1–2% in 2003–2004.

Assumptions on interest rates and exchange rates based on market expectations

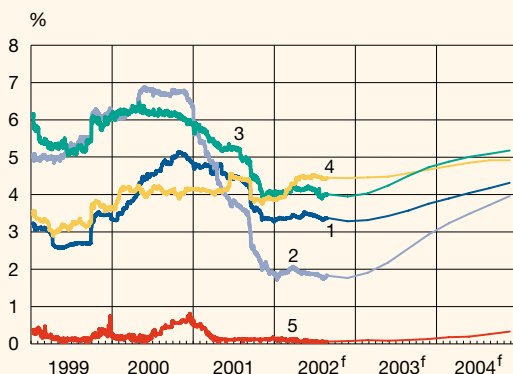
The three-month money market rate and long-term interest rates are assumed to match corresponding expectations prevailing in the money and currency markets on 30 Aug 2002. The assumptions are purely technical; no attempt is made to predict future ECB Governing Council interest rate decisions or estimate the equilibrium exchange rate. Expectations are calculated on the basis of publicly quoted inter-

est rate futures.¹ Short-term market interest rates are expected to rise to over 4% in 2004 (Chart A). Based on these interest rate expectations, the USD-value of the euro² should remain fairly steady and Finland's nominal competitiveness indicator should also remain stable (Chart B).

¹ An interest rate future is a standardised money market instrument that enables immediate fixing of the interest rate on a debt instrument that is due at a future date. Assumptions on long-term interest rates are based on an estimated yield curve as at 30 Aug 2002 (see Seppälä-Viertiö, The Term Structure of Interest Rates: Estimation and Interpretations, Bank of Finland Discussions Papers 19/1996).

² Expected future paths of exchange rates are calculated on the basis of uncovered interest rate parity using exchange rates quoted on respective dates and expected interest rate paths. These assumptions are purely technical and do not entail a view as to the euro's equilibrium exchange rate.

Chart A. 3-month interest rates and market expectations: selected currencies



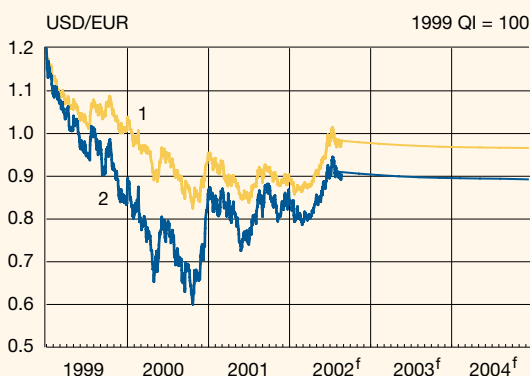
Interbank rates

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

f = forecast

Sources: Bloomberg and Bank of Finland.

Chart B. Expected exchange rates



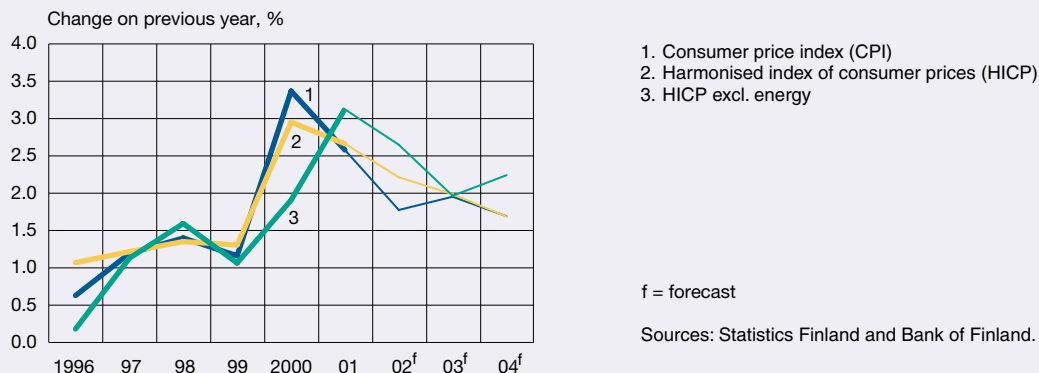
1. USD-value of one euro (LHS)
2. Finland's nominal competitiveness indicator (RHS)¹

f = forecast

¹ Narrow plus euro area.

Source: Bank of Finland.

Chart 3. Inflation



decline to its estimated medium-term equilibrium. In this situation we can expect to see a continuation of subdued developments in Finnish export prices. We are unlikely to see the kinds of scale economies and productivity growth in the ICT sector that marked the years of record-breaking growth and hence the downward trend in prices of ICT products is set to level off.

Domestic costs will accelerate, which will keep annual inflation at about 2%. It is assumed that productivity growth will firm, as demand gains momentum, and stabilise at just over 2% pa. Wage developments are shrouded with uncertainty, with comprehensive agreements expiring in January 2003. It is forecasted that wage increases will accelerate in 2003 and 2004, to about 4% pa. This is a fairly high rate of increase from the perspective of employment, considering the uncertain outlook for economic growth and sluggishness of productivity growth.

Despite the export recession, companies are still holding on to skilled workers. Unused capacity and strong competitiveness would enable an immediate jump in production in response to a pick-up in demand.

We estimate that the Finnish unemployment rate will turn upward temporarily. Employment has remained quite stable, thanks so far to domestic households' confidence in their own finances, and consumption demand has been buoyed by a strong trend in real income. The strength of demand in the housing market is visible in the rise in housing prices and rapid increase in households' borrowing. It is expected that the level of interest rates will remain quite

low over the forecast period and, as export-led growth ensues, households' incomes should develop favourably. Moderate growth continues in housing construction investment, and nonresidential investment should turn upward as export demand strengthens.

Inflation subdued

The rise in the Finnish consumer price index (CPI) is forecasted to slow from 2.6% in 2001 to slightly less than 2% in 2002 (Chart 3). Inflation as measured by the harmonised index of consumer prices (HICP) should slow correspondingly from 2.7% to 2.2%. Factors behind receding inflation are deceleration in the earnings level and a decline in import prices.

Inflation in 2003–2004 will be around 2% pa, as measured by both the HICP and CPI. In 2004 inflation will be checked by a subdued rise of 1% in import prices. On the other hand, the rise in unit labour cost is projected to accelerate slightly – to about 2% in 2003 and 2.5% in 2004 – which will add to inflation pressures in the latter part of the forecast period. This rise in costs will be reflected in the HICP excluding energy, which should increase by more than 2% in 2004.

The increase in labour costs will be particularly visible in service prices, which are set to continue their rapid climb. In 2001 service prices rose 3.8%, nor do we expect any significant slowing this year. On the other hand, consumers' year-ahead inflation

Box 2. Fan chart for short-horizon inflation forecast

How to read the chart?

The fan chart depicts the year-ahead outlook for Finnish HICP inflation. The different coloured areas of the fan indicate probabilities that the inflation outturn will be in the respective areas. Inflation is predicted to be within the darkest area with a probability of 50%. Combining the lighter and darker areas gives the 75% probability area, and the largest area indicates 90% probability.

Construction of the chart

The fan chart depicts the probability distribution for forecasted inflation. The uncertainty (standard deviation) associated with an inflation forecast – indicated by fan width – is calculated on the basis of historical errors in the Bank's short-horizon inflation forecast over the past few years. The uncertainty measure depicted may sometimes differ (based

on discretion) from actual errors. Risk weighting for acceleration or deceleration (vs mean forecast) may also be modified on the basis of discretion.

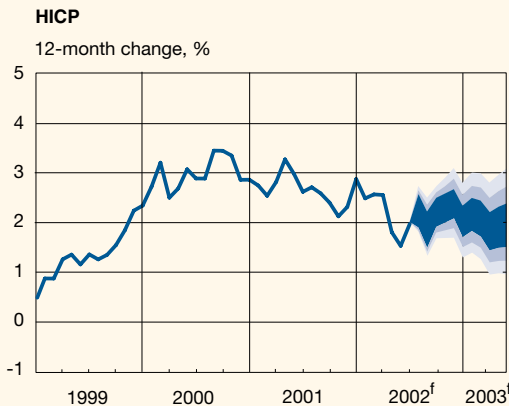
Production of the inflation forecast

The short-horizon inflation forecast is a weighted average of changes in HICP component prices. These changes are forecasted by means of a statistical model. Forecast risk weighting is also based on the components.

Rationale for the chart

The purpose of the chart is to quantify the uncertainty and risk weights, for which numerical values are often unclear and hard to evaluate in terms of quality. For this reason, it is hoped that the chart will stimulate discussion of risks associated with the inflation forecast.

Chart. Fan chart for short-horizon inflation forecast



f = forecast

Sources: Statistics Finland and Bank of Finland.

expectations have remained subdued. In August these indicated a 1.7% rise in prices, which was also the average for January-August. This is very low compared to 2001, when year-ahead inflation expectations stood at 2.8% on average, according to the consumer confidence survey.

World economic recovery delayed

World economic growth² in 2002 is forecasted to marginally exceed last year's growth. Because the US recovery has taken longer than expected, growth in world trade will slow again in the latter part of the year, to about 2%, which is clearly below the historic average³. World trade should pick up moderately in 2003–2004, but a return to the hyper-growth of the late 1990s is not on the forecast horizon (Table 2).

In the summer, US officials revised downward the GDP figures for 2001–2002. Revised growth in 2001 was only 0.3% compared to the earlier-reported 1.2%. This is also apparent in downward revisions of labour productivity growth, which casts doubt on earlier estimates of sustainable growth rates, especially for consumption. The accounting scandals and

anticipations of new disclosures have also eroded the credibility of New Economy success stories. Private consumption has recently been buoyed by the rise in housing prices. Consumption is forecasted to remain modest compared to the growth achieved in recent years, which would enable a gradual unwinding of households' heavy indebtedness. The decline in share prices and related uncertainty are expected to show up in further decreases in investment in the coming months, albeit investment should begin to increase already in the early part of 2003.

Euro area GDP growth has been on a slow recovery path since an upturn around the start of the year. Exports also started to increase in the early part of the year, but euro appreciation and the weakness of the world economy are expected to slow the growth in the coming months. In fact, a genuine recovery of exports is not likely until 2003–2004. Growth of private consumption is expected to strengthen further in the coming months and keep the euro area economy on a growth path. This scenario is supported by growth in real income – buoyed by lower inflation – and a declining savings ratio – abetted by low interest rates. Real private investment has been declining in the euro area for over a year and a half. The impact of fiscal policy on economic growth will be moderate. The recent fall in share prices, having affected consumption and investment, has caused further uncertainty. These effects could however be less important for the euro area than for the United States or United Kingdom.

² The forecast for the world economy is based on the Bank's own analysis using data as at 30 Aug 2002.

³ According to the IMF, world trade grew by about 6% pa and world GDP by about 3.5% pa in 1970–2001.

Table 2. International growth rates

	2000	2001	2002f	2003f	2004f
Real GDP, % change					
World	4.7	2.2	2.4	3.2	3.8
United States	3.8	0.3	2.0	2.1	2.8
Euro area	3.5	1.4	0.9	2.3	2.5
Japan	2.2	-0.5	-0.5	0.9	1.7
Import volume, % change					
World	11.4	-0.1	1.6	5.6	7.0
United States	13.2	-2.9	3.3	5.3	5.8
Euro area	10.9	0.8	-0.3	6.0	6.3
Japan	9.6	-0.5	-3.4	3.0	3.5
Finnish export markets	12.0	1.8	1.7	5.5	6.8

f = forecast

Source: Bank of Finland.

It seems that Japanese economic growth has received a boost from better-than-expected growth in exports to other Asian countries. Investment will decline again this year but should at long last turn upward next year. However, Japan's situation remains problematic, as evidenced by the August-September turmoil in the stock market. Robust economic growth continues in the rest of Asia, and this is bound to stimulate growth worldwide in the coming years. The other Asian countries have joined the EU and United States as a significant force in world trade. Growth in the United Kingdom and other industrial countries should continue at a relatively strong pace. On the other hand, the problems of Argentina and Brazil and their possible spread to other Latin American countries suffice to keep growth prospects lacklustre in that area.

Last year Finland's export markets grew faster than the growth of world trade. This resulted from import growth of Finland's key-customer industrial countries in excess of the growth of world trade as well as from favourable developments in Asian countries other than Japan and in the transition economies. The gradual recovery of economic growth next year will spur the growth of import activity in Finland's trading partners, which is estimated to rise to 7% pa by the end of 2004.

Continued uncertainty about the price of oil

Presently, there is much uncertainty regarding the price of oil. The price has recently been affected by dollar depreciation and a weak outlook for world economic growth, as well as events in the Middle East. Fluctuations in the price of oil have indeed been wide. The price is estimated to fall from the present ca USD 27 a barrel to ca USD 25 by the end of 2004⁴. In the forecast, the price of oil remains higher than in the forecast of last winter. Prices of non-oil commodities have declined notably this year, compared to last year, but are expected to turn upward in 2003.

The rise in export prices in Finland's trading partners is estimated to remain moderate despite rising commodity prices. The delay in world economic recovery and a stronger euro are promoting price stability. Low capacity utilisation rates also foster price stability by enabling growth without immediate in-

flation worries. Inflation pressures stemming from labour costs are estimated to remain moderate also in the industrial countries.

Export growth gradually gaining momentum

Fluctuations in export volume have been exceptionally large over the last two years. Production and exports of electronics products have gyrated widely from quarter to quarter. Efforts by the forestry industry to maintain the level of export prices via production limits have also had an impact on exports. The volatility of exports was visible eg in the second quarter of this year when exports increased by over 4% on the previous quarter. The jump appears to have marked the end of a downward trend in exports that began at the start of 2001. The forecast, in fact, indicates an upturn this year in export volume and growth of nearly 2% for the year. With world markets recovering slowly, exports are projected to grow by about 5% in 2003 but to accelerate to nearly 7% in 2004. We could easily see surprise (possibly large) spurts in exports if developments in the world economy – and along with it, export demand – exceed expectations.

A key factor in the prospects for export growth is the outlook for imports of Finland's customer countries. These are estimated to increase this year by just over 1.5%, ie by slightly less than exports. In 2003 exports should grow by about one-half percentage point less than imports of customer countries; the two figures will not move in step until 2004. The slight loss of market shares is the result primarily of a decline in export competitiveness due to euro appreciation. As a result of robust growth in labour productivity in industry, Finnish export prices have been falling since the mid-1990s, relative to competitors' prices. The decline appears to have slowed last year, and the forecast calls for a near halt in the decline within the forecast period. Behind this is the assumption that average labour productivity in the export sector will not grow during the forecast period as fast as in the latter half of the 1990s⁵.

⁵ This assumption is based on the idea that average growth of labour productivity in the latter part of the 1990s was bolstered by strong volume growth and related scale economies.

⁴ North Sea Brent.

Import prices are projected to decline by just over 1.5% this year, one reason being the appreciation of the euro. Toward year-end they should turn upward again. The rate of increase will however be quite subdued, ending the forecast period at just over 1% pa. Because of the assumption as to oil prices and changes in exchange rates, the projected rate of increase in import prices differs sharply from that of the Bank's forecast in winter 2002.

The sluggishness of export growth will dampen growth in the BOP current account. Yearly surpluses are expected to remain at about 6% of GDP over the entire forecast period. The surplus in goods and services should lodge at just over 9% of GDP.

Will the rise in wages halt the improvement in employment?

The labour supply will continue to grow moderately over the forecast period, but the effects of demographic trends – baby boomers starting to leave the labour force – will already be starting to surface. During this and the next two years, exits will still be fairly moderate, but starting already in 2006 the changes will be significant. In 2002–2003 the labour supply will still grow, by about 0.2%. In 2004, as economic growth picks up, the labour supply will increase by slightly more, as the labour participation rate rises.

The fairly subdued growth of real GDP and companies' cautiousness will ensure that this year's increase in labour demand is lacklustre. Like the la-

bour supply, so too labour demand will increase toward the end of the forecast period, as economic growth picks up. The employment rate will rise slightly at the end of the forecast period but remain clearly below 70%.

Due to the weakness of labour demand, the unemployment rate is forecasted to rise somewhat this year. Without the steady growth in domestic demand and companies' desire to hold on to skilled employees despite declining production, unemployment would already have turned clearly upward. Unemployment should peak in the first half of next year, at 9.5%. Toward the end of the forecast period, economic growth will also stimulate growth in the demand for labour and this will help to lower the unemployment rate to slightly under 9%.

In accord with the current agreement, covered wages are assumed to rise by 2.3% this year. Earnings are forecasted to rise by 3.4% in 2002 and by 4% in 2003 and 2004. Wage drift will continue to have a significant impact on changes in earnings. The average wage (ratio of total wages to working hours) will rise in the next two years slightly faster than earnings as economic growth picks up (Table 3).

Labour productivity growth is forecasted to pick up compared to 2001. For the whole economy, this year's growth will be almost 1%. The acceleration in labour productivity growth in 2003 and 2004, to over 2% pa, is a direct consequence of the pick-up in GDP growth. Despite the growth in productivity, unit labour costs for the whole economy will rise substantially, ie at clearly over 2% pa over the next two years.

Table 3. Costs and prices

	2000	2001	2002f	2003f	2004f
%-change on year earlier					
Wage and salary earnings	4.0	4.5	3.4	4.0	4.1
Avg wage	4.3	4.9	2.6	4.1	4.3
Productivity ¹	4.8	0.2	0.8	2.2	2.1
Labour costs ²	3.6	4.7	2.1	4.0	4.4
Unit labour cost	-0.6	5.2	1.5	2.2	2.5

¹ Relative to hrs worked.

² Ratio of wages and salaries + employers' social security contributions to employees' working hours.

f = forecast

Sources: Statistics Finland and Bank of Finland.

Table 4. Household income, demand and savings

	2000	2001	2002f	2003f	2004f
Disposable income, % change	0.5	3.7	2.3	2.6	2.7
Private consumption, % change	2.6	1.1	2.7	2.7	2.6
Housing investment, % change	3.6	-10.7	-1.3	1.9	3.2
Net savings ratio, %	1.6	3.8	3.3	3.2	3.3
Bank lending, % of disposable income	58.2	58.8	61.3	63.4	65.2

f = forecast

Sources: Statistics Finland and Bank of Finland.

Private consumption and household income growing at fairly good rates

Data received during the summer months present a mixed picture of factors affecting consumption. According to survey data collected by Statistics Finland, consumers' confidence about the economy has declined somewhat. In the labour market, uncertainty has increased and labour demand has been weak. Share prices have fallen dramatically. By contrast, housing prices have increased and the data on a rising level of earnings are positive. Moreover, real earnings are forecasted to increase fairly rapidly over the next two years. Direct taxes on households will not be substantially reduced during the forecast period and hence taxes will not have a significant impact on labour supply and consumption.

Private consumption is projected to rise by 2.7% in 2002 compared to 2001 (Table 4). Low interest rates and a decline in inflation have bolstered consumption. During the first half of this year, retail and car sales have been brisk. Consumption has also been bolstered by rising real income, which should increase again this year, by about 2%, thanks to slowing inflation. The rise in income is also affected by tax cuts and income transfers from the public sector to households. Private consumption is expected to increase in 2003 and 2004, boosted by a slight pick-up in real income growth in connection with faster growth of total wages. Consumers' purchasing power will be further strengthened by increases in interest and dividend receipts in the latter part of the forecast period.

Household saving, ie disposable income minus consumption spending, is affected by a number of factors. Because unemployment is forecasted to in-

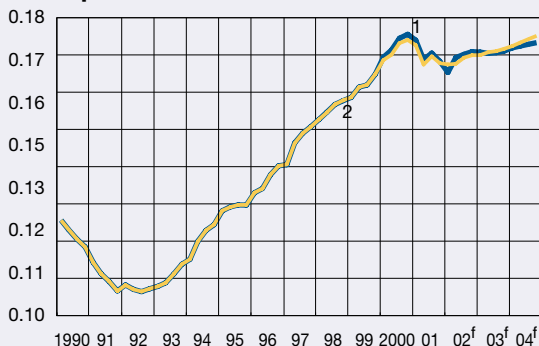
crease only slightly, it should not have a major impact on the savings rate. On the other hand, housing is the primary form of saving for households, and responds positively to improvements in confidence in the economy. It is estimated that the savings rate (ratio of savings to disposable income) will stabilise at just over 3% during the forecast period. The savings rate is expected to decline slightly compared to 2001, which should boost private consumption.

Companies' investment recovering slowly

Because of weak export performance and a weak near-term outlook, private nonresidential investment is expected to decline by about 3% in 2002, after several years of rapid growth. According to survey data, companies now have abundant excess production capacity. Modest recovery of production should restore companies' confidence enough to realise forecasted growth of just over 2.5% in 2003. Nonresidential investment will reach a growth rate of just over 6% pa, but not before 2004, when the capacity utilisation rate rises in response to a pick-up in output growth and firming of corresponding expectations.

The investment rate (ratio of private nonresidential investment to private-sector value added) will remain in 2002 and 2003 slightly above the level forecasted in March and then pick up marginally in 2004. In general, the investment rate is expected to remain close to the 16% level, at which it lodged in the latter half of the 1990s. The cautious approach to investment activity is reflected in the fact that the average productivity of the capital stock is expected to post a

Chart 4. Avg productivity of private nonresidential capital stock



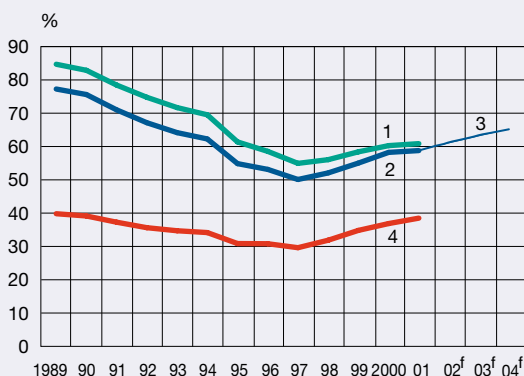
Ratio of value added to capital stock

- 1. Mar 2002 forecast
- 2. Sep 2002 forecast

f = forecast

Sources: Statistics Finland and Bank of Finland.

Chart 5. Household indebtedness



- 1. Indebtedness ratio: total debt, % of disposable income
- 2. Indebtedness ratio: bank lending, % of disposable income
- 3. Bank of Finland forecast
- 4. Housing loans from banks, % of disposable income

f = forecast

Sources: Statistics Finland and Bank of Finland.

further slight increase in the course of the forecast period (Chart 4). This implies an increase in efficiency in the use of existing production capacity.

The fall in private housing investment (10% in 2001) has continued. Housing investment is nonetheless forecasted to turn upward already toward the end of 2002, encouraged by the rise in housing prices. The growth should continue to be muted and to stay below levels reached in the high-growth years of the late 1990s. Housing investment will decline by just over 1% in 2002 but should increase by about 2% in 2003. In 2004 the growth should accelerate somewhat because of continued steady increases in house-

hold real income and a continuation of previous years' profitability level.

Rise in housing prices levels off

Housing prices rose in the second quarter of 2002 considerably more than in the Bank's March forecast. The low level of interest rates, which has maintained households' robust demand for loans, along with strong growth and expectations for income, has boosted housing sales and prices. Nominal housing prices are expected to rise further in the latter part 2002, albeit at a

more subdued rate than in the early months. For the year as a whole, the rise will be about 6% on average.

The rise in housing prices will continue in 2003 and 2004 because of stable development of household income and lengthened loan periods, but the average growth rate should be only half of this year's rate. Internal migration and a general rise in the level of housing will keep housing demand at a high level. Although household indebtedness will increase somewhat during the forecast period, the indebtedness ratio will remain clearly below the peak reached in 1989 (Chart 5). Housing prices will remain stable relative to disposable income.

Growth in bank lending will remain strong

The forecast for market interest rates is based on money market expectations at end-August 2002. Accordingly, the rise in lending rates will be less pronounced in the coming years than in the March forecast. The margin between bank lending and funding rates, like that between rates on new loans and market rates, is assumed to remain stable over the forecast period. Toward the end of 2004 the rate on new loans should rise to just over 5%.

Growth in bank lending to the private sector will increase slightly, to over 7%, and should continue at that rate in 2003 and 2004. Household borrowing will increase to 8.5% this year and then level off at just

under 8% pa. Low interest rates also spur company borrowing, which is expected to increase by just over 4.5% in 2002 and by slightly more in 2003 and 2004, as investment recovers. Deposit growth is expected to remain at 4–5% over the forecast period.

General government surplus stabilising and debt declining

Slow economic growth will reduce cyclical-type surpluses in the public sector in 2002, nor will cyclical factors strengthen in time to improve public finances during the forecast period. Easing of households' taxes, which has progressed gradually in recent years, appears to be coming to a halt. Tax easing continues this year, but in 2003 and 2004 tax cuts and annual inflation adjustments of tax rates will not offset the natural tax tightening associated with a rising earnings level. The overall tax ratio (tax revenue and social security contributions to GDP) will remain around 44% over the period 2002–2004. During the same period, households' average tax rate will stay above its pre-recession level.

The general government surplus will amount to about 3.5% of GDP in 2002 and 2003, and the ratio should increase slightly in 2004 (Table 5). The central government surplus should remain at about 1% of GDP throughout the forecast period. Local governments will not be able to balance their finances even though it is assumed that many will raise their

Table 5. General government financial balance, % of GDP

	2000	2001	2002f	2003f	2004f
General gov revenue	55,5	54,0	53,1	52,7	52,9
General gov expenditure	48,4	49,0	49,8	49,2	49,2
General gov primary expenditure	45,6	46,3	47,3	46,9	47,0
General gov interest expenditure	2,8	2,7	2,5	2,3	2,2
General government net lending	7,0	4,9	3,3	3,5	3,7
Central gov	3,5	2,0	0,8	0,9	0,9
Local gov	0,2	-0,4	-0,3	-0,3	-0,2
Social security funds	3,3	3,3	2,8	3,0	3,0
General gov primary balance	9,9	7,6	5,9	5,8	5,9

f = forecast

Sources: Statistics Finland and Bank of Finland.

tax rates and transfers from the central government are expected to increase notably. Social security funds' surplus ratio should remain in the vicinity of 3%. Surpluses and income from privatisations in 2002 will reduce central government debt by EUR 5 billion over the period 2002–2004. By the end of 2004 the debt should be down to just below 38% of GDP. The EMU-defined debt ratio for general government will decline more slowly, to 39% in 2004.

Total tax revenues increasing steadily

Despite tax cuts amounting to nearly EUR 500 million and disappearance of one-off revenue items, central government tax revenue remained at last year's level during the early part of this year while local government revenue continued to increase. And both levels of government will see further revenue growth in 2003, as total wages increase by about 5%. The partial inflation adjustment, cut in marginal tax rates, and increase in deductions for earnings- and income-related expenses included in the Government's draft budget for 2003 will not be sufficient to prevent wage earners from moving up a step in the progression. Moreover, the local government sector's disturbingly stubborn financial deficit suggests that many local governments will be obliged to raise their income tax rates further in 2003. In 2004 collections of direct taxes paid by households will grow by just over 7%, due to the steady growth of total wages and the less-than-full inflation adjustment of tax rates.

The Government's draft budget for 2003 does not include any changes in the base for taxes on corporate entities and hence revenue from these taxes is expected to grow in line with national and corporate incomes in 2003 and 2004. As to the division of revenues from taxes on corporate entities between central and local governments, the Government proposed a change that would raise the central government's share by about 3.5 percentage points to nearly 79% and reduce the local governments' share to just under 20%. The change is part of an agreed reform of recovery of VAT refunds to local governments⁶. The

⁶ In the Finnish national accounts, the ending of VAT refunds is booked in 2002 as an increase in transfers from central to local government. The central government is compensated for revenue losses by reducing local governments' share of revenue from taxes on corporate entities.

purpose of the reform is to reduce local governments' dependence on hard-to-predict revenues from taxes on corporate entities.

Total bookings of VAT collections have increased steadily throughout the early part of the year. The Government's proposal includes an increase for 2003 in the tax on manufacture of liquid fuels, electricity, coal, natural gas, and peat. The increase is estimated to boost revenues from the tax by about EUR 130 million. Revenues from all indirect taxes should grow in the coming years slightly more slowly than private consumption.

Social insurance contributions by the insured and employers will decline by just over EUR 600 million with the reduction in unemployment insurance premiums, employers' national pension contributions, and retirees' health insurance premiums. In 2003 and 2004 the bases for payment will not change essentially and receipts of social security fund contributions will increase roughly in line with total wages.

Public sector expenditures also increasing

Total central government expenditure will increase this year by about 7% on the previous year. Consumption expenditure will increase as government wages increase. The need to cover the deficit of the National Pension Institute will mean an increase in transfers to social security funds. Reform of the system for VAT refunds and bringing forward of the sharing of central government costs will boost central-to-local-government transfers.

The Government's 2003 draft budget includes only a few new permanent expenditure increases. The sum total, excluding interest payments on central government debt, will increase by about 3.5%. The total is about EUR 200 million more than the spending limit for 2003, as updated in March, and about EUR 1 billion more than the limit set in the Government's original programme. Coverage of the health insurance fund deficit will boost transfers to the National Pension Institute also in 2003. Local government transfers from the central government will increase by just over 7% in 2003 and by almost 12% in 2004. At the same time, interest payments on central government debt will decrease slightly.

Local government consumption expenditures will increase by about 6% pa over the forecast period. The growth will outpace earnings level growth, as it is assumed that local governments will increase the number of employees, especially toward the end of the forecast period, to cover employee shortfalls in health care and social welfare services. Local government investment expenditure in 2002 will remain at the peak level reached in 2001. Growth of the financial deficit will force local governments to cancel some of their planned investment projects in 2003. In 2004 investment will resume its upward trend because of a decrease in the financial deficit.

Expenditures of social security funds will increase as the number of pensioners increases, pension indices rise, and unemployment benefits are upgraded. Employment pension expenditures will grow by just over 6% pa in 2002–2004. At the same time, the number of recipients of national pensions will decrease and national pension expenditure will remain nearly unchanged. The increase in the number of unemployed will boost earnings-related unemployment compensation in 2002.

General government primary expenditures (excl. interest payments) will increase in step with nominal GDP over the period 2002–2004. The reform of local governments' recovery system for VAT refunds and coverage of the health care fund's deficit will require an increase in booking of expenditures amounting to nearly 1 percentage point compared to 2001. Even in the absence of these technical accounting measures, the ratio of primary expenditures to GDP would still be higher than in 2001.

Forecast risks

In the Bank's March forecast, it was assumed that the world economy had turned around at the start of the year and that recovery would gain momentum in the second half of the year, especially in the United States. This was also the received scenario of the international financial markets. Accordingly, expectations pointed to a rise in the level of interest rates in 2002.

The forecast at first appeared to be the reality. In the summer, however, early signs came in to the effect that the recovery was not on track. Share prices, which had begun to falter in the spring, dropped sharply in July and actually reversed expectations that

interest rates were set to rise in the major countries. Long-term rates declined substantially, as investors began to favour bonds at the expense of shares. The increase in uncertainty has also been evidenced by numerous survey findings indicating that confidence is waning among consumers and companies. The new situation is also apparent in forecasts – the optimism of the spring has been deleted.

The assumptions of the Bank's forecast regarding the world economy were cautious already in March, and there is still good cause for continued caution. On the other hand, estimated risks – downside vs upside – are now more balanced than was the case in March. If the uncertainty should disappear and share prices recover, the economy could move quickly into a broad-based recovery.

Monetary policy is accommodative globally and so is not an obstacle to recovery. There is an abundance of unused capacity and employees have not been dismissed in large numbers. Thus, with strong demand, a faster-than-forecast recovery is possible. The Finnish economy in particular could move into a stronger-than-assumed growth phase led by exports. The forestry industry and especially the electronics industry could both achieve faster growth than forecasted, even in the short run.

Faster-than-forecast growth of the world economy could, however, be associated with a rapid rise in import prices. And, besides this, there are other risks of higher inflation in Finland. The most important of these are connected with wage developments, as it appears that wage pressures are building up in the labour markets. In addition to the inflation risk, wage developments pose a particular threat to employment. On the other hand, the price of oil, which has risen lately, could stabilise at a lower-than-assumed level. Increasing competition can clearly be listed among the factors that are reducing inflation pressure in Finland. An example of this is the expansion of the operations of international retail chains in Finland.

However, the possibility that the world economy will continue to falter constitutes a major risk to the Finnish economy. If the US economy is driven into a double-dip recession or if a rise in the price of oil in connection with the Middle East situation should halt the recovery of the world economy, the negative consequences could hit the Finnish economy with considerable force. Companies have so far avoided large-scale layoffs and dismissals, even though production

has declined, but a weakening of the longer-term outlook for demand could quickly change the situation. An increase in unemployment would sharply reduce consumer confidence, which could have pronounced negative effects on consumption and the housing market. Excessive wage increases would only worsen the situation.

The lowering of market interest rates fosters growth and alleviates the effects of recent negative developments. However, even successful monetary policy cannot eliminate the business cycle. Prospects for the euro area are darkened especially by the problems many countries are facing as regards their public finances. Fudging the stability targets for public finances would not provide much additional room for countercyclical policy but would jeopardise the credibility of monetary union rules and possibly cause interest rates to start climbing again.

Shrinking labour force will weaken public finances

Weak employment developments have long been the primary cause for concern regarding the Finnish economy. Absent new measures to increase the work incentive, the employment rate could become mired at the current level. An increase in the rate would help significantly in adjusting the public sector's financial base to cope with the growing costs of pensions and health care that come with population ageing. According to the Bank's forecast, the employment rate will increase only slightly during the forecast period.

Tax easing boosts the supply and demand for labour and thus raises the employment rate. However, significant reductions in households' tax ratio have not been forthcoming. Thus far reductions in taxes on earnings and in indirect labour costs have been sufficient to prevent the automatic tax tightening, due to progressivity, that derives from a rise in the earnings level. They have not paved the way for economic growth nor increased the work incentive, and so their impact on the employment rate has been minor. The

Government's draft budget for 2003 includes small reductions in employers' costs and employees' taxes. Tax tightening by many municipalities will largely offset these reductions so that households' tax ratio will go on the rise again. Several years' effective efforts to reduce taxes thus appears to have come to a halt.

The principle obstacle to continued tax reduction would seem to be substantial growth of central government expenditures. From this perspective, the new tax philosophy behind the draft budget conforms with the new trend in expenditures. Use of ministry-specific spending limits in order to constrain real growth of central government expenditures worked well in the years 2000–2001. The tight spending policy of the period paved the way for the desired reduction in taxes. This year, however, expenditures have increased and future agreed-in-principle spending increases, such as the decision to raise the level of health care, will exacerbate spending pressures for years to come.

Tax easing should not be allowed to depend on yearly surpluses and deficits. From this standpoint and in light of the forecast, it would seem reasonable to continue with tax reductions in the 2003 budget. If public finances are to be kept on a solid basis in the coming years and decades, there will be no room for fudging on the goals of medium-term budget surplus for the central government and balance for local government finances. Thus reductions in taxes and employer costs are not sustainable unless we continue to keep a tight rein on spending. For many reasons, it appears that labour taxes will in any case have to be reduced. Two factors pushing in this direction are tax competition and the need to raise the employment rate. Thus the growth of central and local government expenditures should be budgeted on the bases of realistic longer-horizon estimates of tax revenue.

9 September 2002

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

Weakening employment – a threat to public finances

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The public sector financial position has weakened compared to the situation a couple years ago, as tax revenue growth, led by rising share prices, has levelled off. Nonetheless, public finances seem to be holding firm despite the meltdown of exceptional income growth. According to the Bank of Finland forecast, the general government surplus is firming at about 3.5% of GDP compared to the 7% peak reached in 2000. The central government's budget remains in surplus, and its debt is projected to recede to 38% of GDP by 2004, compared to 48% in 2000. In light of the Bank's forecast, public finances appear to be in better balance than projected in Finland's stability programme in autumn 2001. If the positive course of development continues – as assumed in the forecast – we can look forward to continued balance even beyond 2004.

This fairly positive picture however glosses over some structural problems in the background. The outlook is clouded by hidden pressures for higher public spending, a tax ratio lodged at a high level, and labour market problems. In the course of drafting of the 2003 budget it became evident that future slowing of the growth of expenditure will not be easy. For example, the politically agreed goal of preserving high-level health care will soon require either notable increases in total central government expenditure or politically difficult decisions on which expenditure items to cut. Besides these spending pressures, pension expenditures are set to take off within the next few years.

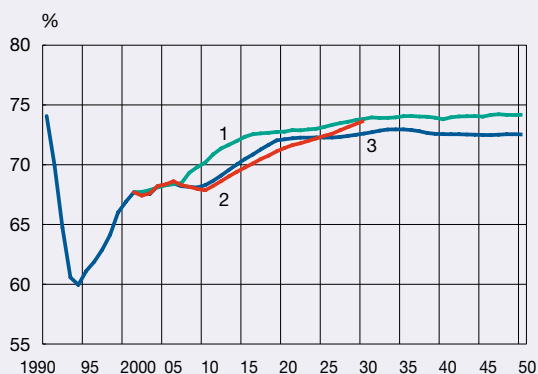
However, the prime threat to public finances resides in labour market changes necessitated by population ageing. The rapid economic growth achieved since the recession has not ushered in the hoped-for improvement in the employment situation. This means that high-level structural unemployment and the partly related penchant for

early retirement, along with population ageing, will put heavy strains on efforts to keep public finances in balance over the coming decades.

Several studies have been done recently on the effects of population ageing on public finances¹. Two factors come out of these studies as key to the financing of welfare services and hence to the maintenance of public finances: labour markets and efficient production of public services. In this article we examine the effects of these factors on long-term prospects for Finnish public finances. The evaluations are based on calculations done in the course of extending the Bank of Finland forecast to 2004. The calculations are aimed at showing the importance of employment trends and efficiency of public services production for long-term prospects of public finances (Kinnunen 2002). In calculating the required tax rates, it was assumed that central government finances would stay out of the red and that social security funds' surplus would stay in the range of 2–3% of GDP, ie enough to stabilise employment pension funds at roughly 60% of GDP.

¹ The Ministry of Finance's long-term calculations were done in spring 2001 (Ministry of Finance 2001). Subsequent weakening of the economic outlook and an agreement on pension reform in November are taken into account in the Ministry's recent publication (Ministry of Finance 2002). The effects of ageing on the demand for welfare services and their financing were also estimated in spring 2002 by a working group on financing of social expenditures (Ministry of Social Affairs and Health 2002). The Research Institute of the Finnish Economy did a study, using a general equilibrium model, on long-term effects of ageing on the macroeconomy and public finances (Valkonen 2002 and Lassila and Valkonen 2002).

Chart 1. Employment rate



1. Ministry of Finance (estim. 2001)
2. Ministry of Labour
3. Bank of Finland

Sources: Statistics Finland, Ministry of Finance, Ministry of Labour and Bank of Finland.

Room for tax cut will shrink if employment rate is low

Population ageing will reduce the number of employed persons in the coming decades, as baby boomers reaching retirement age reduce the ratio of working-age to total population. Another important factor in employment developments will be the growing proportion of the labour force approaching retirement age. Since older persons' labour force participation rate is lower than the average, this trend will reduce the overall employment rate. Various early retirement schemes set up in the early 1990s have made it economically feasible to retire well before the statutory retirement age. Movement into retirement was stepped up in the early 1990s when the demand for workers over age 50 declined as a result of economic restructuring and the long-term unemployment that resulted.

In the calculations below, the baseline scenario is the Bank of Finland's estimated employment path². Accordingly, ageing of the labour force notably reduces the employment rate – ie the ratio of employed to working-age population at the latter half of the current decade – which starts to trend gently upward only in the early part of the next decade (Chart 1). The employment rate stabilises at about 72%. The Bank's estimate assu-

mes that structural unemployment is lodged at 6% of the labour force. The estimate for the next few years is fairly much in line with that presented in the Ministry of Labour's recent report on employment (Ministry of Labour 2002). The Ministry of Labour, as compared to the Bank of Finland, looks for a slightly faster improvement in the employment situation in the latter part of the next decade and projects that a rising employment rate will push the unemployment rate below 4% by 2030. In an alternative – high employment – scenario for employment developments, the employment rate rises gradually to about 74% and stabilises. This assumption is also used in finance ministry

² The effects of population ageing on developments in the employment rate are estimated by specifying the effects of different age classes and cohorts on employment (Saareheimo 2002). Using these estimates and population projections, a long-term employment path was obtained. This path reflects the effects of population total and age structure on employment. It is also assumed that, as the population ages, the demand for labour declines more slowly than the supply, with the result that the average employment rate rises by 4 percentage points. This is assumed to be split evenly between the unemployment and the labour force participation rate. Structural unemployment is estimated at 6%. Also were taken into account the effects of mid-1990s changes in the pension system on average retirement age.

calculations in 2001 as well as in the Bank of Finland's earlier projections (Kinnunen 2002).

In the baseline scenario, the decline in the number of employed slows the growth of output and tax base, while increases in pensioners raises pension expenditures relative to GDP (Table). Employment pension contributions have to be increased by about 7 percentage points over the next two decades and, due to ageing-related increases in expenditures on health care and social welfare in the early 2030s, central and local government taxes have to be increased. The economy's tax ratio – tax revenue to GDP – increases by 6 percentage points (Chart 2).

In the higher-employment scenario, better employment numbers than in the baseline path boost the growth of GDP, which reaches a level nearly 3% higher than baseline at the end of the current decade. By 2015 the ratio of pension expenditures to GDP is 0.4 percentage point lower than in the baseline path. These developments reduce the required increase in social security contributions at the turn of the decade by about 1 percentage point and result in a tax ratio less than

1 percentage point lower than in the baseline scenario (Table, Chart 2).

The calculations show that population ageing could have a notable dampening effect on economic growth already in the next few years and thus generate considerable pressure for a boost in the tax ratio. If persons approaching retirement age do not continue to work to a considerably greater extent than before, the financial base of welfare services will be put to a hard test already during the next ten years.

Pension reform will raise the employment rate

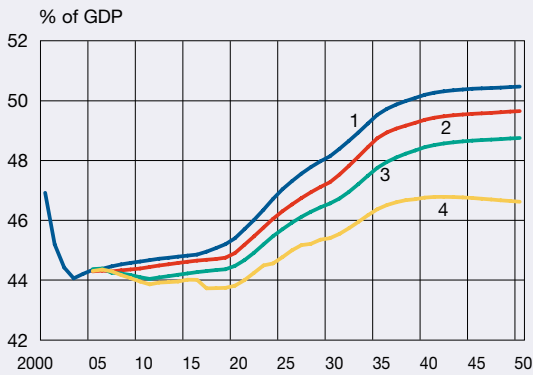
Progress is now being made to bolster incentives to stay longer in the labour force. It was agreed in 2001 that early-retirement benefits that had been built into the pension system would be limited in that individual early pensions as well as unemployment pensions would be ended completely and part-time pension terms made less advantageous. In the pension reform of 2001 agreement of principle was also achieved on

Table. Economic performance: baseline and alternative calculations

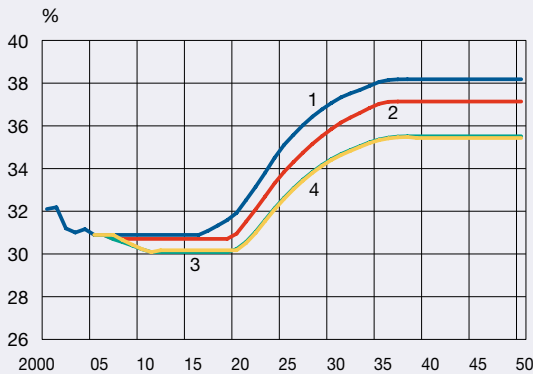
<i>Baseline</i>	2001–2005	2006–2010	2011–2020	2021–2030	2031–2040	2041–2050
GDP growth	2.2	1.8	1.6	1.3	1.5	1.3
Employment rate	67.9	68.2	70.6	72.3	72.8	72.5
Unemployment rate	9.0	8.0	6.6	6.0	6.0	6.0
Pension expenditure, % of GDP	11.0	12.1	13.6	15.5	16.3	16.1
Avg pension, % of avg wage	54.3	53.9	53.9	53.9	53.9	53.9
<hr/>						
<i>High employment</i>	2001–2005	2006–2010	2011–2020	2021–2030	2031–2040	2041–2050
GDP: difference vs baseline	0.3	2.8	2.8	3.0	2.5	2.9
Employment rate	67.8	70.3	73.5	75.6	76.2	75.9
Pension expenditure, % of GDP	11.0	11.8	13.2	15.1	15.9	15.7
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<i>Baseline + pension reform</i>	2001–2005	2006–2010	2011–2020	2021–2030	2031–2040	2041–2050
GDP: difference vs baseline	0.0	2.8	4.5	4.5	4.7	4.7
Employment rate	67.9	70.1	73.8	75.6	76.2	75.9
Pension expenditure, % of GDP	11.0	11.8	12.8	14.6	15.3	15.1
Avg pension, % of avg wage	54.3	55.0	56.6	56.6	56.6	56.6

Sources: Statistics Finland and Bank of Finland.

Chart 2.
Tax ratio



Ratio of social security expenditure to wage income



- 1. Baseline
- 2. High employment
- 3. Baseline + pension reform
- 4. Baseline + pension reform + efficient public svc

Sources: Statistics Finland and Bank of Finland.

flexible postponement of old-age retirement. According to finance ministry calculations, the pension reform as a whole should raise the average retirement age by about 1.5 years, which would reduce the number of pensioners by 7%. Moreover, the level of earned pensions would rise in the long run by 5% on average³.

Using these estimates, the pension reform boosts output by about 4.5% in the long run, compared to baseline. Consequently, the ratio of pension expenditure to GDP declines by about 1 percentage point. This reduces the increases needed

in the long run in the tax ratio (about 2 percentage points) and in the ratio of employment pension contributions to wages (nearly 3 percentage

³ The finance ministry's estimate of pension reform effects entails formidable uncertainties because at the time it was done precise information on the contents of the reform was not yet available. For example, details concerning compensation for removal of certain types of pensions were not clear. Moreover, the compromise of early September on the method of calculating pensionable income includes many elements that were not known when the ministry produced the estimate.

points). Thus the pension reform is adequate to offset only about a third of the tax increase needed to cope with labour-force ageing.

Improving productivity of public services provision would strengthen public finances

The growing demand for welfare services that comes with population ageing will be a burden on the economy, especially as the working-age population shrinks. Since the production of services is labour-intensive, efforts to improve its efficiency are critical. It is estimated that a productivity improvement in social and health services would strengthen considerably the financial base of the public sector. For example, the Ministry of Social Affairs and Health has estimated that, over the long run, improvements in health care technology alone could reduce local governments' social and health services staff by about 25 thousand (Ministry of Social Affairs and Health 2002). If services productivity is not improved in the public sector, productivity growth elsewhere in the economy will only raise the prices of public services, since public sector wages follow the long-run general trend in earnings, which follows the trend in average productivity growth.

In estimating the long-run effects of improved productivity of public services it was assumed that the demand for services is affected only by the age structure of the population. In the baseline calculation for public sector consumption, ageing-related health care and long-term care expenditures are treated as separate items (European Commission 2001). It is assumed that these items will remain constant by age cohort. The baseline scenario was compared to one in which productivity of ageing-related public services grows 0.5% percentage point faster. Improvements in the efficiency of public sector services production lower the price of public consumption and hence lower the ratio of public consumption to GDP. Improved efficiency in services production, together with pension reform, would shrink the tax gap – ie the need for a tax increase – to 2 per cent of GDP in the long run (Chart 2).

In the long run, this ratio is lowered by about 2 percentage points as a result of productivity

growth. This leads to an increase in central and local government surpluses, which in turn enables an approximate 1 percentage point reduction in the tax ratio in the early stages, assuming central government debt follows its baseline path. Taxes, however, have to be raised later as public spending outruns the tax base.

Labour force ageing – a risk for public finances

Ageing of the working-age population and labour force and increasing numbers of very old persons is a problematic combination for the strength of public finances. The population age structure, as it changes in an unfavourable manner, will have long-run implications for public sector financial balance and room for manoeuvre. The changes in public sector financial behaviour that population ageing will mandate are however extremely difficult to estimate. The longer the horizon, the longer the list of uncertainty factors. The sources of uncertainty for the coming decades are connected with overall economic and employment performance, whereas the longer horizon entails a huge uncertainty in connection with overall population trends. It is a major task to estimate migration, birth rates and longevity developments three decades ahead.

Another problem with long-term projections is that, regardless of how sophisticated or simple the methodology, the results depend not only on the assumptions but also critically on the starting situation with respect to public finances. Calculations of the significance of ageing and political choices for the long run cannot be construed as forecasts – not even for the medium term. At best, these can be used to determine the significance of certain policy choices for the long run or to show the relative importance of different factors for the long run.

The calculations presented in this article focus on the importance of employment and efficiency of public services production. Structural unemployment, which is lodged at a high level, and the rise over the next few years in the average age of the labour force will weaken the financial base of public services. The calculations presented show that, if a distinct change in retirement behaviour

is not in the offing, pressure will clearly increase for tax tightening in the coming years. In this respect, the results are more pessimistic than those of the Ministry of Finance's projections, which do not take into account the employment worsening effects of baby boomer ageing. Our calculations also give cause for concern about pressures for tax tightening in connection with pension reform. Even should employment increase as average retirement age rises, the reform appears adequate only for alleviating the other ageing-related pressures for tax increases.

The issue of increasing the productivity of public services is one that is especially difficult to nail down. It is known that there are many ways to achieve improvements, but magnitudes of the improvements have not been estimated. The calculations presented in this article concerning efficiency improvements in the production of public services show that if the provision of ageing-related care – acute and long term – can be organised more efficiently, the pressure for tax tightening will be reduced considerably. If productivity were to increase as calculated here and pension-reform effects turned out as estimated by the Ministry of Finance, it would be possible to finance ageing-related costs roughly at the current tax ratio.

9 September 2002

■ **Key words: population ageing, tax rate, pension reform, efficiency of public services production**

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Factors affecting employment

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By international standards, Finland's employment growth during the 1980s and especially the 1990s can be described as modest. Economic growth derived more from productivity growth than from increasing employment. In fact, Finnish productivity growth on average ranked among the highest for OECD countries. The ratio of employment to output has declined considerably more rapidly in Finland than in the major industrial countries (Chart). The aim of this article is to identify the reasons for the slowness of employment growth in Finland on the basis of earlier studies.

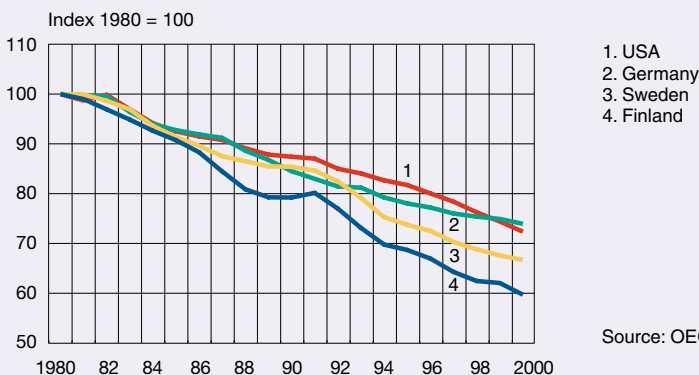
Since becoming industrialised, Finland has twice achieved a very high rate of employment – immediately after the last war and in the 1980s. The latter part of the 1990s was, in contrast, marked by a relatively low employment rate, despite a long period of record high GDP growth rates coming out of a deep recession. The GDP growth was spurred by robust 'new economy' improvements in productivity. How-

ever, the labour demand that resulted was concentrated mainly on skilled and highly educated persons whereas the less well educated were largely denied the fruits of growth.

At the core of Finland's employment problem are several mismatch problems. While there are enough jobs for well educated persons, the need for manual work and demand for poorly educated persons have declined – and will continue to decline – along with structural changes in the economy. The geographic mismatch problem has remained but is evolving as former growth areas become new pockets of unemployment.

Productivity growth in Finland's open sector has in recent decades ranked among the fastest – along with Sweden's – in the industrial countries. In terms of product competitiveness and export growth, this is a central factor. Exports have enabled a rise in the standard of living of this open and small (in terms of domestic markets) economy.

Chart. Employment-to-GDP ratio



Nonetheless, world markets keep exporters under constant pressure to rationalise their operations; hence it is possible that their workforce will not be significantly expanding. For this reason there is a need for the domestic economy – mainly service providers – to employ the rest of the labour force. As this has not happened in Finland, it becomes a major challenge for economic and employment policy.

Main employment trends in Finland

At the start of our period of comparison, in 1980, the structure of Finland's output was unfavourable in terms of employment in that agriculture still accounted for a high percentage of the labour force compared to other industrial countries, which meant that a sharp cutback was unavoidable. As employment in primary production declined, employment growth in the 1980s was highly concentrated in the service sector. This trend was closely associated with the creation of welfare and educational services, which led to a sharp increase in the employment share of the public sector (Table 1).

In the 1980s employment growth was robust in the private service sector. Especially strong employment growth was posted in the wholesale-retail trade and business service sectors. Financial service firms also expanded their workforce.

The deep recession of the early 1990s had a major impact on Finland's output and employment structure. Many low-income occupations and jobs disappeared permanently and structural employment problems developed. The share of agriculture in the economy continued to decline, spurred partly by EU membership, and service sector growth was no longer able to offset job losses in primary production.

After the recession, it became clear that rapid economic growth did not in fact entail corresponding employment growth but was based mainly on productivity growth associated with technological progress and globalisation. Employment increased sharply in higher paid service jobs and those requiring a good basic education, eg in ICT and business services. By contrast, job opportunities declined for the less well educated. However, employment developments in the private service sector as a whole were fairly weak in the 1990s, and the workforce share of

Table 1. Employed persons by industry in Finland, 1980, 1990 and 2000 (thousand persons)

Industrial classification	1980		1990		2000	
	Number	%	Number	%	Number	%
Agriculture and forestry	319.6	13.6	221.4	8.9	142.0	6.2
Industry and construction	795.7	33.8	742.8	30.0	641.3	28.1
Mining	9.4		6.5		5.4	
Electricity	26.7		26.0		18.2	
Manufacturing	581.9		503.9		459.1	
Construction	177.7		206.4		158.6	
Private services	728.0	30.9	857.0	34.6	830.5	36.4
Transport and communications	161.5		177.6		167.8	
Wholesale and retail trade	292.8		322.9		281.0	
Hotels and restaurants	66.2		77.5		72.0	
Finance and insurance	54.6		66.1		40.1	
Real estate and business svc	77.0		136.8		182.7	
Other private services	75.9		76.1		86.9	
Public sector	446.2	18.9	575.2	23.2	559.7	24.5
Central gov	128.1		149.3		140.9	
Local gov	310.6		417.1		409.3	
Social security funds	7.5		8.8		9.5	
Other	67.2	2.8	80.4	3.3	109.7	4.8
Total	2,356.7	100.0	2,476.8	100.0	2,283.2	100.0

Source: Finnish national accounts.

Table 2. Service sector share of total employment, %, 1998

Country	All services	Business services	Distribution	Personal services	Social services
USA	73.8	15.8	21.2	12.1	24.8
Germany	62.6	10.9	19.9	7.1	24.8
France	69.2	11.9	19.9	8.3	29.2
Sweden	70.9	12.2	19.4	5.9	33.4
Finland	64.2	11.3	18.8	6.2	28.0

Source: OECD Employment Outlook 2000.

private sector services was small as compared to many other western countries (Table 2). Nonetheless, in the post-industrial society, it is the service sector that has the potential to employ those released from industry and primary production.

The peak numbers of 1990 were not achieved in 2000 in any of the traditional industries, except for the above-noted completely restructured ones. Despite a modest employment performance, the share of the service sector has increased, as employment has decreased yet faster in other sectors such as agriculture and certain industrial sectors. For the same reason, the employment share of the public sector also continued to increase, albeit modestly, during the 1990s, even though the number of employed did not increase.

Structure of production and employment

The internationalisation of production activities in the 1990s was a key factor in output restructuring. It created new production and employment opportunities, especially in industry and ICT, and was an important factor in the employment of skilled persons in traditional export industries. On the other hand, internationalisation has enabled the transfer of production of certain products to lower-wage countries and thus reduced labour demand in low-wage parts of the open sector.

In the latter part of the 1990s, there were relatively more company start-ups in Finland than in EU countries on average. Start-ups have been especially

brisk in the ICT and business service sectors. Many new companies have also been established in the construction sector, albeit the comparison basis has been low since the recession. Company turnover was over 10% pa during the 1990s, ie close to the international average. Turnover is clearly associated with new products, so that current high rates in certain areas do not portend high turnover in the future.

Although company start-ups were frequent in Finland in the 1990s, the ratio of companies to population is still low compared to many OECD countries. It seems that in countries with a large tax wedge (Europe) the service sector accounts for a smaller share of employment than in countries with a small tax wedge (USA, Australia, New Zealand). Finland's special problem would appear to be the slowness of the new-company approval process, which may delay start-up for nearly a year. And small-scale enterprise may be discouraged by the income possibilities afforded by the tax and social welfare system.

Factors affecting labour market functioning

In addition to industry-specific factors, many studies have found a connection between employment performance and certain structural features that reduce the flexibility of the labour markets such as degree of unionisation, degree of centralisation of wage settlements, rate of labour taxes, size of social welfare benefits, level of employment protection, and size and duration of unemployment benefits. Of these, the first two have not been found to be related to employment while increases in the others have been found to be detrimental to employment.

These factors largely explain the difference in employment performance between the United States and Europe. A significant difference – as regards incentive structure – is that in the United States unemployment benefits are normally paid for just a half-year whereas in European countries they may be paid for many years. Currently, the European short-term (less than a year) unemployment rate is on a par with that of the United States, ie around 5%. The longer-term unemployment rate is however very low in the United States, vs 3.5% for Europe. In Europe structural sclerosis has slowed the adjustments to macroeconomic shocks, such as the oil crises and the

1980s anti-inflationary economic policies, so that the unemployment effects of shocks have been prolonged. Efforts to alleviate hardship from long-term unemployment by improving unemployment benefits have further distorted the incentive structures.

It is more difficult to find an explanation for the notable differences in employment across European countries. The social welfare and tax systems in these countries do not differ greatly. A possible reason for differences in employment performance is variation in authorities' efforts regarding labour market policy, ie support of job-seekers by furthering their education or providing public subsidies for employment. The effectiveness of these kinds of 'welfare-to-work' policies varies widely across countries. Of the European countries, Denmark, Netherlands, Sweden and United Kingdom are currently pursuing effective labour market policies. In Finland also, 'active labour market policy' has been significantly upgraded in recent years.

It is clear that the Finnish unemployment insurance and social welfare systems have been detrimental to the work incentive. The level of welfare benefits has in some cases been so high as to destroy the incentive to accept low-wage jobs, and hence jobs have not been created in the lower productivity industries. This arrangement has remained in place partly because of the prevalence of long-term unemployment. Even after a long spell of unemployment, it has not been economically advantageous to move into the labour market. Disposable income could have decreased in such case – certainly, if one took a part-time job. The incentive problem has been most acute for families with children, in which the only parent in the labour market loses his job and becomes dependent on the social welfare system. Even an incentive problem associated with a short-term situation can lead to a long period of exclusion from the labour market. It is especially disconcerting to see young persons become dependent on social welfare.

Labour market reform in the EU and Finland

In its economic policy recommendations of recent years the European Union has stressed the structural problems of European labour markets. Structural unemployment in EU countries appears to have

lodged at a high level despite boom conditions in the late 1990s, and there are still mismatch problems in the labour markets – geographic, occupational and educational. In order to reduce unemployment, the EU has called for numerous improvements in labour market functioning, a key one being reduction of labour costs via reductions in taxes and other labour-related expenses. Measures of this nature have in fact been taken in several EU countries (Table 3).

In Finland the first major effort occurred in 1996 in the form of a working group on incentive distortions. The group recommended reforms aimed at lowering effective marginal tax rates and increasing the return on work relative to social welfare. Many of the group's recommendations have been effected: increase in earned income deduction in local taxation, less discretion as to income in provision of labour market subsidies, amalgamation of subsistence and housing aid, switch from income-class to income-percentage in community day care fees.

In Finland tax rates on wages have been reduced on several occasions over the last few years, most notably, in relative terms, in 2001 and 2002. The tax cuts have been fairly evenly spread across the income classes – with slight emphasis on the lowest income groups. Nonetheless, the middle-income-class tax rate (and wedge) remains almost 3 percentage points above the average for the EU (Table 3). Thanks to the earned income deduction in local taxation, the middle-income-class tax rate had by last year fallen by nearly 5 percentage points from the peak reached in 1994. However, in many cases increases in local tax rates have partly offset the effects of the increase in earned-income deduction. The economy's aggregate tax ratio has not fallen to the same extent. Unemployment and social benefits as a percentage of labour income (replacement rate) have also declined, especially for workers without families.

The changes that have been implemented have improved work incentives, especially among low-income and non-family workers. Reforms in the tax and social welfare systems are estimated to have significantly increased the demand for labour. Tax reductions alone account for about 10% of employment growth since 1997. It also appears that the incentive problems no longer pose such a serious obstacle to employment and that the prime obstacles to job creation are now demand-reducing factors such as agreed minimum wage rules.

Table 3. Tax wedge and net replacement ratio in Finland, EU and USA, 1994, 1999, 2000 and 2001

Income and family class	Finland				EU			USA		
	1994	1999	2000	2001	1994	2000	2001	1994	2000	2001
Tax rate, middle income ¹⁾	50.5	47.4	47.3	45.9	44.6	43.6	43	31.2	30.8	30.0
Tax rate, low income ²⁾	..	42.6	42.4	40.9	..	38.6	37.8	..	29.0	27.7
NRR, low-income family ³⁾	87.0	83.0	72.0	67.0	..	59.0	59.0	..
NRR, low-income indiv	83.0	63.0	71.0	68.0	..	59.0	59.0	..

¹⁾ Tax wedge: ratio of income tax plus employer and employee social security contributions to labour cost of mid-income employee, %.

²⁾ Low-income employee's income is 67% of mid-income employee's.

³⁾ Net replacement ratio (NRR): ratio of unemployed person's first-month after-tax benefit to wage income, 2-child family.

Source: EU Commission.

Further reforms needed

Employment developments in Finland over the past decade have been poor in quantitative terms but good in qualitative terms, judging by international standards. The growth in labour productivity has been world class, which has ensured the competitiveness of the open exporting sector and rapid export-driven growth of the small open economy. By contrast, Finland's share of employment accounted for by less educated persons in the service sector has remained small. Incentive problems connected with tax and social welfare systems and minimum wages fixed in wage agreements have boosted service prices so high as to substantially reduce the demand. Many tasks that would normally belong to the market economy have been shifted to the home or are simply left undone.

Rapid post-recession changes in output structure made Finland a leader in ICT, and a large number of ICT-related jobs were created in the 1990s. The structural changes have however exacerbated the problems of underdeveloped areas in such a way that ICT growth has not been helpful in alleviating them. Area-specific unemployment problems, as well as mismatch problems, are apparent in the demand and supply of skilled workers.

The slated movement into retirement of older workers during the current decade provides an opportunity to resolve the problems of the less educated and older workers. But to take advantage of this opportunity would require the provision of possibilities and incentives for persons approaching retirement age to continue to work. The on-going reform of the pension system is heading in the right direction, albeit at a snail's pace.

Changes in the past few years in the tax and social welfare systems have focused to a large extent on work incentives. Further reform is needed in order to make work advantageous regardless of family size or other conditions. Changing the incentives will hardly have a significant impact on the present 'hard core' problem of long-term unemployment of older workers. The system must however be revamped from the perspective of the younger workers and must take a long-term view. Properly aimed incentives can prevent a resurgence of hard core exclusion from the labour market and unemployment.

25 July 2002

■ **Key words: employment, structure of production, labour market reforms**

Item

EUR 10 coin commemorating 50th anniversary of Helsinki Olympic Games 1952

The Ministry of Finance has decided on the minting of an EUR 10 commemorative silver coin to celebrate the 50th anniversary of the 1952 Olympic Games in Helsinki. The coin comprises 92.5% silver, weighs 27.4 grams and measures 38.6 mm in diameter. The maximum mintage is 50,000 pieces.

The coins are the second set of Finnish silver EUR 10 commemorative coins. The obverse of the coin – designed by Hannu Veijalainen – has embossed the year 2002, together with the Olympic Stadium and its tower, and offers a glimpse of the original 1952 coin minted in commemoration of the Olympic Games in Helsinki. The reverse of the coin – designed by Erkki Vainio – shows the globe with Finland located in the North. Above the globe is a figure of flames symbolising the Olympic spirit, and inscribed

around the edges are the words SUOMI, FINLAND and 10 EURO. These silver coins provide an excellent example of Finnish design and craftsmanship in the minting of coins.

The coin was issued on 21 August 2002. There are two different versions of the coin: a normal BU version priced at EUR 32 (already sold out) and a proof version priced at EUR 52. The coins can be ordered from the Mint of Finland Ltd.



Key interest rates

The main refinancing operations are the principal monetary policy instrument used by the Eurosystem¹. Changes in the interest rate applied in the main refinancing operations signal the stance of Eurosystem monetary policy and have a major impact on the shortest money market rates. From the start of 1999 to June 2000 the main refinancing operations of the Eurosystem were conducted via fixed rate tenders. At its meeting on 8 June 2000 the ECB Governing Council decided that, starting with the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tenders, using the multiple rate auction procedure. The Governing Council also decided to set a minimum bid rate for these operations. The minimum bid rate was initially 4.25%, the same level as applied in the previous fixed rate tender operations. Since then, the minimum bid rate has been changed six times. Effective 14 November 2001, the minimum bid rate is 3.25%. In the new procedure, the minimum bid rate signals the monetary policy stance, which previously was indicated by the rate applied to fixed rate tenders.

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

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

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

Open market operations

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

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

2) The *longer-term refinancing operations* are liquidity-providing standard tender operations with monthly frequency and three-month maturity. These operations are used to provide counterparties with additional longer-term refinancing. These operations are not intended for market signalling and hence they are normally executed on the basis of variable-rate tenders.

3) *Fine-tuning operations* are executed on an ad hoc basis in order to smooth interest rate movements caused by unexpected changes in market liquidity. Fine-tuning operations are executed by national central banks primarily as reverse transactions, but they can also take the form of outright transactions, foreign exchange swaps or collection of fixed-term deposits. Fine-tuning operations are executed via quick tenders or bilateral procedures. Under exceptional cir-

cumstances and by decision of the ECB Governing Council, the ECB may execute fine-tuning operations in a decentralised manner.

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

Standing facilities

The standing facilities are intended to limit excessive movements in overnight interest rates by providing or absorbing overnight liquidity and to signal the general stance of monetary policy. Two standing facilities are available: the marginal lending facility and the deposit facility. Counterparties can use the marginal lending facility to obtain overnight liquidity from national central banks against eligible assets. The interest rate on the marginal lending facility provides a ceiling for the overnight market interest rate. Counterparties can use the deposit facility to make overnight deposits at national central banks. The interest rate on the deposit facility provides a floor for the overnight market interest rate. Under normal circumstances, there are no quantitative limits on access to the standing facilities.

Minimum reserve system

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

In order to pursue the aim of stabilising interest rates, the Eurosystem minimum reserve system enables institutions to make use of averaging provisions. Compliance with the reserve requirement is determined on the basis of an institution's average daily reserve holdings over a one-month maintenance period. Institutions' holdings of required reserves are remunerated at the interest rate of the main refinancing operations. When the main financing operations are conducted as variable rate tenders, the interest rate on minimum reserves is determined on the basis of the marginal interest rates applied in the tenders held during the maintenance period in question.

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

Counterparties to monetary policy operations

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

Assets eligible for monetary policy operations

Under the ESCB/ECB Statute, all Eurosystem credit operations must be based on adequate collateral. The

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

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

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Juhani Laurila **Transition in FSU and sub-Saharan countries: The role of institutions.** 62 p. ISBN 951-686-3, print; ISBN 951-686-837-1, online.

Abstracts

Discussion papers

Law or finance: Evidence from Finland

Ari Hyytinen – Iikka Kuosa – Tuomas Takalo
8/2002

- Key words: corporate finance, financial intermediation, corporate governance

Although it is widely acknowledged that the benefits of corporate governance reform could be substantial, systematic evidence on such reforms is scant. We both document and evaluate a contemporary corporate governance reform by constructing 18 measures of shareholder and creditor protection for Finland for the period 1980–2000. The measures reveal that shareholder protection has been strengthened whereas creditor protection has been weakened. We also demonstrate how the reform is consistent with a reorganisation of the Finnish financial market in which a bank-centred financial system shifted from relationship-based debt finance towards increasing dominance by the stock market. We find evidence that the development of shareholder protection has been a driver of the reorganisation, whereas the changes in creditor protection have mirrored market developments.

Return-volatility linkages in the international equity and currency markets

Bill B. Francis – Iftekhar Hasan – Delroy M. Hunter
9/2002

- Key words: international asset pricing, exchange rate determination, equity markets, relationships between currency and equity markets.

This paper, which is motivated by the literature on international asset pricing and recent work on exchange rate determination, investigates dynamic relationships between major currency and equity markets. Using a multivariate GARCH framework, we examine conditional cross-autocorrelations between pairs of national equity markets and related exchange rates. This provides a parsimonious way of testing mean-volatility relationships in currency and equity

markets and re-examining the robustness of relationships between equity markets, while controlling for exchange rate effects. We find that the relationship between currency and equity markets is bi-directional, significant, persistent, and independent of the relationship strictly between equity markets, and that it is better captured by the conditional second moments.

Cash usage in Finland – How much can be explained?

Heli Paunonen – Hanna Jyrkönen
10/2002

- Key words: cash usage, euro cash changeover

The electronification of retail payments has been rapid in Finland. The use of payment cards and credit transfers is very common. However, cash is still used quite widely, especially for small value purchases. There are no statistics available on values or numbers of cash payments, because cash is in open circulation and so it is impossible to trace all cash transactions. In this study we investigate cash usage during the period 1995–2000 and assess the share of cash usage that cannot be explained. According to our findings, the share of unexplained cash usage amounted to about one-half of currency in circulation in 2000. However, with the recent conversion to euro cash, we have additional information on cash usage. Using this new information, we find that the unexplained share of cash usage was less than one-third in 2000. Cash usage has recently been examined by the central banks of Norway and Sweden. We thus compare the results of three central bank studies. In addition, we discuss the euro cash changeover and the extra information now available on cash usage.

Total factor productivity growth in European stock exchanges: A non-parametric frontier approach

Heiko Schmiedel
11/2002

- Key words: stock exchanges, productivity, technological progress, Europe

This paper examines progressive changes in productivity of the European stock exchange industry us-

ing non-parametric frontier techniques. Within the framework of Malmquist indices, total factor productivity growth is decomposed into technological progress and technical efficiency change for a balanced panel of all major European stock exchanges over the period 1993–1999. The principal findings indicate an overall rise in productivity over the sample period, which is driven more by technological innovation than by efficiency improvements. According to organisational setup, technological innovation is more pronounced for exchanges with the following characteristics: automation, equity and derivatives trading, for-profit governance structure, large or medium-size capitalised markets. Technological progress can be interpreted as a sign of the dynamic nature of the whole exchange industry, in which stock exchanges take advantage of intense diffusion of new cost-effective technologies and information systems to leverage themselves onto a higher production frontier.

Banking sector output and labour productivity in six European countries

Leena Mörttinen

12/2002

■ Key words: banks, service production, productivity

This paper contributes to the discussion on the measurement of banking sector output. It is also a prelude to discussion on possible causes of productivity change in banking. We demonstrate how the banking sector's service production can be measured using aggregate financial statement and payment transactions data. We compute banking sector labour productivity Tornqvist indices for six countries (Finland, Sweden, United Kingdom, Germany, France and Italy) over a period varying from 11 to 20 years. According to the results, Finnish banking sector productivity has improved via a substantial reduction in size of labour force, whereas output growth has been rather modest. Although in most of the other countries the restructuring process has been less intense, most of the sectors studied have improved in terms of overall output and labour productivity, especially since the mid-1990s.

Hedge funds

Pertti Pylkkönen

13/2002

■ Key words: hedge funds, mutual funds, institutional investors

Hedge funds have over the last ten years accumulated large amounts of new investment capital. Their operations have spread in recent years from the United States and offshore markets eg into Europe, which has abetted the continuous expansion of the hedge fund industry. Hedge funds have attracted new investors in large numbers. Many institutional investors such as pension funds have begun to channel investment money into them. And individual investors, to a growing extent, are finding hedge funds to be a useful tool for portfolio diversification. Because of their rapid growth and, in many cases hefty returns, hedge funds have raised the level of interest in share investment. To be sure, a few crisis situations have grabbed the headlines. Hedge funds have been blamed for currency speculation and for numerous financial crises. The Long-Term Capital Management fund attracted widespread attention when, in 1998, it narrowly escaped bankruptcy, apparently due to a bailout by the US Federal Reserve. This event was followed by extensive discussion of exactly what types of bailout operations a central bank should undertake in order to maintain financial stability. The LTCM case also engendered demands for tighter supervision of hedge fund activities.

Effects of fiscal policy on the durability of low inflation regimes

Tapio Pohjola

14/2002

■ Key words: inflation, fiscal policy, fiscal theory of inflation, Stability and Growth Pact

This paper deals with the interaction of fiscal and monetary policy when the central bank is pursuing a price stability-oriented monetary policy. In particular, we study the durability of the price stability regime when public debt accumulates as a result of ultimately unsustainable deficits. The growth of indebtedness causes the collapse of the price stability re-

gime after a period of rising deficits. The budget deficit is endogenously determined in the model, as a result of government's decisions on how to finance its expenditure. The alternative methods of finance are taxes, debt, and seigniorage. Under the price stability regime, only the first two methods are available, but in the long run taxes and seigniorage are the only alternatives. The price stability regime collapses when the public debt reaches an endogenously determined threshold, which makes reneging on price stability as attractive as accumulating more tax burden for the future. We are able to solve for the critical level of debt, the timing of the collapse, and the reaction of taxes to the collapse of the price stability regime. The critical level of debt depends, inter alia, on the level of government consumption, the real interest rate, the velocity of money, and the efficiency-effects of taxation. The results are illustrated by several numerical simulations.

Banks' option to lend, interest rate sensitivity, and credit availability

Iftekhar Hasan – Sudipto Sarkar
15/2002

- Key words: interest rate risk, option to lend, banks' lending capacity, maturity intermediation

Interest rate risk is a major concern for banks because of the nominal nature of their assets and the asset-liability maturity mismatch. This paper proposes a new way to derive a bank's interest rate sensitivity, by examining separately the effects of interest rate changes on existing loans (loans-in-place) and potential loans (loans-in-process). A potential loan is shown to be equivalent to an American option to lend, and is valued using option theory. An increase in interest rates usually has a negative effect on existing loans. However, if both deposit and lending rates rise by the same amount, the value of a potential loan generally increases. Hence a bank's lending slack (ratio of loans-in-process to loans-in-place) will determine its overall interest rate risk. Empirical evidence indicates that low-slack banks indeed have significantly more interest rate risk than high-slack banks. The model also makes predictions regarding the effect of deposit and lending rate parameters on bank credit availability. Empirical tests with quarterly data are generally supportive of these predictions.

A descriptive analysis of the Finnish treasury bond market 1991–1999

Matti Keloharju – Markku Malkamäki –
Kjell G. Nyborg – Kristian Rydqvist
16/2002

- Key words: treasury bond auctions, secondary market

This paper presents a descriptive analysis of the primary and secondary market for Finnish treasury bonds. The paper focuses on three issues. First, we report basic descriptive statistics such as auction volumes and secondary market yields and volumes. Second, we estimate the revenues earned by primary dealers from the treasury bond market. Third, we analyse the development of the price of the auctioned bonds, relative to other benchmark bonds, around the time of the auction. We find evidence of a price decrease in the auctioned bond series before the auction and a price increase after the auction. This pattern is strongest for 1992–1994 when Treasury funding needs were heavy and secondary market trading volume of treasury bonds was modest.

Lender of last resort and the moral hazard problem

Mikko Niskanen
17/2002

- Key words: central bank, liquidity provision, lender of last resort, moral hazard

The paper considers a model in which limited liability causes an asset substitution problem for banks. The problem can at times become so severe that the current regulatory framework – based on a combination of effectively full deposit insurance, minimum capital requirements and prudential supervision – proves inadequate for mitigating the moral hazard. Against this background, consideration is given to the question of how, and at what cost, an increase in market discipline would improve incentives. Finally, the additional microeconomic incentive effects of lender of last resort (LOLR) arrangements in the various alternatives is discussed. In conclusion, it is argued that LOLR arrangements in which the terms of liquidity support depend on the bank's risk profile can be effective in improving the bank's incentives to make the desired risk choice in the first place.

Policy interaction, learning and the fiscal theory of prices

George W. Evans – Seppo Honkapohja
18/2002

- Key words: inflation, expectations, fiscal and monetary policy, explosive price paths

We investigate both the rational explosive inflation paths studied by McCallum (2001) and the classification of fiscal and monetary policies proposed by Leeper (1991) for stability under learning of rational expectations equilibria (REE). Our first result is that the fiscalist REE in the model of McCallum (2001) is not locally stable under learning. By contrast, in the setting of Leeper (1991), different possibilities can obtain. We find, in particular, that there are parameter domains for which the fiscal theory solution – in which fiscal variables affect the price level – can be a stable outcome under learning. For other parameter domains, the monetarist solution is the stable equilibrium.

BOFit Discussion papers

Investigating the Balassa-Samuelson hypothesis in transition:

Do we understand what we see?

Balázs Égert
6/2002

- Key words: Balassa-Samuelson effect, productivity, real exchange rate, transition, panel cointegration

This paper studies the Balassa-Samuelson effect in the Czech Republic, Hungary, Poland, Slovakia and Slovenia. Time series and panel cointegration techniques are used to show that the BS effect works reasonably well in these transition economies during the period 1991 Q1 to 2001 Q2. However, productivity growth does not fully translate into price increases due to the structure of CPI indexes. We thus argue that productivity growth will not hinder the ability of the five EU accession candidates to meet the Maastricht criterion on inflation in the medium term.

Moreover, the observed appreciation of the CPI-deflated real exchange rate is found to be systematically higher compared to the real appreciation justified by the Balassa-Samuelson effect, particularly in the cases of the Czech Republic and Slovakia. This may be partly explained by the trend appreciation of the tradable-goods-price-based real exchange rate, increases in non-tradable sector prices due to price liberalisation and demand-side pressures, and the evolution of the nominal exchange rate due to the exchange rate regime and magnitude of capital inflows.

Financial contagion, interest rates and the role of the exchange rate as shock absorber in central and eastern Europe

Maurizio Michael Habib
7/2002

- Key words: exchange rates, short-term interest rates, volatility, Czech Republic, Hungary, Poland

This paper studies the impact of external factors on daily exchange rates and short-term interest rates in the Czech Republic, Hungary and Poland during the period August 1997 – May 2001. I find that neither exchange rates nor interest rates are influenced by short-term German interest rates. Nevertheless, I show that shocks to emerging-market risk premia had a significant impact on exchange rates in all three Central and Eastern European countries and on interest rates in the Czech Republic. In addition, studying the second moments of the variables, I demonstrate that Czech and Polish exchange rates were affected by ‘volatility contagion’ coming from emerging markets. I find also some support for the ‘volatility contagion’ hypothesis on Czech interest rates. These findings shed some doubts on the alleged theoretical ability of a floating exchange rate – such as in the Czech Republic – to absorb external shocks and insulate a country’s domestic monetary policy completely. However, the spillover effect on Czech interest rates might be explained by the ‘managed’ nature of the exchange rate regime, thereby re-establishing some credibility of the theory.

Real currency appreciation in accession countries: Balassa-Samuelson and investment demand

Christoph Fisher

8/2002

- Key words: real exchange rate, Balassa-Samuelson effect, transition economies, panel

The Balassa-Samuelson effect is usually seen as the prime explanation of the continuous real appreciation of central and east European (CEE) transition countries' currencies against their western counterparts. The response of a small country's real exchange rate to various shocks is derived in a simple model. It is shown that productivity shocks work not only through a Balassa-type supply channel but also through an investment demand channel. Therefore, empirical evidence apparently in favour of Balassa-Samuelson effects may require a re-interpretation. The model is estimated for a panel of CEE countries. The results are consistent with the model, plausibly explain the observed real appreciation and support the existence of the proposed investment demand channel.

Financial sector development in transition economies: Lessons from the first decade

John Bonin – Paul Wachtel

9/2002

- Key words: capital markets, financial sector, privatization, transition economies

The first decade of transition witnessed rapid and tumultuous financial sector development. Although, few transition economies have reached the point where institutions and markets fulfill all the functions of market based financial intermediation, progress has been much more rapid than had been anticipated. In many countries, active market-oriented financial institutions function where there was only a state planning mechanism a decade ago. Initial experiences showed that bank privatization programs often failed to achieve independence from government control and from undesirable weak clients. It is now widely accepted that the participation of foreign strategic investors in banking is an effective

way of meeting these goals. Capital market development is complicated by the need to support the development of institutional infrastructure and regulatory mechanisms while at the same time avoiding interference in the markets. In many instances policy makers expected immature markets and institutions to accomplish unattainable goals. Equity markets cannot effectively support mass privatization programs. There are still many missing pieces in virtually all of the transition country capital markets.

Transition in FSU and sub-Saharan countries: The role of institutions

Juhani Laurila

10/ 2002

- Key words: sub-Saharan Africa, former Soviet Union, property rights, institutions, growth, international trade, development assistance

This study compares transition processes in countries of Central and Eastern Europe, the former Soviet Union (FSU) and sub-Saharan Africa. By widening the scope from most- to least-developed transition economies, the study establishes the importance of a strong state with evolved institutional capacity to protect citizens, enforce property rights and generate social capital. The evidence presented further argues that enforceable, credible property rights with associated market discipline are among the best antidotes to corruption, shadow economies, criminal injustice and poverty. The presence of accountable institutions also influences economic growth and the ability of a country to attract trade and foreign direct investment. Consequently, when institutions of FSU and sub-Saharan countries develop to the point where they become attractive to traders and investors from rich countries, their governments need to focus on abolition of barriers to trade, investment and capital. The author commends the recent reorientation of the international donor community towards encouraging recipient governments to commit credibly to increasing capacities of their state institutions with a view to supporting property-based rule of law and social order.

Land, climate and population

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

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

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

Form of government

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

The legislative power of the country is exercised by Parliament and the President of the Republic. The supreme executive power is vested in the President, who is elected for a period of six years. The President for the current term, 1 March 2000 to 1 March 2006, is Ms Tarja Halonen.

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

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

Of the 18 ministerial posts in the present Government appointed in April 1999, 6 are held by the Social Democratic Party, 6 by the National Coalition Party, 2 by the Left Wing Alliance, 1 by the Swedish People's

Party, 2 by the Green League and 1 by an expert with no party affiliation. The Prime Minister is Mr Paavo Lipponen of the Social Democratic Party.

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

International relations

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

Citizens of the five Nordic countries, Denmark, Finland, Iceland, Norway and Sweden, have enjoyed a common labour market, a passport union and reciprocal social security benefits since the mid-1950s. All the Nordic countries joined the Shengen area on 25 March 2001.

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

The economy

Output and employment. Of the gross domestic product of EUR 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 2001, 5.7% were engaged in primary production, 27.1% in industry and construction and 67.2% in services.

In 2000 expenditure on the gross domestic product in purchasers' values amounted to 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 goods exports. In 1997-2001 their average share was 55.3%. Over the same period, Finnish exports to other European countries (including Russia) accounted for 18.7% and to the rest of the world for 26.0%. During the same period the regional distribution of Finnish goods imports was quite similar to that of exports: EU countries accounted for 57.4%, other European countries for 18.4% and the rest of the world for 24.2%.

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

Forest resources. Finland has abundant forest resources but only limited amounts of other raw materials. The growing stock comprises 1,927 million cubic metres, of which 46% is pine, 36% spruce, 15% birch and 3% other broad-leaved species.

According to the National Forest Inventory for 1992-1998, the annual volume increment was about 76 million cubic metres. Over the same period the average annual drain was about 59 million cubic metres.

Finance and banking

Currency. Finland had its own monetary system from 1865 to 1998. The currency unit was the markka (plural markkaa), which was divided into 100 penniä (singular penni). During the last decades of this period the objective of foreign exchange policy was to maintain a fixed exchange rate in relation to a given currency basket. On 8 September 1992 the markka was allowed to float. On 14 October 1996 the markka joined the Exchange Rate Mechanism of the European Monetary System. Since the start of 1999 Finland has participated in the single currency area, in accordance with the Treaty establishing the European Community. The conversion rate for the markka, as confirmed by the Council of the European Union on 31 December 1998, is 5.94573. With effect from the start of 1999, the currency unit used in Finland is the euro, which is divided into 100 cent. The changeover to euro cash was effected in Finland, as in the whole euro area, at the start of 2002, and the markka ceased to be legal tender as of 1 March 2002.

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

Other banks (31 December 2001). Finland has three major groups of deposit banks with a total of about 1,579 branches. In addition there are five smaller banks and banking groups. The commercial banks have a total of 19 foreign branches, subsidiaries and associate banks and 10 representative offices abroad. There are 40 savings banks, a group of cooperative banks (244) and 42 local cooperative banks. In addition, 7 foreign banks have branches and 5 foreign banks have representative offices in Finland.

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

In the money market, the total value of instruments outstanding was about EUR 22.2 billion at end-June 2002; bank certificates of deposit accounted for 57% of the total and Treasury bills, commercial paper and local authority paper for the rest.

At end-June 2002 there were 107 companies on the main list, 29 on the investors' list and 17 on the NM list of the HEX. At end-June 2002 total market capitalisation was EUR 149.5 billion for the main list, EUR 0.48 billion for the investors' list and EUR 0.40 billion for the NM list. Domestic bonds and debentures in circulation at end-June 2002 amounted to EUR 50.6 billion; government bonds accounted for 80% of the total. Share turnover on the HEX amounted to EUR 100.4 billion at end-June 2002.



VISITING SCHOLARS PROGRAMME

BANK OF FINLAND

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

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

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

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

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

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

Persons interested in applying are invited to send

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

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Balance sheet of the Bank of Finland, EUR million

	30.6.	26.7.	2002	
			30.8.	27.9.
Assets				
1 Gold and gold receivables	505	505	505	505
2 Claims on non-euro area residents denominated in foreign currency	8,569	8,469	8,714	8,914
2.1 Receivables from the IMF	799	794	863	846
2.2 Balances with banks and security investments, external loans and other external assets	7,770	7,675	7,852	8,069
3 Claims on euro area residents denominated in foreign currency	739	810	698	688
4 Claims on non-euro area residents denominated in euro	0	0	0	0
4.1 Balances with banks, security investments and loans	0	0	0	0
4.2 Claims arising from the credit facility under the ERM II	–	–	–	–
5 Lending to euro area credit institutions related to monetary policy operations denominated in euro	2,548	1,376	2,332	2,783
5.1 Main refinancing operations	1,832	1,157	1,620	2,071
5.2 Longer-term refinancing operations	715	219	711	711
5.3 Fine-tuning reverse operations	–	–	–	–
5.4 Structural reverse operations	–	–	–	–
5.5 Marginal lending facility	–	–	–	–
5.6 Credits related to margin calls	–	–	–	–
6 Other claims on euro area credit institutions denominated in euro	2	2	1	1
7 Securities of euro area residents denominated in euro	–	–	–	–
8 General government debt denominated in euro	0	0	0	0
9 Intra-Eurosystem claims	3,082	3,082	3,255	3,255
9.1 Share in ECB capital	70	70	70	70
9.2 Claims equivalent to the transfer of foreign currency reserves	699	699	699	699
9.3 Claims related to the issuance of ECB debt certificates	–	–	–	–
9.4 Claims related to TARGET and correspondent accounts (net)	–	–	–	–
9.5 Claims related to other operational requirements within the Eurosystem	2,314	2,314	2,487	2,487
10 Other assets	887	864	864	866
Total assets	16,331	15,108	16,369	17,013

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

		2002			
		30.6.	26.7.	30.8.	27.9.
Liabilities					
1	Banknotes in circulation¹	4,832	4,884	5,055	5,088
2	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	4,973	2,127	2,993	2,292
2.1	Current accounts (covering the minimum reserve system)	4,973	2,127	2,993	2,292
2.2	Deposit facility	–	–	–	–
2.3	Fixed-term deposits	–	–	–	–
2.4	Fine-tuning reverse operations	–	–	–	–
2.5	Deposits related to margin calls	–	–	–	–
3	Other liabilities to euro area credit institutions denominated in euro	–	–	–	–
4	Liabilities to other euro area residents denominated in euro	1	1	0	3
4.1	General government	–	–	–	–
4.2	Other liabilities	1	1	0	3
5	Liabilities to non-euro area residents denominated in euro	1	1	1	1
6	Liabilities to euro area residents denominated in foreign currency	–	24	56	73
7	Liabilities to non-euro area residents denominated in foreign currency	111	40	21	177
7.1	Deposits, balances and other liabilities	111	40	21	177
7.2	Liabilities arising from the credit facility under the ERM II	–	–	–	–
8	Counterpart of special drawing rights allocated by the IMF	190	190	190	190
9	Intra-Eurosystem liabilities	971	2,590	2,759	3,872
9.1	Liabilities related to promissory notes backing the issuance of ECB debt certificates	–	–	–	–
9.2	Liabilities related to TARGET and correspondent accounts (net)	971	2,590	2,759	3,872
9.3	Liabilities related to other operational requirements within the Eurosystem	–	–	–	–
10	Other liabilities	210	210	252	276
11	Revaluation account	597	597	597	597
12	Capital and reserves	4,444	4,444	4,444	4,444
Total liabilities		16,331	15,108	16,369	17,013

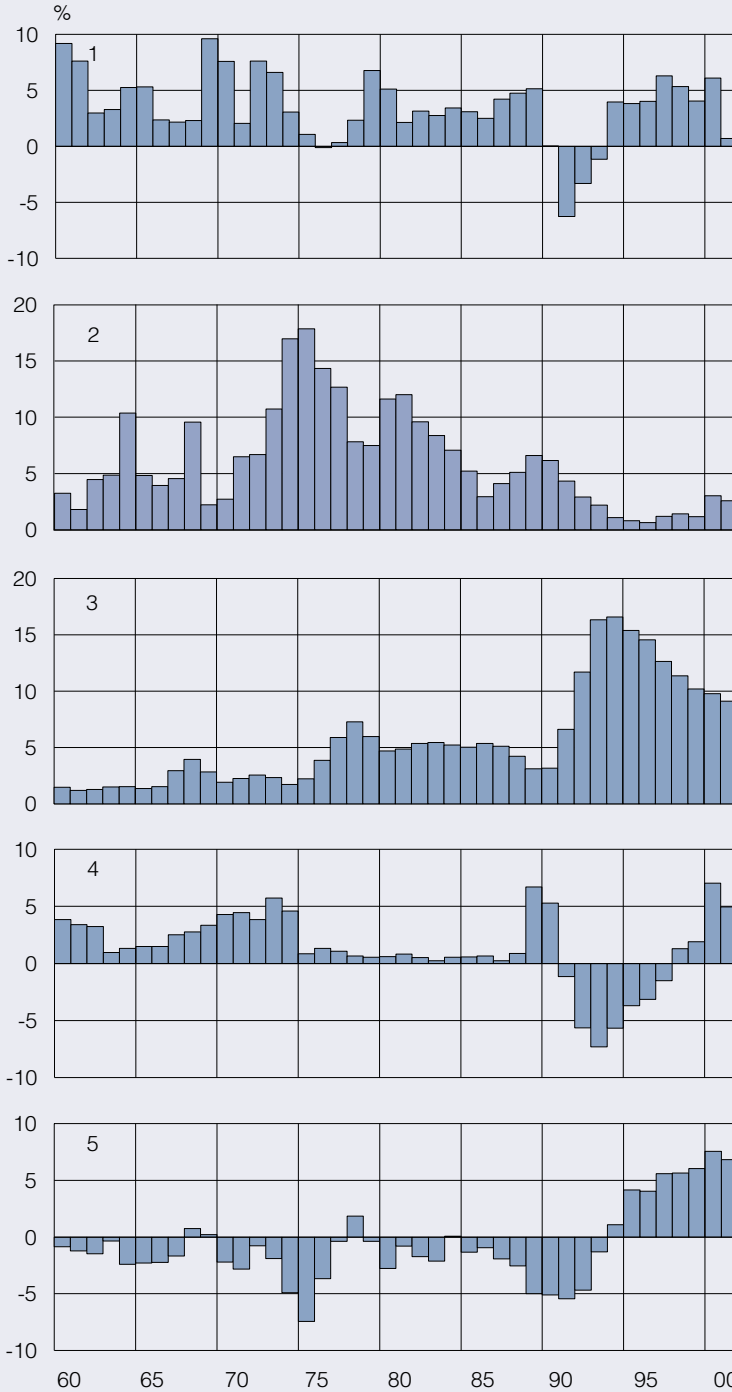
¹ According to the accounting regime chosen by the Eurosystem on the issue of euro banknotes, a share of 8% of the total value of the euro banknotes in circulation is allocated to the ECB on a monthly basis. The counterpart of this adjustment is disclosed under 'Other claims within the Eurosystem'. The remaining 92% of the value of the euro banknotes in circulation are allocated to the NCBs on a monthly

basis too, whereby each NCB shows in its balance sheet a share of the euro banknotes issued corresponding to its paid-up share in the ECB's capital. The difference between the value of the euro banknotes allocated to the NCB according to the aforementioned accounting regime, and the value of euro banknotes put into circulation, is also disclosed under 'Other claims/debts within the Eurosystem'.

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58. Selected asset prices in Finland

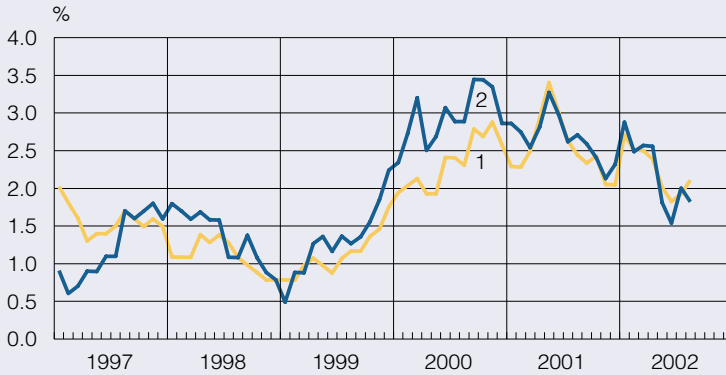
1. Finland: key economic indicators



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

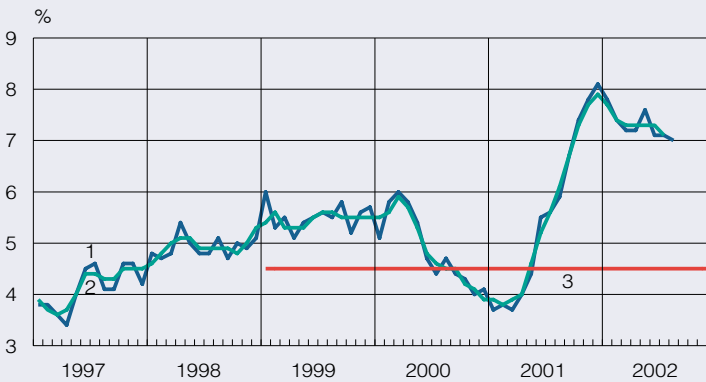


Harmonised index of consumer prices, 12-month change, %

1. Euro area
2. Finland

Sources: Eurostat and Statistics Finland.

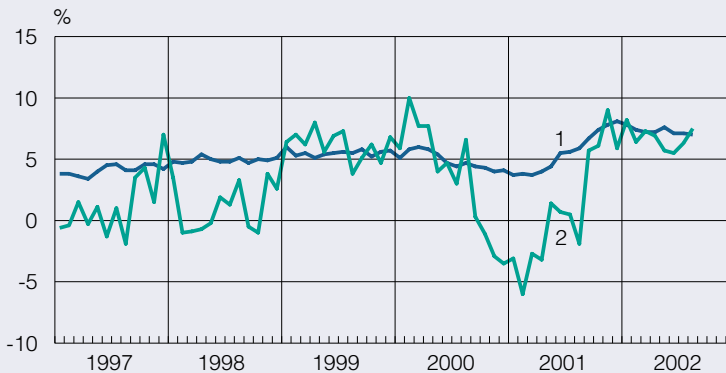
3. Monetary aggregates for the euro area



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

Source: European Central Bank.

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

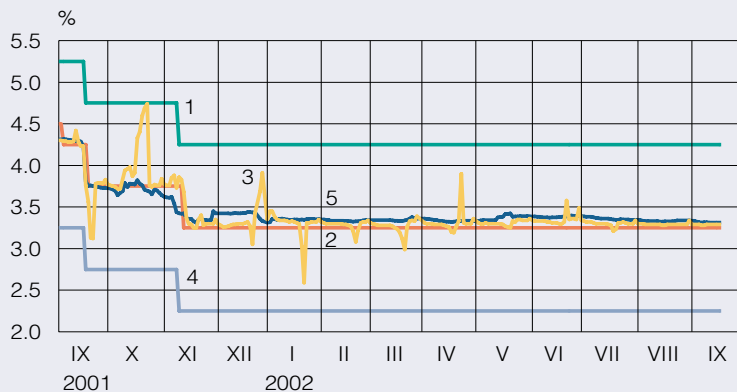


12-month percentage change

1. M3 for the euro area
2. Finnish Contribution to euro area M3

Sources: European Central Bank and Bank of Finland.

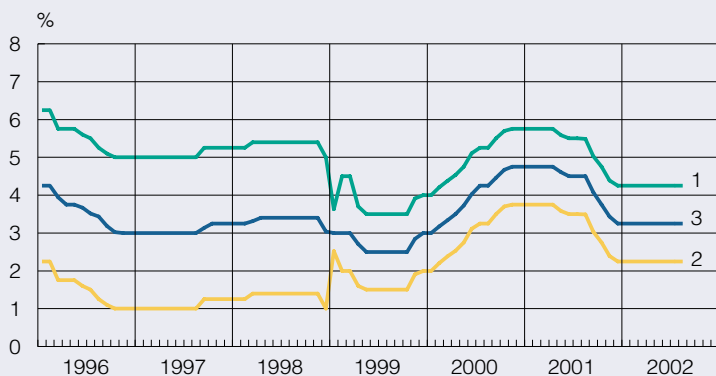
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1. Marginal lending rate
2. Main refinancing rate / minimum bid rate
3. Eonia rate
4. Deposit rate
5. 1-month Euribor

Sources:
European Central Bank and Reuters.

6. Eurosystem (Bank of Finland) interest rates

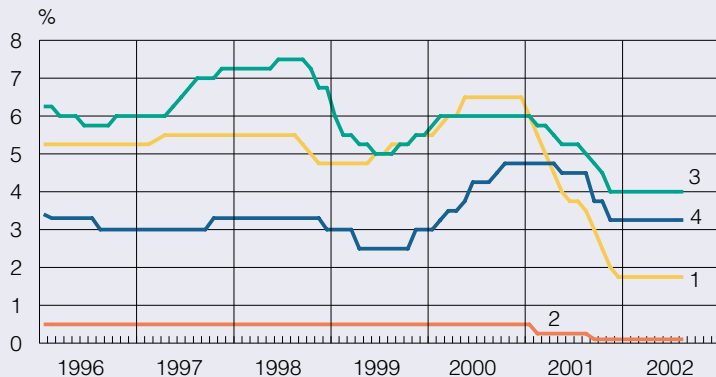


Bank of Finland interest rates until end-1998

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.

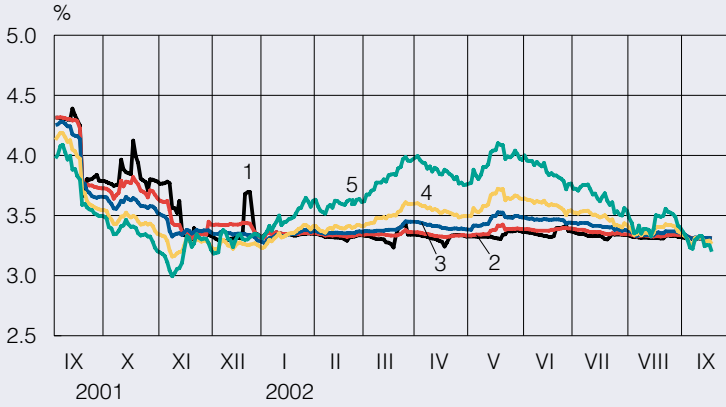
7. Official interest rates



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.

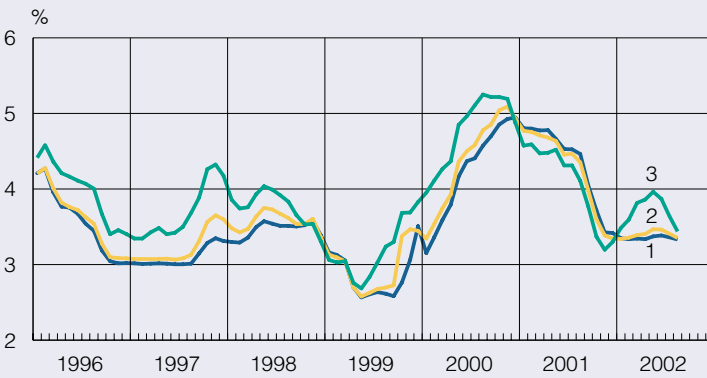
8. Euribor rates, daily values



- 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.

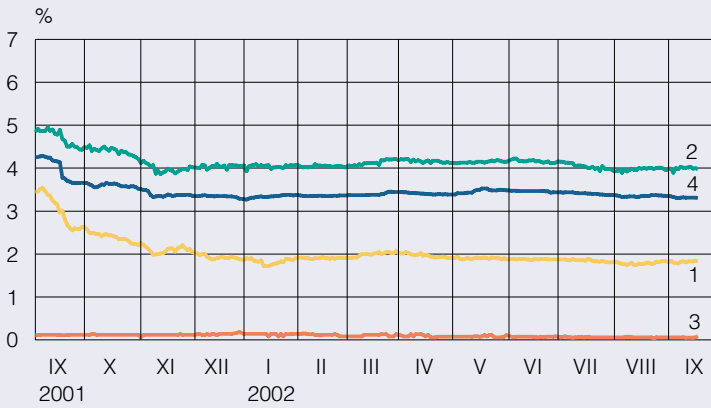
10. Differentials between ten-year yields for Germany and selected euro area countries



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

Source: Reuters.

11. International three-month interest rates, daily values

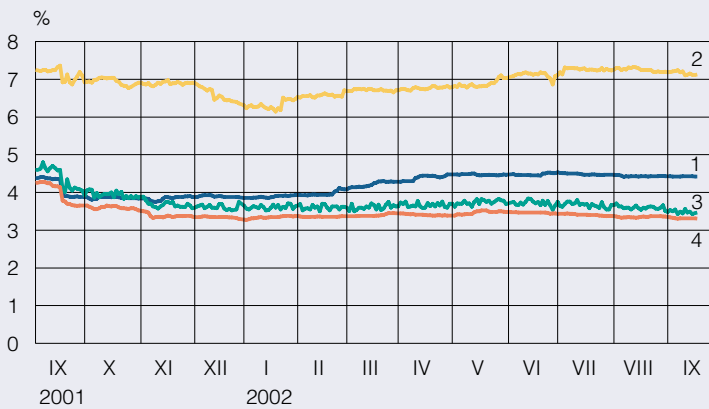


Interbank rates

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

Source: Reuters.

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

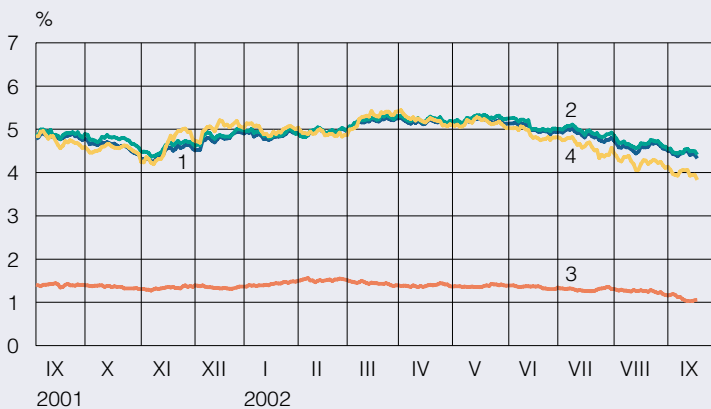


Interbank rates

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

Source: Reuters.

13. International long-term interest rates, daily values

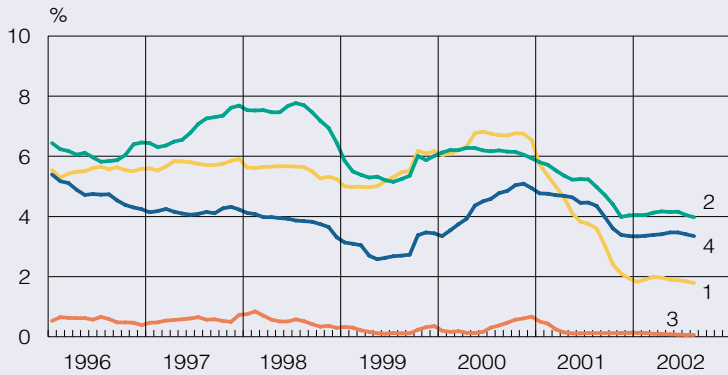


Yields on ten-year government bonds

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

Source: Reuters.

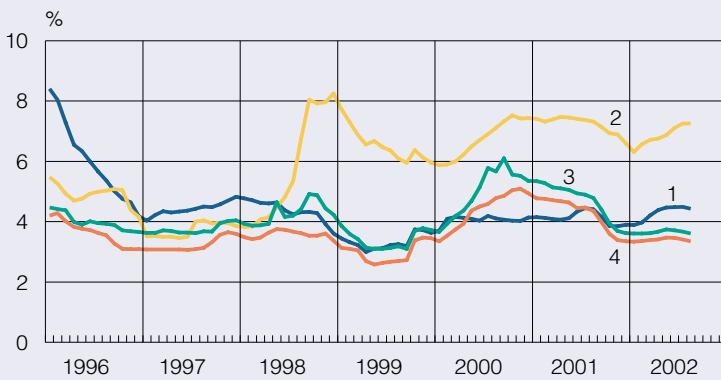
14. International three-month interest rates, monthly values



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

Source: Reuters.

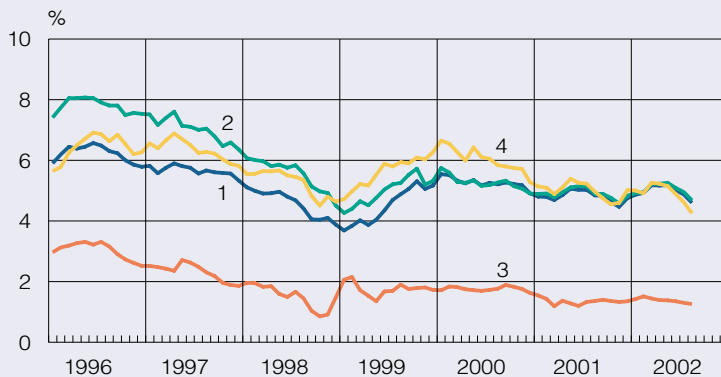
15. Three-month interest rates in the Nordic countries, monthly values



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

Source: Reuters.

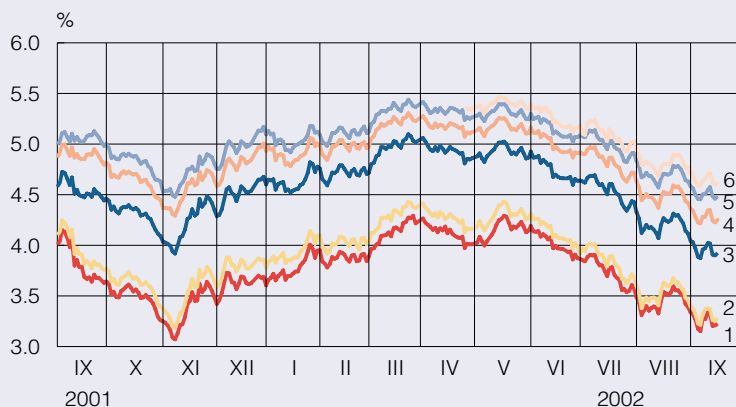
16. International long-term interest rates, monthly values



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

Source: Reuters.

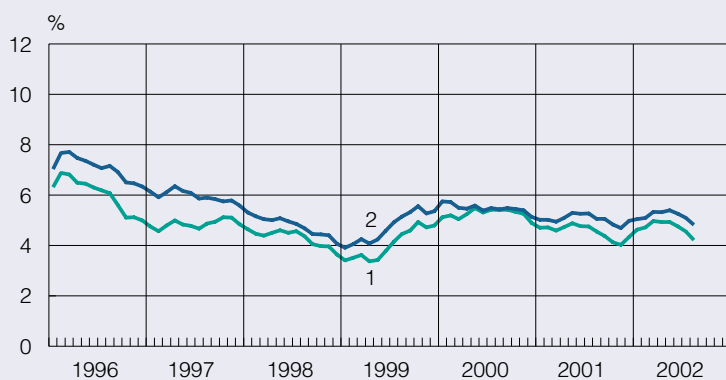
17. Yields on Finnish benchmark government bonds



1. Bond maturing on 12 November 2003, 3.75%
2. Bond maturing on 15 March 2004, 9.5%
3. Bond maturing on 4 July 2007, 5%
4. Bond maturing on 25 April 2009, 5%
5. Bond maturing on 23 February 2011, 5.75%
6. Bond maturing on 4 July 2013, 5.375%

Source: Reuters.

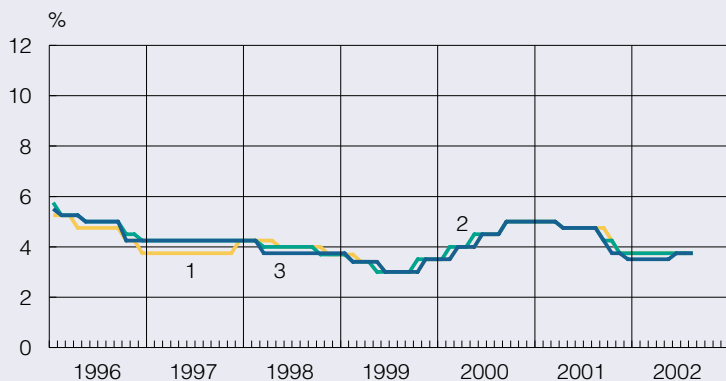
18. Yields on five and ten-year Finnish government bonds



1. 5 years
2. 10 years

Source: Reuters.

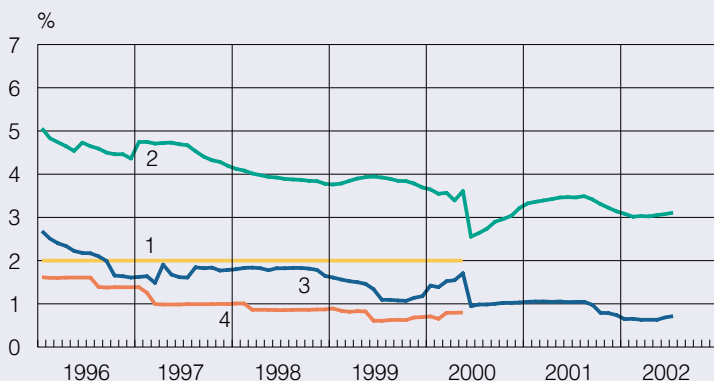
19. Bank reference rates in Finland



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

Source: Banks.

20. Bank deposit rates in Finland

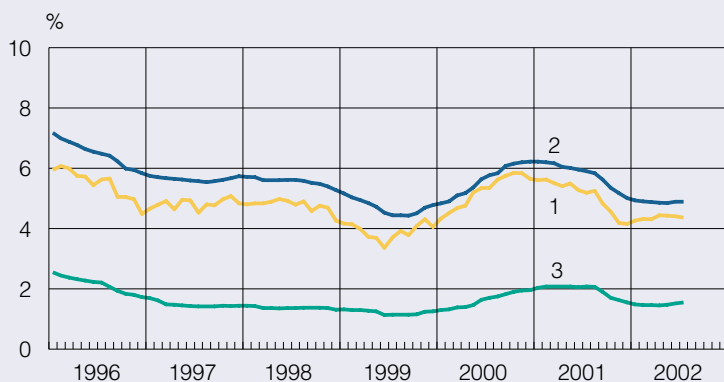


The tax treatment of deposits changed on 1 June 2000.

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

Source: Bank of Finland.

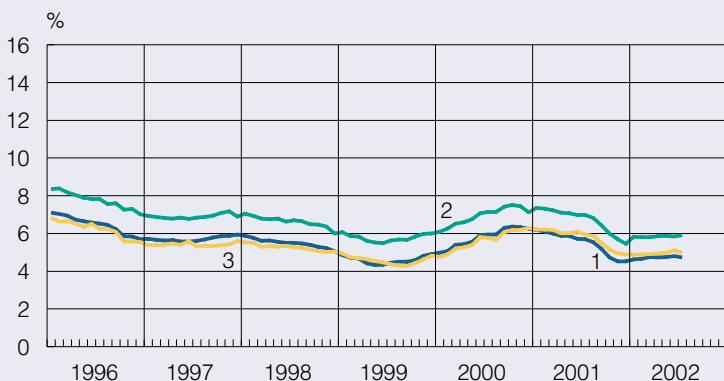
21. Bank lending and deposit rates in Finland



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

Source: Bank of Finland.

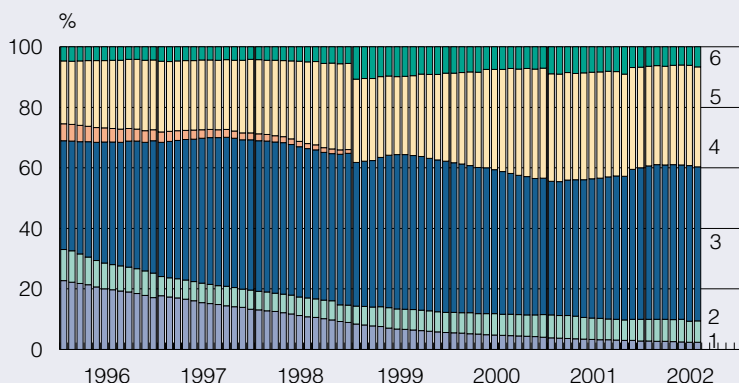
22. Interest rates charged by Finnish banks on new lending to households



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

Source: Bank of Finland.

23. Stock of bank lending in Finland

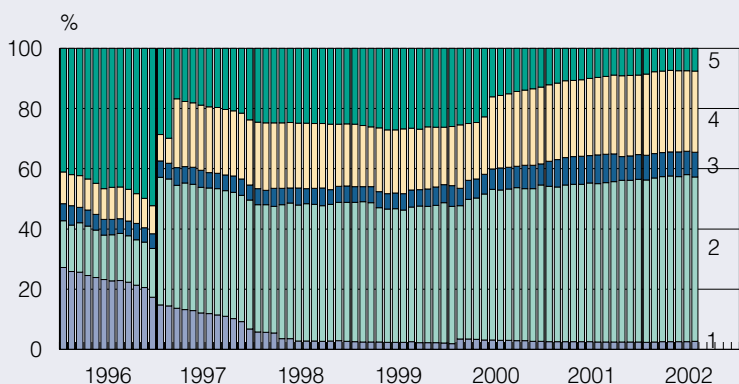


Interest rate linkages, percentages

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

Source: Bank of Finland.

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

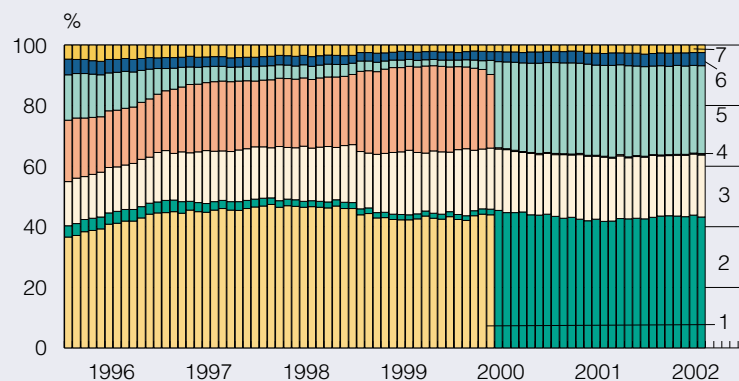


Interest rate linkages, percentages

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

Source: Bank of Finland.

25. Stock of bank deposits in Finland by tax treatment

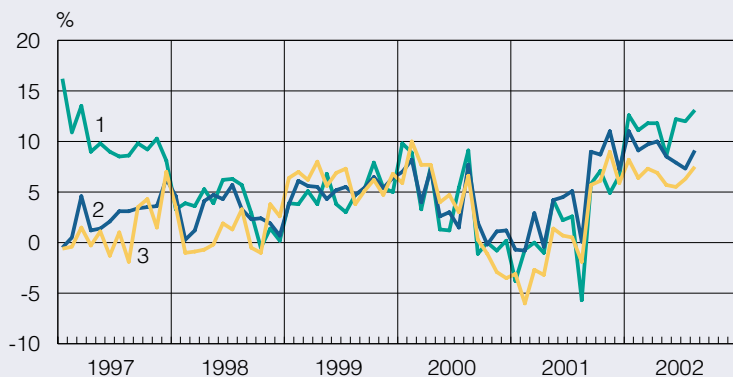


The tax treatment of deposits changed on 1 June 2000.

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

Source: Bank of Finland.

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

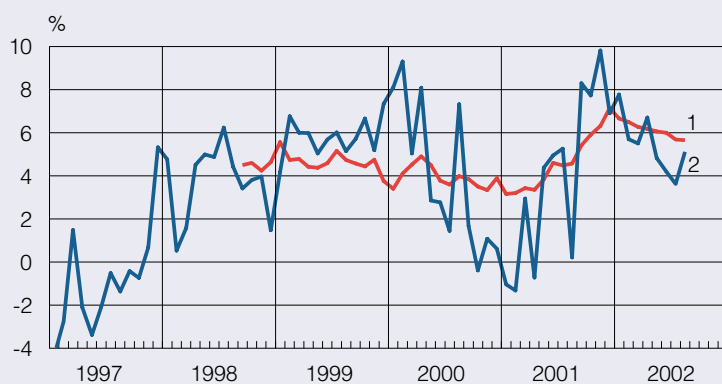


12-month percentage change

1. M1
2. M2
3. M3

Source: Bank of Finland.

27. MFI deposits, euro area and Finland

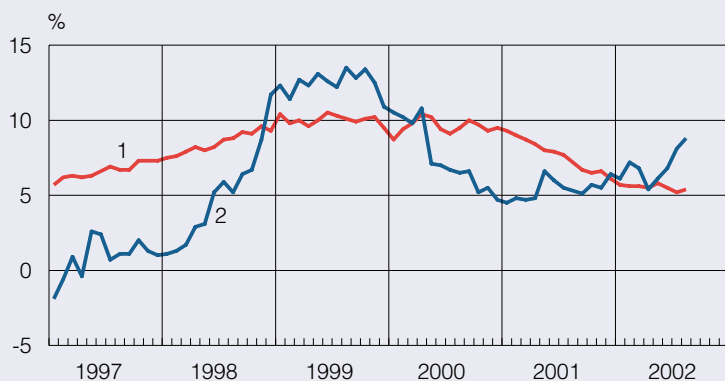


12-month percentage change

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

Sources:
European Central Bank and
Bank of Finland.

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



12-month percentage change

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

Sources:
European Central Bank and
Bank of Finland.

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

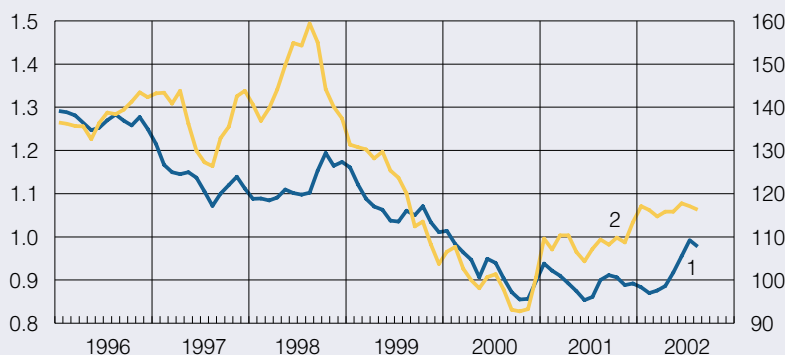


Rising curve indicates appreciation of euro

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

Sources: European Central Bank and Reuters.

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



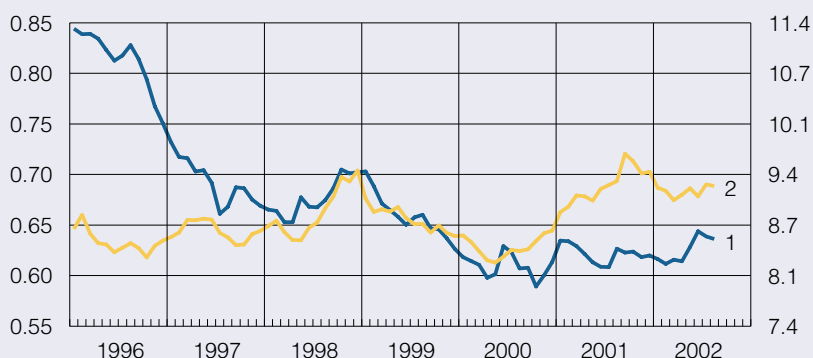
(ecu exchange rate until end-1998)

Rising curve indicates appreciation of euro

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

Sources: European Central Bank and Reuters.

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



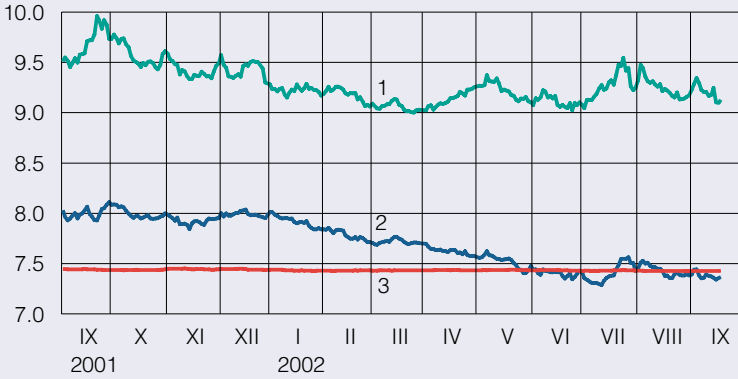
(ecu exchange rate until end-1998)

Rising curve indicates appreciation of euro

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

Sources: European Central Bank and Reuters.

32. Euro exchange rates against the Scandinavian currencies

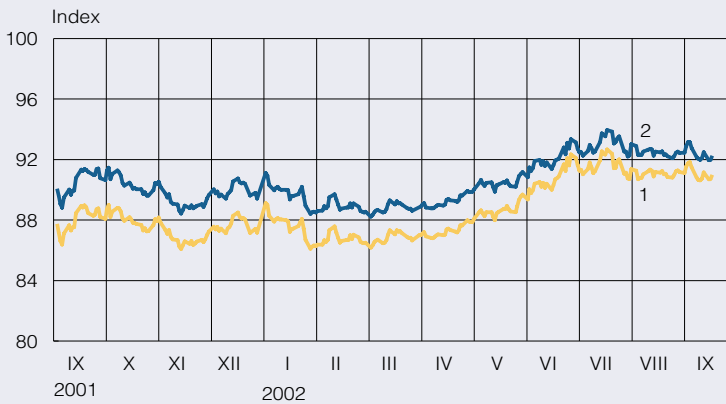


Rising curve indicates appreciation of euro

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

Sources: European Central Bank and Reuters.

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

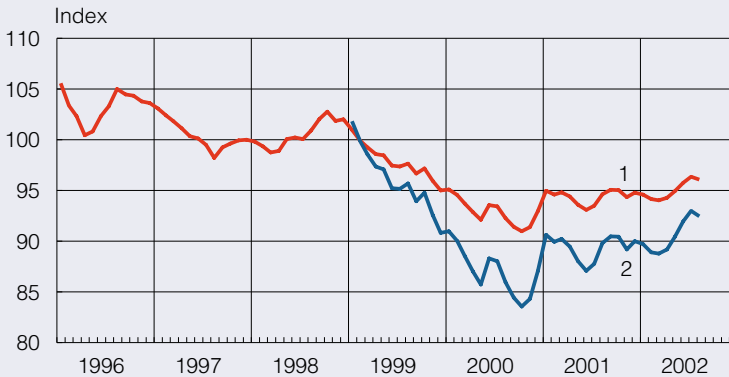


1999 Q1 = 100
An upward movement of the index represents an appreciation of the euro / a weakening in Finnish competitiveness

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

Sources: European Central Bank and Bank of Finland.

34. Competitiveness indicators for Finland

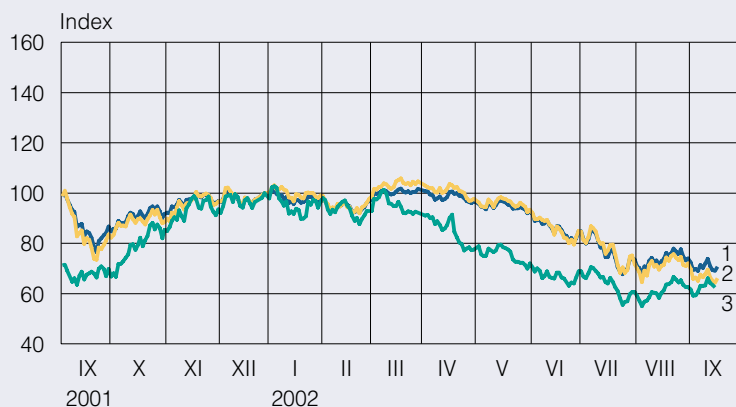


1999 Q1 = 100
An upward movement of the index represents a weakening in Finnish competitiveness

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

Source: Bank of Finland.

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

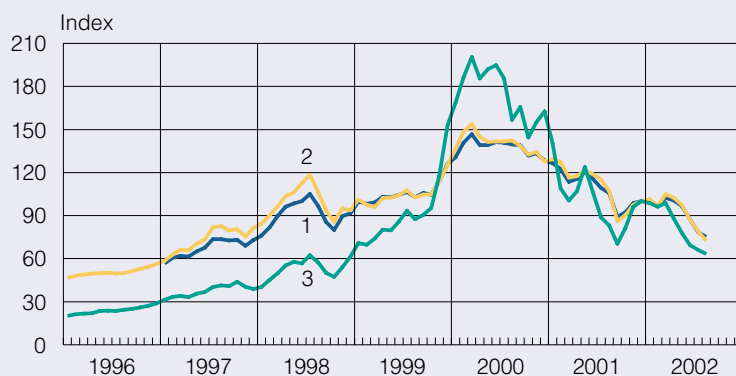


28 December 2001 = 100

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

Sources: Bloomberg and
HEX Helsinki Exchanges.

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

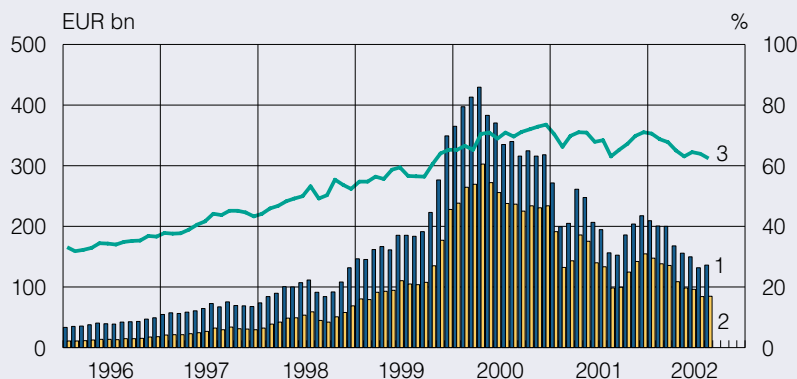


31 December 2001 = 100

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

Sources: Bloomberg and
HEX Helsinki Exchanges.

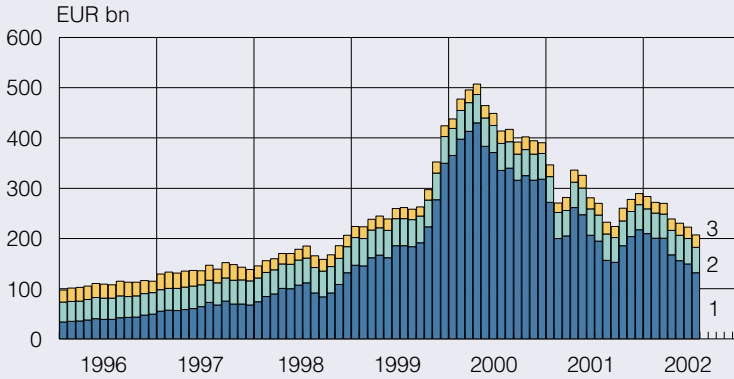
37. Listed shares in Finland: total market capitalisation and non-residents' holdings



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

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

38. Securities issued in Finland

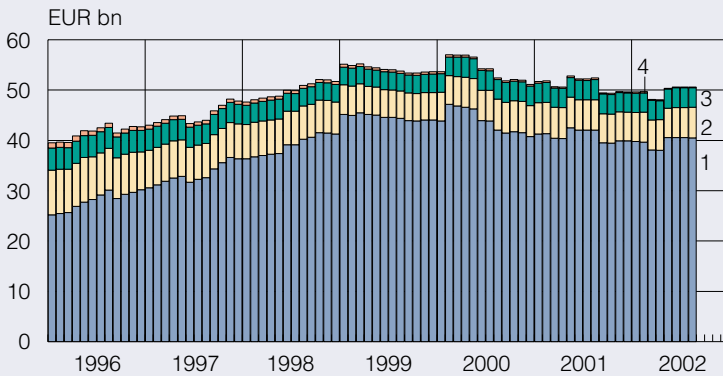


End-month stock

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

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

39. Bonds issued in Finland

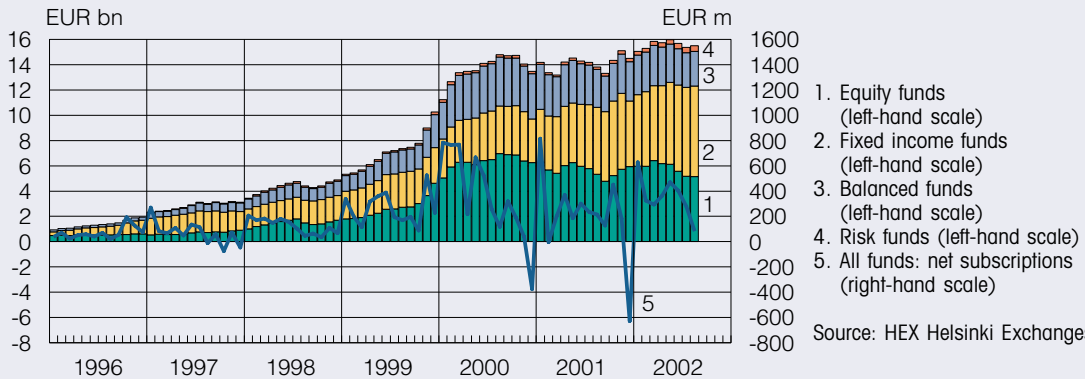


End-month stock

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

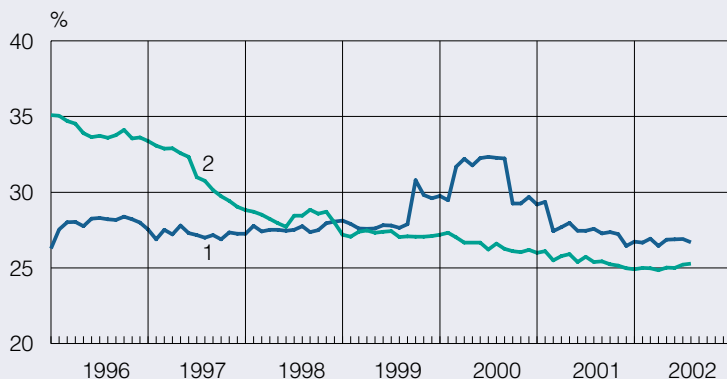
Source: Statistics Finland.

40. Mutual funds registered in Finland



Source: HEX Helsinki Exchanges.

41. Central government revenue and expenditure in Finland

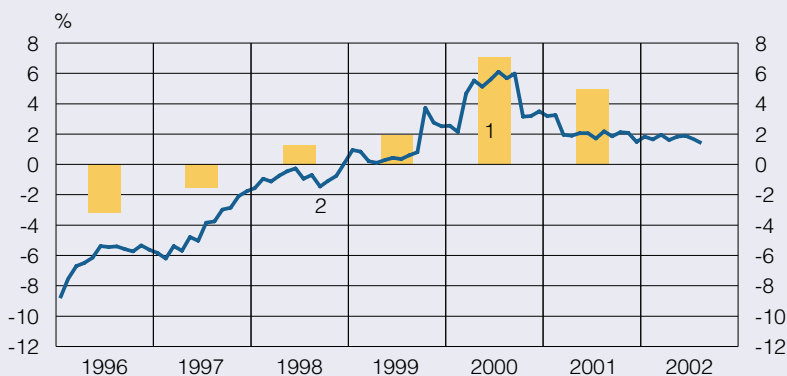


Excluding financial transactions
12-month moving totals, % of GDP

- 1. Revenue
- 2. Expenditure

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

42. Public sector balances in Finland

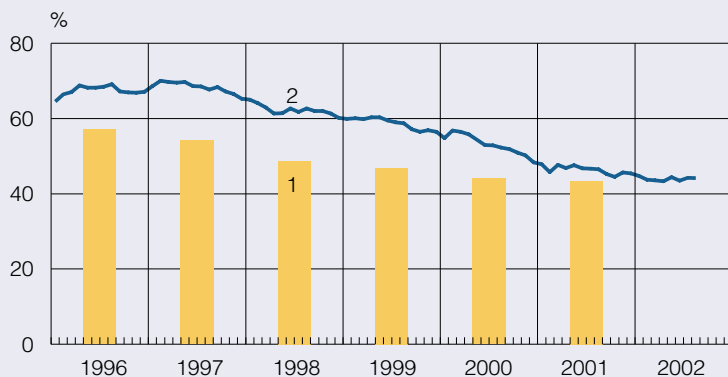


% of GDP

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

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

43. Public debt in Finland

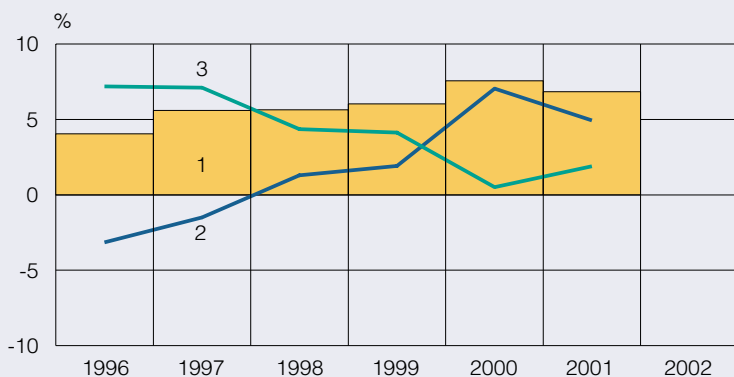


% of GDP

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

Sources: Statistics Finland and
State Treasury.

44. Net lending in Finland by sector

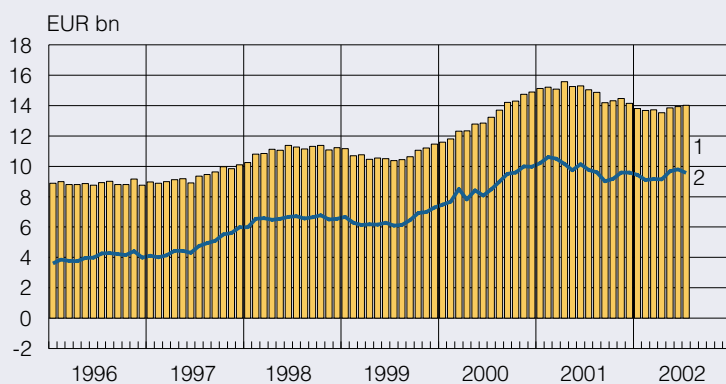


Main sectoral financial balances, % of GDP

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

Sources: Bank of Finland and Statistics Finland.

45. Finland: goods account and current account

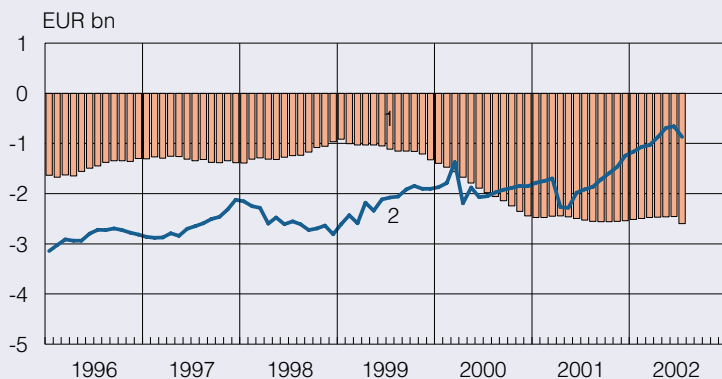


12-month moving totals

1. Goods account, fob
2. Current account

Source: Bank of Finland.

46. Finland: services account and income account

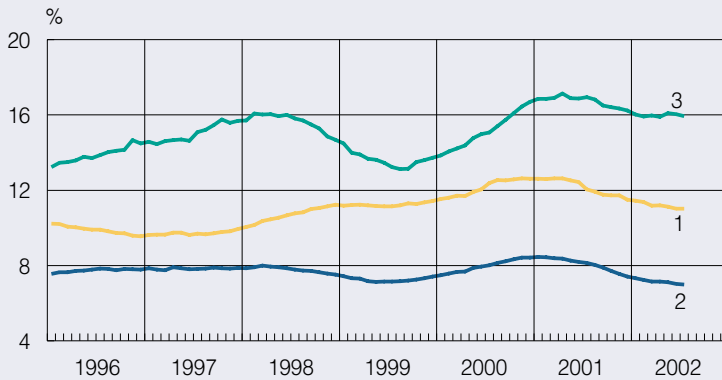


12-month moving totals

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

Source: Bank of Finland.

47. Regional distribution of Finnish exports

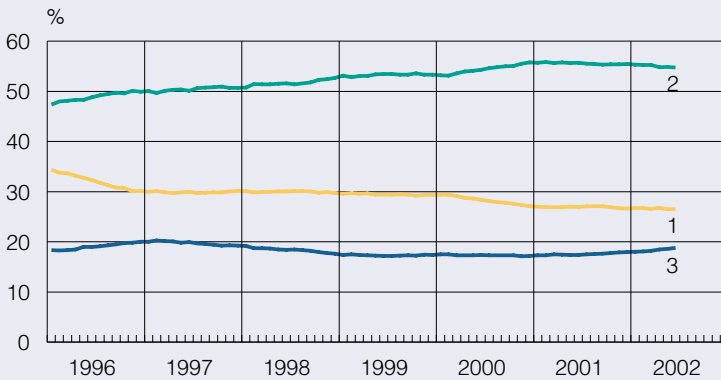


12-month moving totals,
% of GDP

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

Sources:
National Board of Customs
and Statistics Finland.

48. Finnish exports by industry

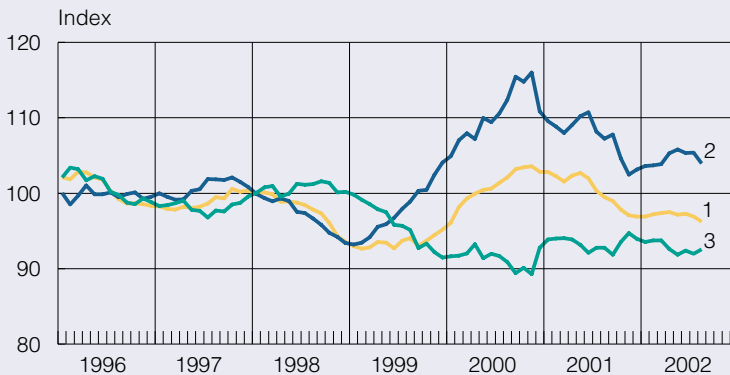


12-month moving totals,
percentage of total exports

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

Source:
National Board of Customs.

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

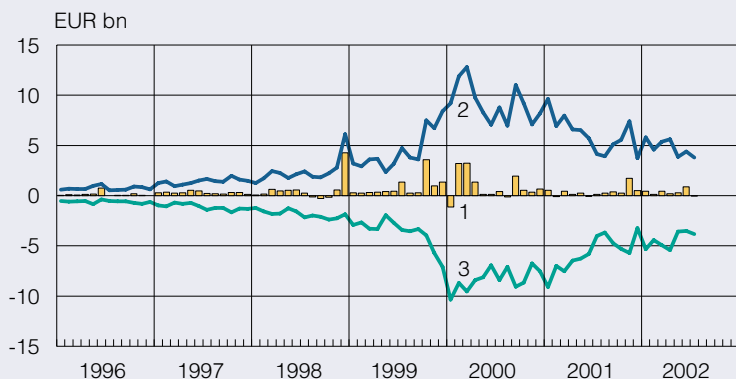


1995 = 100

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

Source: Statistics Finland.

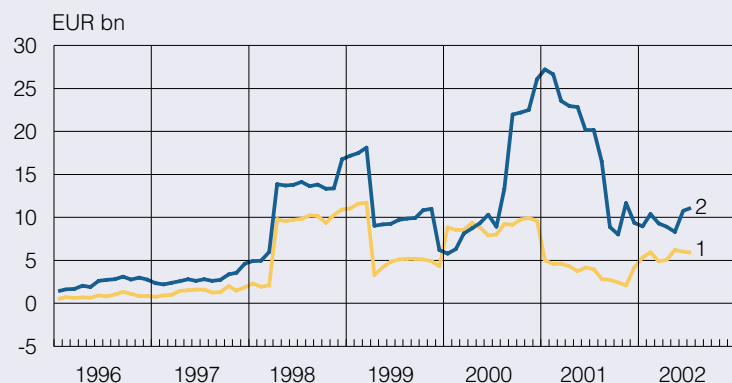
50. Non-residents' portfolio investment in Finnish shares



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

Source: Bank of Finland.

51. Finland: direct investment

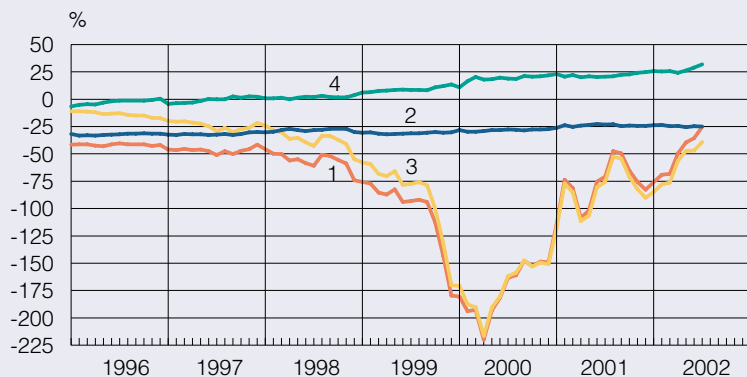


12-month moving totals

1. In Finland
2. Abroad

Source: Bank of Finland.

52. Finland's net international investment position

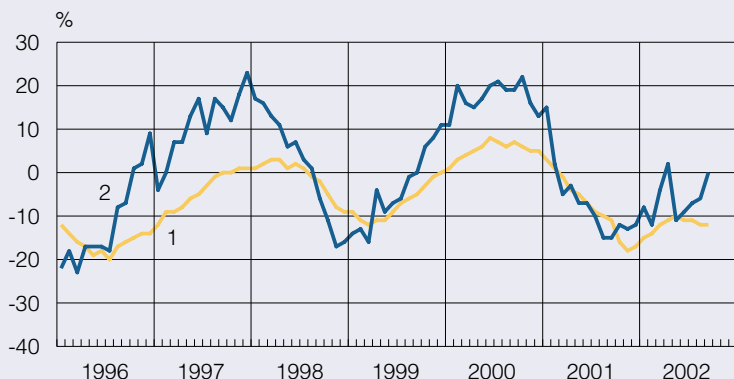


% of GDP

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

Sources: Bank of Finland and Statistics Finland.

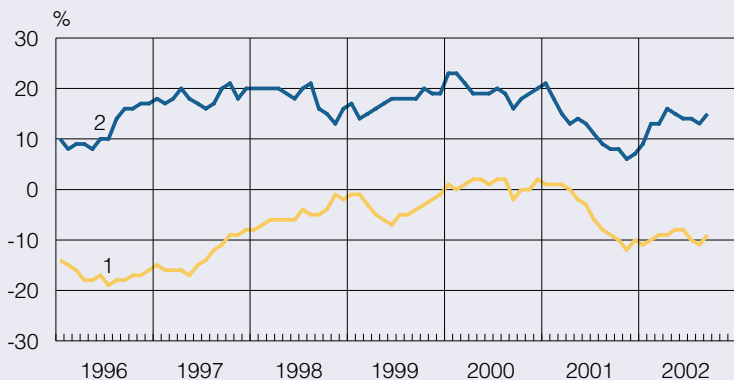
53. Industrial confidence indicator in the euro area and Finland



1. Euro area
2. Finland

Source: European Commission.

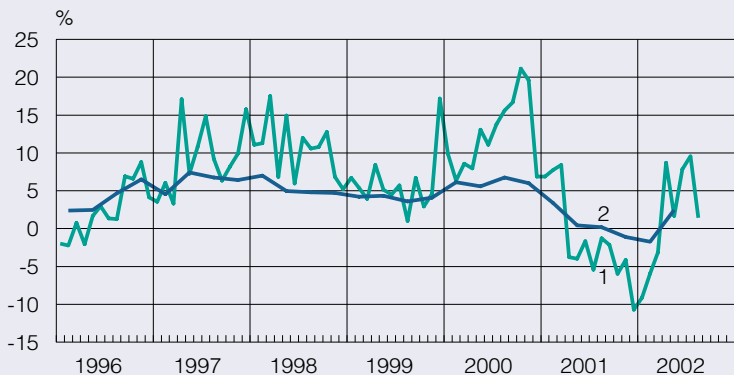
54. Consumer confidence indicator in the euro area and Finland



1. Euro area
2. Finland

Source: European Commission.

55. Finland: GDP and industrial production

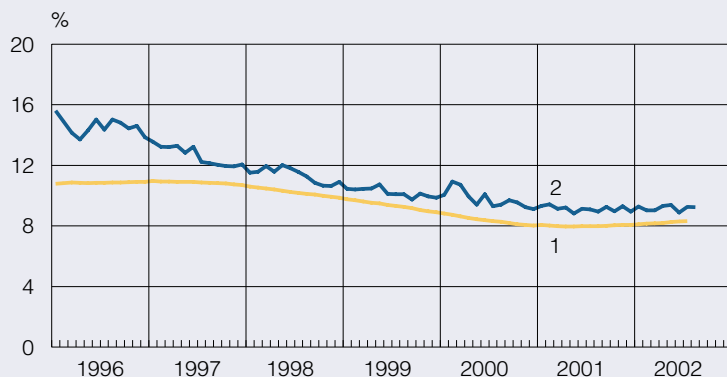


Percentage change from previous year

1. Industrial production
2. Gross domestic product

Source: Statistics Finland.

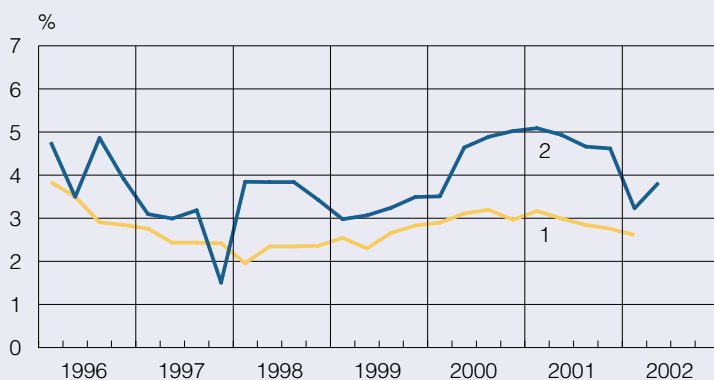
56. Unemployment rate in the euro area and Finland



- 1. Euro area
- 2. Finland

Sources: Eurostat, Statistics Finland and Bank of Finland.

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

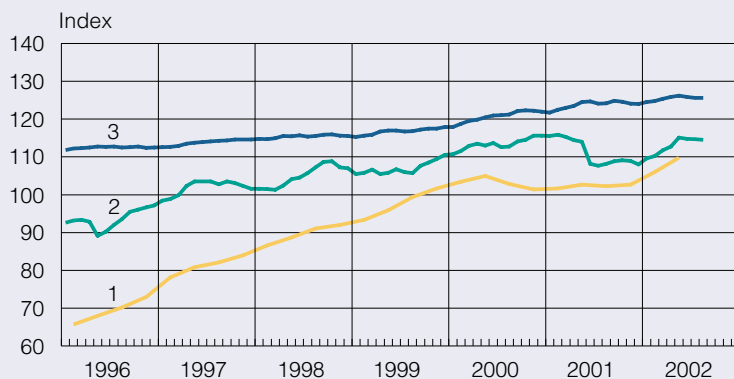


Percentage change from previous year

- 1. Euro area
- 2. Finland

Sources: Eurostat and Statistics Finland.

58. Selected asset prices in Finland



January 1990 = 100

- 1. Housing prices (secondary market; debt-free price per m²)
- 2. Stumpage prices
- 3. Consumer prices

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

Organisation of the Bank of Finland

10 September 2002

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Olavi Ala-Nissilä, Ben Zyskowitz, Antero Kekkonen, Anneli Jäähteenmäki,
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Pekka Sutela
Institute for
Economies in Transition

* Adviser to the Board

Branch offices: Kuopio, Oulu, Tampere and Turku.

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

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