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Economic outlook

SUOMEN PANKKI
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Edited
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Authors
Bank of Finland Economics Department

Subscriptions
Phone: National (09) 1831,
International +358 9 1831
Email: publications@bof.fi

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Bank of Finland
PO Box 160
FIN-00101 HELSINKI
Phone: National (09) 1831,
International +358 9 1831
Fax: +358 9 174 872
www.bof.fi

Preface

All things considered, Finland has emerged well from the extended international recession. Macroeconomic balance has been preserved and is under no immediate threat. There has been only a slight contraction in employment, while unemployment has remained almost unchanged. The financial position of households and businesses has remained fairly strong. Even the central government deficit appears likely to be smaller than was generally expected as recently as last summer.

The prospects for growth in domestic demand in the immediate years ahead appear bright. A stronger-than-forecast easing of inflation during the course of the present year due to reductions in indirect taxation and stiffer competition will boost growth in real incomes. Although Finland is undoubtedly losing some of its share of export markets, the world economic recovery is finally starting to be reflected in Finnish exports.

Annual GDP growth will accelerate to a full 2½% in the forecast period 2004–2006. This is a healthy figure in European comparison, but it will be insufficient to bring about any significant improvement in the employment situation. The unemployment rate will come down only marginally during the forecast period. Price rises this year will be negligible, but in the years ahead inflation will normalise at just under 2%.

Although the world economic recovery is now in full swing, there are numerous risks overshadowing future development. The current account deficit and expanding budget deficit in the United States threaten the development of the economy over the next few years. In a worst-case scenario, rising long-term interest rates and a renewed downward spiral in the value of the dollar could drive the world back into recession.

Viewed in the light of the figures for the economy as a whole, Finland's economic performance in the latter half of the 1990s was fairly positive. Closer inspection, however, reveals a vulnerability in the country's production structure. In many traditional sectors productivity development since the mid-1990s has been noticeably weak. This has merely been obscured by the rapid improvements in productivity in other sectors, and in information and communications technology in particular. Even so, profitability remained good while the euro was weak, the underlying problems only emerging with the onset of international recession and euro appreciation.

In recent years, Finnish growth has been almost entirely dependent on services and the public sector. The volume of industrial output has scarcely grown at all for the past three years. This includes information and communications technology. Moreover, Finnish export prices have been declining against those of the other industrial nations. As a consequence, the value of industrial output has developed even more poorly than volume output. The nominal value added of Finnish industry contracted almost 7% between 2000 and 2003, and the pace of contraction increased last year. In terms of the value of exports, Finland's export performance has been poor, not just absolutely, but also in comparison with other countries in the euro area. Besides Asia and the new

member states of the EU, Finland has also lost market share to other developed countries.

Although we now forecast a significant cyclical revival in Finnish exports, there is a risk that long-term export performance could remain poor. Finnish exports are still weighted towards semi-manufactured goods and other industrial products whose weak price trend is likely to continue into the future. This would in turn mean a continuing loss of jobs in industry. Certainly, many companies should manage to continue operations in Finland by improving productivity, but in a climate of falling export prices only part of this improvement will generate more income in Finland. In such circumstances, the so called productivity norm does not constitute an appropriate foundation for wages formation.

As Finland's relative advantage in manufacturing-based activities dwindles, it will be vital to be able to attract into the country high-value-added activities such as research and development, business services and head office activities. Finland's main competitors in these areas are not the low-wage economies, but other developed nations. Here, too, international competition is becoming steadily tougher amid ever-increasing business mobility and tax competition. The international trend in corporate taxation has already been downwards for the past ten years.

In response to international tax competition Finland is now reducing the rate of corporation tax. However, compared with the status quo at present, the proposed reform contains elements that will encourage a greater transfer of company ownership abroad. This will scarcely attract high-value-added activities into the country. The proposed reform can also be expected to weaken the capital structure of Finnish companies.

In Finnish debate, reductions in income tax are generally justified by appeal to cyclical factors. We do not consider this argument valid. There has been no recession in private consumption in Finland, far less a severe one. The increase in the lending stock and the state of the housing market also speak against the idea of a traditional countercyclical fiscal boost to the economy. On the other hand, there remain sound structural reasons for reducing taxes, and in reality this will eventually be unavoidable. From the perspectives of employment and competitiveness, the most effective approach would be to concentrate tax cuts on corporate taxation, marginal taxes on higher incomes and labour costs in low-productivity sectors.

24 March 2004

Matti Louekoski

Executive summary

The world economy took a cyclical change for the better during the course of 2003, with growth being driven by the United States and several countries in Asia. In some respects the turnaround has been even stronger than expected and has laid a firm foundation for growth in 2004. Global recovery should therefore continue. Compared with the recent past, the Bank of Finland expects growth to continue at a fairly brisk pace throughout the forecast period. However, although recent developments in Asia and the United States have been unusually favourable, there is no immediate prospect of a particularly strong period of cyclical growth. The uncertainty about growth continuing over the longer term has not disappeared, and major imbalances still remain unresolved, which will subdue the pace of recovery.

The forecast for 2004–2006 was finalised shortly before the terrorist attack in Spain.[1] The events there immediately produced an atmosphere of uncertainty. The impact is naturally not reflected in the contents of the present forecast, but this sort of event and the fear of a repeat naturally pose a new risk to growth in the euro area and the world economy as a whole.

All things considered, Finland has emerged well from the extended international recession. In all sectors of the economy, balance sheets have remained fairly strong, and the prospects for growth in domestic demand in the immediate years ahead appear bright. The Bank of Finland forecasts GDP growth over the next few years of 2.5–3% per annum. Growth will be supported by sustained, relatively strong household consumption, the gradual stimulus to the export sector from the improving world economy and a gradual recovery in investment.

Rising real incomes, low real interest rates and continued strong household confidence will all sustain consumption in 2004, even without the fading impact of extraordinary factors such as car sales. Private consumption is forecast to grow by a full 2.5% in 2004 and 2005, after which it will level off at fully 2%, as growth in real disposable incomes slows, the wealth effect from rising house prices recedes and interest rates rise slightly towards the end of the forecast period.

Finland's export performance over the next few years is likely to be rather lacklustre compared with the brisk pace of the international economy. There will be a loss of market share and export prices will stagnate. However, the 7% growth forecast for the export markets will also permit reasonably healthy growth of 5–6% in Finland's exports of goods and services.

Although the inflation outlook will remain subdued over the next few years, Finland is certainly not facing any sort of threat from deflation. The reduction of product taxes will cause a temporary deceleration in price inflation to 0.2% in 2004, from where it will normalise to around 2% in subsequent years. Towards the end of the forecast period rising import prices, unit labour costs and housing costs will all serve to increase the pace of price inflation. However, in-

[1] The figures in the forecast are based on the information available on 9 March 2004.

creasing competition is expected to continue to dampen price rises in the years ahead.

While price inflation in goods and services has eased, house prices have risen at an accelerating pace. This has been largely a consequence of low interest rates, which have sustained brisk demand in the housing market. Despite an increase in housing construction, the growth in supply has been insufficient to halt the rise in house prices. The strengthening economy and continuing low interest rates will keep house prices on a gently rising curve both this year and next. There is a clear risk of overheating in the housing market.

The outlook for general government finances is stable. The general government fiscal surplus will remain at around 2% of GDP, and the debt ratio will decline. Even so, reductions in income, alcohol and corporation tax will cause a decrease in general government revenue relative to GDP. The tax cuts will lower the overall tax ratio by approximately one percentage point altogether in 2004 and 2005. Central government finances will move slightly into deficit this year. The deficit will deepen next year, but thereafter begin to contract. Tight spending limits will restrict growth in central government expenditure. Local government finances will remain in deficit, which will limit growth in local government expenditure. Fiscal policy will support growth in aggregate demand in both 2004 and 2005, but thereafter the impact will be neutral.

This fairly positive overall picture is, however, overshadowed by a number of factors relating to the prospects for growth. The main problem in Finland's recent economic performance has been declining employment. The upturn in the world economy has not yet been reflected in exports and industrial output in the manner expected. Industrial employment has already been in decline for almost two years, and the overall employment rate for 2006 is forecast at under 68%. The unemployment rate, meanwhile, is falling only very slowly.

Apart from the impact of euro appreciation, Finnish industry has also been hampered by its production structure, which is not oriented towards the growth sectors of world trade. The recovery in industrial confidence has accordingly been more muted in Finland than elsewhere in the euro area. Thus, contrary to expectations, it would appear that Finland has been slow to benefit from the return to growth elsewhere in the world. The outlook for industry represents the continuation of a worrying structural trend that has already been visible in the Finnish economy for several years. The volume of industrial output has not in practice grown at all in the past three years. Moreover, the export prices of Finnish industry are continuing on a downward trend relative to the export prices of other industrialised nations, with the result that performance in terms of output value has been even weaker than volume performance.

The problems of Finnish industry as reflected in the forecast are on the one hand the sluggish pace of recovery in fixed investment, and on the other hand a small but steady decline in relative export prices throughout the fore-

cast period. Private non-residential investment will achieve growth of only around 4.5% in 2006.

The swelling of general government deficits and the size of the current account deficit in the United States mean that the international economy could develop less favourably than forecast. US households could respond to their higher levels of debt and the weakening state of the public finances by considerably increasing their level of savings. On the other hand, resolution of these problems could also be triggered by the financial markets. A rise in US long-term interest rates and continued depreciation of the dollar would have a negative effect on the entire world economy.

Another, very different sort of risk to the international economy concerns the low level of both nominal and real interest rates, the present abundance of global liquidity and the opening up of the Chinese economy, where there is an increased danger of overinvestment and, by extension, overheating. This could lead to a serious crisis due to the weakness of China's financial system. The repercussions could also be felt in many traditional sectors in the industrialised nations, as companies operating in China would begin to dump their excess output at low prices in other markets.

The tentativeness of the forecast for the world economy also leaves space for positive surprises. It is possible that we have overestimated the growth-impeding impact of indebtedness and other structural problems. In the United States, in particular, major improvements in productivity and cost savings have recently enabled companies to considerably strengthen their balance sheets. There could, therefore, be a positive surprise in the shape of a strong recovery in investment. It is also possible that we have overestimated the impact of indebtedness on household demand for consumption in the United States, and that the slowdown in US consumption growth will be less than forecast.

Price pressures will be fairly negligible in Finland during the forecast period, although oil prices could produce a surprise in either direction. Other commodity prices have also risen recently, and the vigorous rise in commodity prices traditionally associated with economic upswings cannot be ruled out. In contrast, there is a marked risk of a fall in the prices of industrial products. This is due to increasing competition, productivity growth and the transfer of production out of Finland to lower-cost economies.

Financial markets

Around a year ago, the improved outlook for world growth led to an upturn in share prices in the world's main economic regions. In contrast, long-term interest rates have not risen significantly since spring 2003. In the euro area and the United States inflation expectations have remained fairly subdued and monetary policy relaxed. Over the past two years the US dollar has weakened against the other major currencies. Its depreciation has been particularly strong against the euro.

In Finland, low interest rates have supported household consumption, housing investment and demand for bank loans. The stock of housing loans, in particular, has grown very rapidly, and the rise in house prices has continued.

Interest rates

Interest rates in the euro area have remained low. The European Central Bank's minimum bid rate for the ESCB's main refinancing operations has been 2% since June 2003. Money market rates have since fluctuated below 2½%. Since the turn of the present year they have been very close to 2%, a sign of the ebbing of expectations of an imminent tightening of monetary policy that had previously been widespread among market participants (Chart 1 and Box 1).

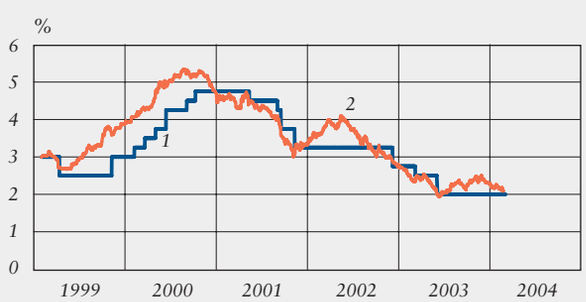
Interest rate expectations have changed because inflationary pressures in the euro area are expected to remain fairly weak over the next few years, dampened by factors such as the recent easing of the pace of increase in labour costs and the rise in the external value of the euro. The prices of interest rate futures indicate the markets do not expect any significant changes in the euro policy rate this year. Next year, however, the rate is expected to rise as the cyclical upswing in the euro area gathers pace on the back of the world economic recovery.

Short-term interest rates have also remained very low in the United States, where inflation has been subdued and employment weak. The markets do not expect the Federal Reserve to raise its key rate from the present 1% in the immediate months ahead. Short-term interest rates in Japan have remained around zero, and the Bank of Japan has indicated it will not abandon its zero interest policy until the present falling price trend gives way to a significant rise in prices.

The Bank of England has raised its key rate twice since November 2003; it currently stands at 4%. The rise in UK money market rates reflects expectations of a continued rise in the key rate irrespective of the monetary policies pur-

Chart 1.

Short-term interest rates in the euro area



1. Interest on main refinancing operations / minimum bid rate
2. 12-month Euribor
Sources: European Central Bank and Reuters.

Box 1.

Forecast assumptions

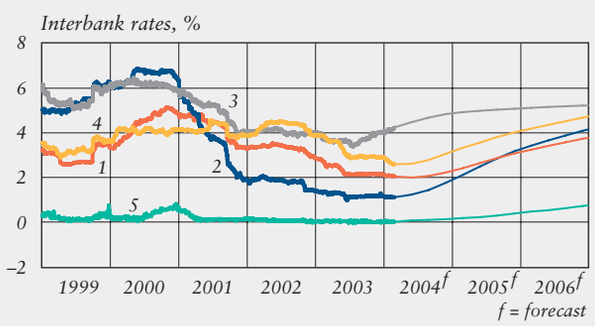
There has been a return to growth in several of the world's economic regions and the most recent indicators for the world economy are fairly positive. The recovery is expected to continue, although a variety of structural problems continue to trouble a number of regions. World growth is expected to exceed 4% in 2004, with the highest figures being recorded in Asia outside Japan. In the euro area there will be only a tentative recovery, with growth much brisker in the United States. After an initial spurt, the pace of world growth will stabilise at 4%. Import growth in Finland's export markets is expected to accelerate by a good 1½ percentage points to 6½% in 2004, and further to fully 7% in 2005–2006.

The dollar price of a barrel of oil is expected to come down over the next few months in line with the price of oil futures, and to settle at USD 28 by the beginning of 2005. The price of oil is expected to remain at this level until the end of the forecast period. The steep rise in the dollar price of other commodities in recent months is expected to slow and to remain moderate from the end of 2004. The euro-denominated export prices of Finland's trading partners declined in 2003 by 6% on average, and a further reduction of almost 2% is expected for 2004. They are, however, expected to begin to rise again as demand grows and the cost pressures from commodity prices are passed on to export prices. The pace of increase should reach 1½% in 2006. Against these background assumptions, the prices of Finnish imports are expected to fall further in 2004 by approximately ½%, and to rise thereafter by a full 1% in 2005–2006.

Interest rate and exchange rate expectations are derived

Chart A.

Short-term rates and interest rate expectations*



1. Euro area 2. United States 3. United Kingdom
4. Sweden 5. Japan
** 3-month market rates and interest rate expectations based on interest rate futures.*
Sources: Reuters, Bloomberg and Bank of Finland.

Chart B.

Exchange rate expectations

1. Value of the euro in US dollars (left-hand scale)
*2. Finland's nominal competitiveness indicator (right-hand scale)**
** Narrow indicator plus euro area, January – March 1999 = 100.*
Sources: European Central Bank and Bank of Finland.

Table A.

Forecast assumptions

	2002	2003	2004[f]	2005[f]	2006[f]
Import volume in Finnish export markets, % change	2.6	4.7	6.4	7.3	7.3
Finnish import prices, % change	–2.8	0.6	0.0	1.1	1.5
Oil price, USD per barrel	25.0	28.9	29.5	28.0	28.0
Import prices in Finnish export markets, % change	–2.2	–6.0	–2.1	1.1	1.3
3-month Euribor, %	3.3	2.3	2.2	3.0	3.6
Yield on taxable 4–5 year government bonds, %	4.4	3.3	3.4	3.9	4.4
Finland's nominal competitiveness indicator[1]	95.5	100.0	102.0	102.2	102.4
US dollar value of one euro	0.94	1.13	1.24	1.24	1.24

[1] Narrow plus euro area, 1999 Q1 = 100
f = forecast
Sources: Statistics Finland, Bloomberg and Bank of Finland.

from market expectations on 1 March 2004. As the underlying assumption is purely technical, it does not anticipate the interest rate policy of the ECB Governing Council nor entail an estimate of equilibrium exchange rates. Expectations are calculated from publicly quoted interest rate futures.[1] Market participants expect a cautious rise in short-term interest rates already this spring, to reach around 4% in the euro area by the end of 2006 (Chart A). The external value of the euro should remain around USD 1.24–1.25 throughout the forecast period. Finland's nominal competitiveness indicator is also expected to remain stable throughout the forecast period (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 1 March 2004 (for the methodology employed see Seppälä – Viertiö, The Term Structure of Interest Rates: Estimation and Interpretations, Bank of Finland Discussion Papers 19/1996).

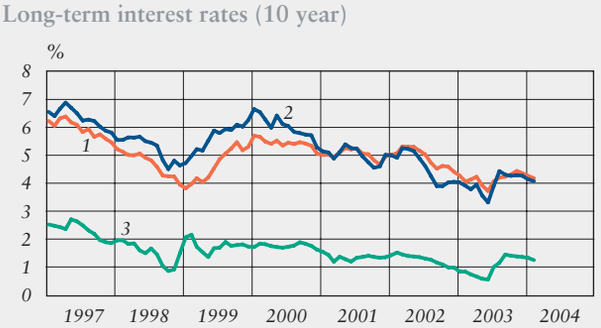
sued in other countries. These movements in interest rates are motivated by signs the economy is recovering. Meanwhile, another central bank committed to its own monetary policy inflation target, Sweden's Riksbanken, lowered its key rate to 2½% in February this year. Consumer price inflation in Sweden has eased in recent months and employment has remained weak. In Norway, interest rates have fallen exceptionally fast. Since December 2002, Norges Bank has reduced its key rate by a total of 5.25 percentage points in the face of rapid deceleration in the pace of inflation. In January of this year Norway's underlying inflation rate stood at 0.1%, against the central bank's target of 2.5%.

Ten-year government bond yields have in recent months mostly moved in the region of 4–4½% in both the euro area and the United States (Chart 2). In early summer 2003 there was a temporary dip in long-term interest rates in the face of uncertainty over world growth, and in the United States in particular there was fear of a slide from inflation into deflation. Prospects for the world economy weakened during the first half of 2003 with the uncertainties surrounding the war in Iraq, the high price of oil and the SARS epidemic in Asia. The outlook subsequently improved through the summer and autumn with confirmation the world economy was securely on the road to recovery.

Confirmation of the positive outlook for world growth has not significantly raised long-term interest rates in the euro area or the United States compared with the first half of last year. US government bond yields have remained relatively low despite continued growth in the federal budget deficit, even though the deficit has attracted increasing public comment. Long-term rates in the United States have also been held down partly by the currency interventions carried out by Asian central banks, which have been buying dollar-denominated securities. Through these interventions, the Asian central banks have accumulated large quantities of dollar-denominated bonds.

Chart 2.

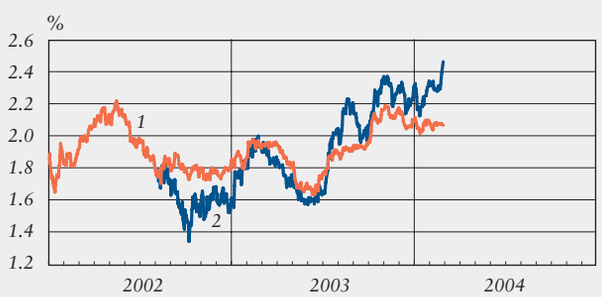
Long-term interest rates (10 year)



1. Euro area
2. United States
3. Japan
Sources: European Central Bank and Reuters.

Chart 3.

Inflation expectations*



1. Euro area
2. United States
** The expected pace of inflation is the difference between nominal interest rates and real interest rates. Real interest rates are calculated from bonds linked to the consumer price index. The bonds used mature in 2012.*
Source: Bloomberg.

Long-term inflation expectations on the financial markets in the euro area have risen moderately since early summer 2003 (Chart 3). This can be concluded from break-even inflation rates calculated from index-linked bond yields.[1] US inflation expectations have risen more sharply than those in the euro area, partly as a consequence of the dollar's depreciation against the euro and partly due to the more rapid improvement in economic prospects in the United States compared with the euro area.

In contrast to both the euro area and the United States, there has been a marked rise in British long-term interest rates from the level of a year ago, and the yield on 10-year government bonds is now almost 5%. Based on the evidence from index-linked bonds, UK inflation expectations for the immediate years ahead are higher than those for the euro area or the United States. In Sweden, the yields on long government bonds have remained around 4½% since the turn of the year.

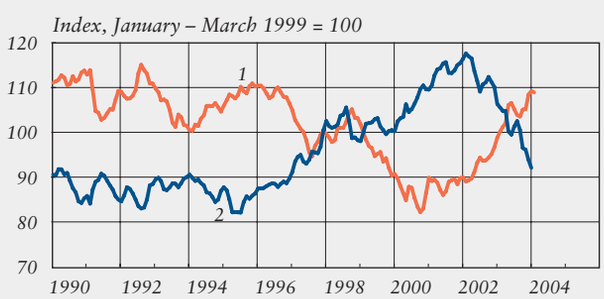
The interest rate spreads (credit spreads) between corporate bonds and government bonds narrowed considerably in both the euro area and the United States during the course of 2003. The credit risk premia on government bonds in the developing economies have also narrowed. The decrease in risk premia reflects the improved world economic outlook and corporate profits. The narrowing of credit spreads on corporate bonds has reduced the cost of finance especially in large companies that source their finance directly from the financial markets. On the other hand, banking surveys indicate a tightening in terms and access to corporate credit last year in both the United States and the euro area.[2] However, terms and access in the United States began to ease at the beginning of the present year. The tightening of credit terms would seem to have almost come to a halt in the euro area as well.

Exchange rates

The external value of the euro has appreciated considerably since 2000 – particularly against the US dollar. The euro is already higher against the dollar than

Chart 4.

Real effective exchange rates*



1. Euro area
2. United States
** Trade-weighted exchange rate index based on consumer prices. The curve rises as a currency appreciates.*
Sources: European Central Bank and International Monetary Fund.

[1] The break-even inflation rate is calculated by subtracting the real yield on index-linked bonds from the yield on standard fixed-income bonds. The difference provides a measure of inflation expectations provided the additional risk deriving from uncertainty over inflation and the liquidity premium derived from differences in market liquidities are both insignificant. For the United States the calculation uses market information on federal bond yields, and for the euro area, the yields on French government bonds.

[2] 'The results of the January 2004 bank lending survey for the euro area', ECB Monthly Bulletin 2/2004, p. 12–15; and Federal Reserve Board: Senior Loan Officer Opinion Survey on Bank Lending Practices, January 2004 (www.federalreserve.gov/boarddocs/SnLoanSurvey).

it was at its launch at the beginning of 1999. According to the nominal trade-weighted exchange rate index the external value of the euro is more or less the same as at the beginning of 1999. The same holds for the real exchange rate index (Chart 4). Measured against the latter, the international price competitiveness of euro area output has returned close to the average for the 1990s following a brief improvement in 1999–2000 due to the weakness of the euro at that time.

Despite the changes in the external value of the euro, the international price competitiveness of Finnish output has not fluctuated as much in recent years as it did in the decades before monetary union. Measured against the real exchange rate index based on foreign trade weightings, Finland's price competitiveness improved by a little less than 10% between the beginning of 1999 and October 2000, when the euro was at its weakest. Price competitiveness has since receded by more or less the same amount and is now close to the average for the second half of the 1990s.

The value of the US dollar against the other major currencies has been undermined over the past two years by concern over the growing US current account and federal budget deficits. The appreciation of the dollar in 1999–2001 was based on an optimistic view of long-term US growth. Capital flooded into the United States as investors in Europe and the rest of the world purchased large quantities of US equities. In the past two years this flow has dried up. The financing of the US current account deficit has become largely dependent on debt financing (sales of bonds to non-residents and bank-mediated finance). The recent depreciation of the dollar is perhaps, in turn, based on deteriorating expectations for long-term US growth.

During the course of last year the British pound simultaneously lost ground against the euro and gained against the dollar. In the early months of this year, however, the pound has risen against both the euro and the dollar. The recent appreciation of the pound is probably due at least in part to the rise in short-term UK interest rates, which has attracted investment in sterling-denominated instruments. The value of the Swedish krone against the euro has been fairly stable in recent years. In contrast, the Norwegian krone has since the beginning of 2003 depreciated almost 20% against the euro, as the strong reduction in Norwegian interest rates has undermined the position of the krone as a high-yielding investment.

The depreciation of the dollar over the past two years has been particularly in relation to the euro. Measured by the United States' trade-weighted exchange rate index, the fall in the external value of the dollar has been less. Especially in Asia, many countries have sought to prevent the depreciation of the dollar against their own currency through massive purchases of dollars on the exchange markets.

The foreign exchange interventions in support of the dollar carried out by several Asian countries have been exceptionally large, leading to rapid growth in the foreign reserves held by these countries' central banks. In particular, the Bank of Japan made unprecedentedly large interventions to weaken the yen in

the first two months of this year. The foreign reserves held by the Bank of Japan and other Asian central banks now account for approximately two thirds of the total foreign reserves held by the world's central banks. Thus, the Asian central banks now play a very important role in financing the US current account deficit.

The Bank of Japan's massive interventions in the exchange markets have succeeded in moderating the yen's appreciation against the dollar. Since January 2003 the Japanese currency has risen around 10% against the dollar, or just over half the level of euro appreciation against the dollar over the same period. Measured by the trade-weighted real exchange rate index, the yen has weakened slightly over the past two years and is now around 10% below its average for the 1990s.

Stock markets

Share prices have risen in all the major economic regions during the past year. The upward movement began in the early months of 2003 after approximately three years of decline (Chart 5). The US S&P 500 index has gained around 45% on its lowest level of a year ago. The euro area's DJ Euro Stoxx broad index has similarly gained around 55%, the Japanese Nikkei 225 around 45% and the UK FTSE 100 around 35%. However, all these indices are still 25–50% below the peaks achieved at the beginning of 2000.

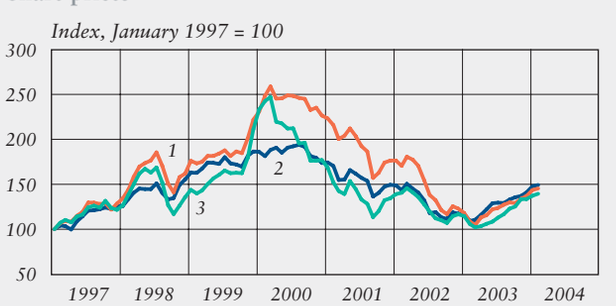
The worldwide rise in stock prices has been fuelled by the improving prospects for world growth, the dispersal of uncertainties around the war in Iraq and renewed growth in corporate profits. An additional factor has been low interest rates. US corporate profits already began to grow in 2002 and continued upwards through last year. According to National Accounts figures, nominal growth in corporate profits in the third quarter of 2003 was 25% up on the previous year, representing a notable increase in their share of national income.

Despite the growth in corporate profits, the gains made by the major share indices have meant their P/E ratios have remained relatively high historically, when they are calculated from the accumulated earnings figures for the previous 12 months.

The euro's appreciation against the dollar has undermined euro area exporters' competitiveness vis-à-vis American companies. This would suggest the share prices of euro area firms would have risen less than their US competitors', with share prices measured in the same currency. This has not, however, been the case. An examination of the relationship, expressed in the same currency,

Chart 5.

Share prices



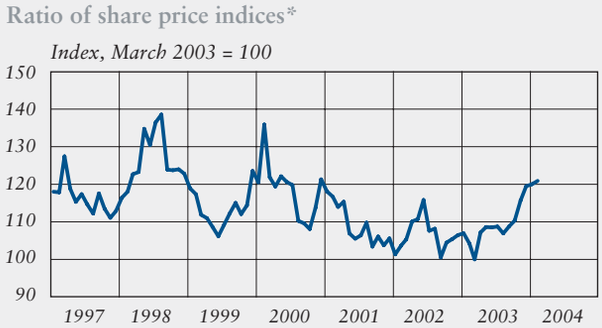
1. Euro area: DJ Euro Stoxx broad index
2. United States: S&P 500 index
3. Finland: HEX portfolio index
Source: Bloomberg.

between share indices in the euro area and the United States reveals that European companies' share prices declined relative to American companies' in 2000 and 2001 (Chart 6). However, this pattern has not recurred during the past couple of years as the euro has appreciated. Thus, share prices do not suggest the expected longer-term profitability of companies listed in the euro area has been weakened by the appreciation of the euro.

The equity and bond markets provide an opportunity to gauge market expectations for long-term growth and inflation. Such a procedure is presented in one of the appendices attached below.[3] According to this, the long-term prospects for US growth have moderated slightly since 2000 (see appendix charts 1–4, p. 64–65). Throughout the period of monetary union, growth expectations in the euro area have been weaker than in the United States. In the light of the information from the financial markets, inflation expectations are very low in both areas.

Chart 6.

Ratio of share price indices*



** The DJ Euro Stoxx broad index divided by the S&P 500 index when the indices are expressed in the same currency.*
Source: Bloomberg.

Helsinki Exchanges' HEX all-share index has risen approximately 50% from the low of early 2003. Over the same period the HEX portfolio index has risen around 45%, which means Nokia shares have gained a little more than average. Nokia's weight in the portfolio index is restricted to 10%, while it is around 50% in the all-share index. As in the world's major bourses, in Helsinki, too, the rise in prices has been stimulated by the improved economic outlook and corporate earning capacity. Of particular importance has been the increase in Nokia's earnings. The combined earnings of other listed companies remain fairly strong, although last year brought no improvement. According to National Accounts figures, the nominal growth in the operational surplus of the corporate sector last year was only just over 1%.

Housing prices

The rapid rise in Finnish housing prices has continued (Charts 7 and 8). The increase in 2003 was 6.4% on the previous year. The rise has been sustained by vigorous demand fuelled by reduced rates of interest on housing loans, longer loan periods, growing household incomes and householders' continued confidence in their own finances.

The steep rise in housing prices in recent years has been assisted by the demand-led nature of the housing market over the short term. Partly due to the sluggish pace of planning and housing construction, the supply of housing has only gradually begun to meet the steep

[3] See pages 63–67.

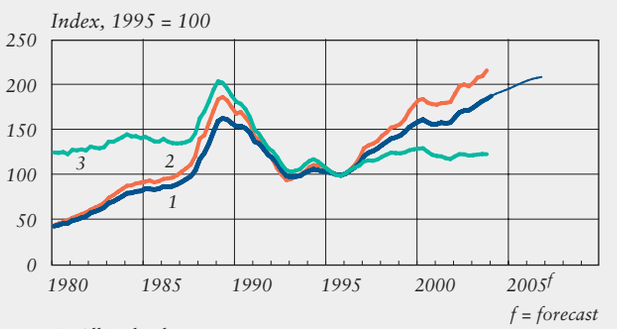
growth in demand. Tender prices for construction contracts have risen rapidly in the wake of rising housing prices. In contrast, construction costs have risen considerably more slowly. If market mechanisms function properly, and the present shortage of building land does not become a permanent problem, the price of housing per square metre, tender prices and construction costs can be expected to develop over the long term more or less in parallel. An increase in housing prices greater than that in construction costs creates excessive profits in the industry, which will flatten out as new contractors enter the market. This will gradually increase the supply of housing and limit price rises.

The factors behind the strong housing demand are not likely to change much during the forecast period. Housing prices are forecast to continue to rise, if at a slower pace. We forecast a rise of approximately 6% in 2004, after which the pace of increase should ease to around 4–5% in 2005 and 2006. Price development will be moderated by increased supply as the housing investment that got off to a brisk start in 2003 gathers pace during the forecast period. Price rises will also be limited by an expected rise in interest rates during the course of 2005 and 2006. Our forecast assumption based on market expectations is for the money market rate at the end of 2006 to be around 2 percentage points above the present rate.

For several years now housing prices have been rising much faster in the Helsinki metropolitan area than in the rest of the country. This trend would now appear to have come to a halt, at least temporarily, as housing prices in the Helsinki area rose last year at the same pace as the average for the country as a whole. One explanation is the fact that population drift into the Helsinki area from the rest of the country was reversed in 2003. The ratio between housing prices in the Helsinki area and price levels across the country is approximately the same now as at its height in 1988.

Chart 7.

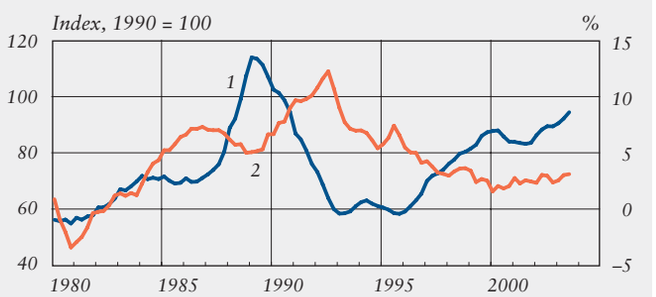
Housing prices



1. All Finland
2. Helsinki area
3. Ratio of housing prices to disposable income
Sources: Statistics Finland and Bank of Finland.

Chart 8.

Real housing prices and real interest rates



1. Real housing prices (left-hand scale)
2. Real interest rates on new loans (right-hand scale)
Sources: Statistics Finland and Bank of Finland.

Bank loans and deposits[4]

Interest rates on bank loans and deposits have declined in recent years along with declining money market rates. The average interest on new loans by deposit banks fell last year by around 0.4 percentage points from around 4% the previous year. The average interest on bank deposits has also fallen substantially to stand at 1.1% in 2003.

In Finland, banks' interest rate margins have also been narrowed by stiffer competition and changes in the principles applied in pricing services. The forecast assumption of an increase in money market rates will be rapidly passed on to the interest on bank loans during the forecast period. The average interest on new loans is forecast to rise close to 4.5% by the end of 2006. Deposit rates, in contrast, will not react immediately to the rise in money market rates and long-term interest rates. This is because some deposits are term deposits whose interest rates have already been agreed at an earlier date. Deposit rates are, however, expected to rise to 1.2% by the end of 2006, with interest rate margins remaining at the level of 2003.

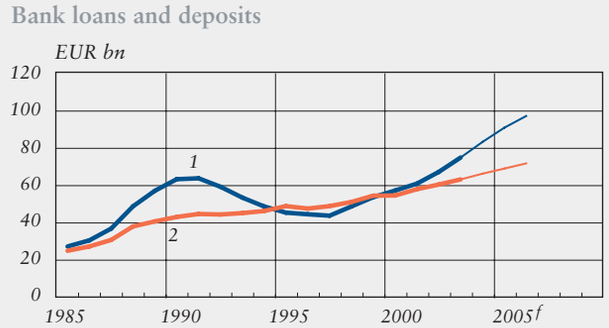
Despite low interest rates, growth in corporate credit demand slowed from 11% in 2002 to just over 7% in 2003 as corporate investment contracted. Corporate credit demand is forecast to grow during the forecast period by an average 6% per annum, ie slightly slower than last year. The sluggish pace of growth is partly due to the slow recovery in corporate investment. Dividend tax reform could, however, increase corporate credit demand beyond the level forecast, as higher rates of dividend tax will make debt financing a more attractive proposition than equity financing.

Growth in household demand for bank loans accelerated further during 2003, reaching 13%, against 10% in 2002. Demand has been stimulated especially by the rapid growth in housing loans. In 2004, growth in household demand for bank loans is expected to continue at the same rapid pace as in 2003. For 2005–2006, however, we forecast a slowing in the pace of growth, to 7% in 2006. This is due to an expected rise in interest rates and a slower pace of growth in disposable household income. In particular, there will be some easing in the recent very rapid growth in the stock of housing loans.

Continued rapid growth in the stock of household bank loans over the next few years could eventually cause problems. The combined debt of Finnish households is not yet particularly large

Chart 9.

Bank loans and deposits



1. Loans to households and non-financial corporations
2. Euro-denominated deposits by the public
Source: Bank of Finland.

[4] The compilation of banking statistics was changed as of the beginning of 2003. For more details see the Bank of Finland publication Financial Markets – Statistical Review.

compared with other countries, and therefore interest payments have, at least so far, remained fairly moderate relative to disposable income. However, the rapid growth in the debt in recent years has probably led to a less even distribution between households and increased the incidence of risky loans as a proportion of the total housing loan stock. Moreover, interest rates could rise during the loan repayment period by as much as several percentage points from their present exceptionally low level, which would considerably increase the costs of servicing housing loans. A rise in interest rates, an increase in the risk of unemployment or some other factor that would undermine household finances could lead to increasing difficulties for households in managing their debts, and eventually even lead to an increase in loan losses.

In Finland, growth in bank deposits has not kept pace with growth in loans (Chart 9). Deposits grew by 4.5% last year and the pace of growth is forecast to remain the same throughout the forecast period. Thus, deposits are growing at a much slower pace than loans. The stock of loans has actually been growing faster than the stock of deposits since 1998. We have now reached a situation where the funding gap between bank loans and deposits is beginning to show. The previous funding gap between 1985 and 1995 led to a dramatic growth in the level of finance banks had to buy on the financial markets and in their foreign-currency-denominated financing from abroad.

Supply

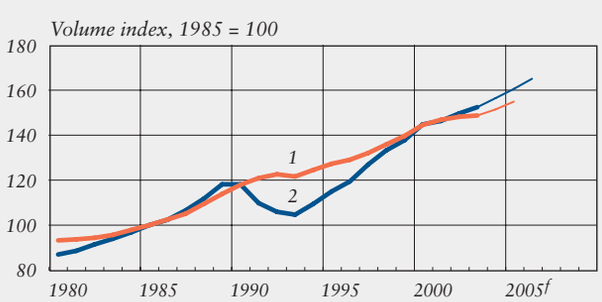
Output

After the Second World War, Finland's economic growth was for many decades faster than that of other Western European countries, which is of course typical for 'catch-up' countries. Purchasing-power-adjusted per capita GDP had already reached the average for the present-day euro area when Finland once more fell behind the others during the recession of the early 1990s. The years of rapid growth at the end of the decade then restored the country to its former position as a rapid-growth economy. However, due to its high price level, Finland's purchasing-power-adjusted per capita private consumption is well below average for the euro area.

A striking feature of GDP development in Finland and the euro area from the early 1980s to the present is the exceptional depth of the Finnish recession and the rapidity with which the Finnish economy recovered lost ground thereafter (Chart 10). Recent years have seen relatively slow growth in both Finland and the euro area in general.

Chart 10.

GDP



*1. Euro area**
2. Finland
** EU15 excl. United Kingdom, Sweden and Denmark.*
Sources: Statistics Finland, European Commission and Bank of Finland.

After three years of sluggish growth, our forecast envisages Finnish GDP growth at last accelerating to over 2½% in 2004–2005 and thereafter to 2.8% in 2006. Growth is thus forecast to continue at slightly above average for the euro area. As, due to Finland's production structure, the pace of growth in labour productivity is also relatively rapid, the forecast growth in output will not be enough to significantly increase employment.

Sources of output growth

Growth accounting can be applied to break output growth down into its component parts. Growth consists of the increase in the basic factors of production (number of employed plus capital) plus the increase in total factor productivity. The latter refers to that component of economic growth that is not explained by growth in employment or the capital stock. It is based primarily on changes in technology, but is also influenced by changes in the organisation of production and management. Growth accounting is a useful tool for describing phenomena, but it cannot be used to indicate the causal connection between the factors underlying growth.

The sources of growth have varied considerably in recent decades (Chart 11). In the 1980s, growth in the capital stock was an important engine of growth. Total factor productivity growth took great strides forward towards the end of the 1970s, and picked up again ten years later. Employment had little impact on growth, and in many years in the 1980s its effect was actually negative. Private sector employment stagnated through-

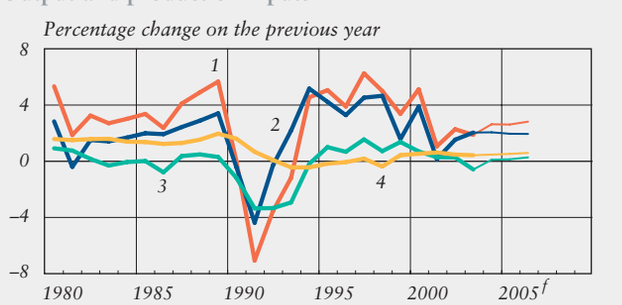
out the 1980s, contrasting with strong growth in the capital stock. This meant a rapid increase in the capital intensity of production. As total factor productivity also rose, the 1980s saw a fairly rapid improvement in labour productivity (Chart 12). It has subsequently been estimated that the productivity of investment was fairly weak in Finland until the recession of the 1990s. Financial market regulation and a corporate taxation regime that favoured outside capital did not encourage efficiency.

In many respects the rapid growth after the recession differed in structure from developments in earlier decades. Growth in total factor productivity was for many years around 4% or more, which is rare in international comparison. This reflects rapid structural change, as inefficient production plants closed down and the rising importance of the information and communications sector began to show in the statistics. For several years during the recession investment did not keep pace with capital depreciation, leading to a contraction in the contribution of the capital stock. When employment began to recover around the middle of the decade, growth in the capital stock was so slow that the level of capital intensity declined in the second half of the decade. But, even so, the growth in labour productivity was just as fast as in the 1980s.

A decline in capital intensity is rather rare internationally. In Finland, it was associated with structural change and increasing investment efficiency. This is now all in the past. Over the past three years the growth in the capital stock has been slow, but, as employment growth has been virtually at a standstill, capital intensity has nevertheless been gradually increasing. Growth in total factor productivity has normalised at the level of the 1980s. In the forecast period, growth in total factor productivity will account for approximately 2 percentage points of the fully 2–3% growth in GDP. The rest will derive almost entirely from growth in the capital stock. In the Finnish economy as a whole,

Chart 11.

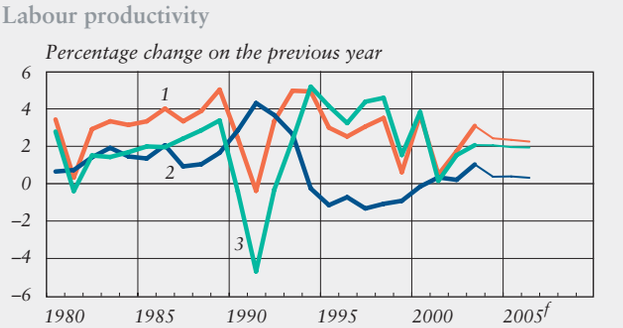
Output and production inputs



1. Output
2. Total factor productivity
3. Labour input
4. Capital input
Sources: Statistics Finland and Bank of Finland.

Chart 12.

Labour productivity



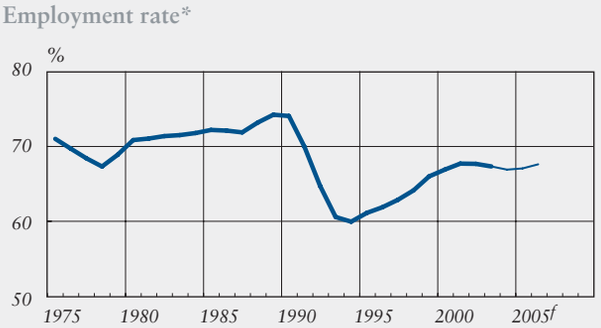
1. Labour productivity
2. Capital intensity
3. Total factor productivity
Sources: Statistics Finland and Bank of Finland.

growth in labour productivity will normalise at 2% in the forecast years. As in previous years, there will be large sectoral differences in the pace of growth in labour productivity.

As a result of demographic trends, the number of employed in Finland will begin to decline soon after the end of the forecast period. In the future, technological development is unlikely to make such great strides as in the past ten years. Therefore the pace of growth in total factor productivity will be fairly mediocre compared with the recent past. Welfare growth will in the future be largely dependent on investment. The development of investment and, by extension, growth in capital intensity will depend on how attractive Finland is felt to be as an investment target in a situation where the capital yield requirement is determined outside the country. This all suggests that after the forecast period Finland will have to be prepared for a much lower level of output growth than forecast here.

Chart 13.

Employment rate*



** 15–64-year-olds.*
Sources: Statistics Finland and Bank of Finland.

Employment

In common with the other Nordic countries, Finland has traditionally enjoyed high employment. During the recession the employment rate came down for a few years close to the average for the euro area. It subsequently rose steadily year on year until 2001 (Chart 13). The employment rate of just under 68% reached at that time was still slightly below the Lisbon targets. It is better than the euro area average, but lags behind the other Nordic countries. In the past couple of years, the employment rate has been declining slightly. There is still a long way to go to reach the Government's target of 75%.

The dip in the employment rate in 2002 and 2003 reflects both a weakening employment situation and a simultaneous slight increase in the size of the working-age population (15–64 years old). The annually adjusted figures for 2003 reveal 8,000 fewer employed. At the end of the year there were as many as 20,000 fewer employed than at the beginning of the year. There was also a drop in the labour supply, and the change in unemployment was therefore slight. This is largely due to a drop in the demand for part-time labour leading many students to withdraw from the labour market.

The Bank of Finland forecasts a slight rise in the number of employed and the hours worked during the present year. By 2006, the number of employed is forecast to grow by around 20,000 from 2003. This is a fairly optimistic forecast, as it does not assume any new structural measures to stimulate labour supply or demand or to achieve a better

match. The main impact of the pension reform will not begin to show in labour supply until after the forecast horizon.

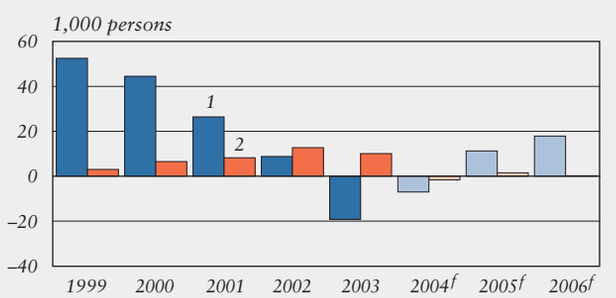
Last year brought a decline in private sector employment, especially in industry (Chart 14). This was due to weak demand for industrial products and a steep rise in real labour costs. The increase in private sector producer prices in 2003 was only a little over ½%, while labour costs rose by over 4%. In many sectors of export industry there was a decline in euro-denominated export prices. The incomes agreements concluded in autumn 2002 were based on expectations of a fairly steady level of around 2% inflation, which have subsequently proved unfounded. Public sector employment has grown throughout the 2000s. This trend will, however, come to an end during the forecast period as municipal finances, in particular, come under pressure.

Chart 15 shows the employment impact of final goods and real labour costs. Labour demand is additionally influenced by technological development and changes in companies' price margins.[1] The chart shows that growth in output has traditionally been the most important factor behind growth in labour demand. This was so during the years of rapid growth towards the end of the 1990s, and it will also be the case during the forecast period. Rising real labour costs have systematically weakened demand for labour. The impact of the residual factor depicting technological development and price margins has in most years also reduced labour demand. Technological development has saved labour, but price margins also rose considerably in the mid-1990s.

The unexpected rise in real labour costs in 2003 explains almost 0.7 percentage points of the 0.8% drop in employment. In 2004, producer prices are expected to increase at a slightly faster pace and stimulate increased demand for labour. Output growth will also boost

Chart 14.

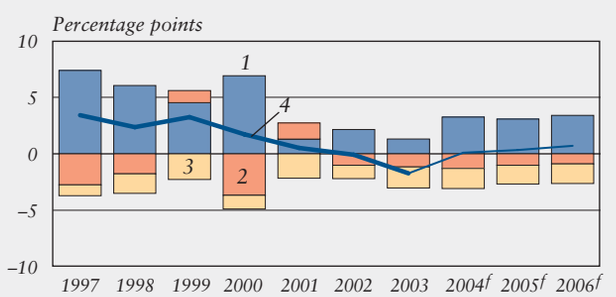
Employment change*



1. Private sector
2. Public sector
** Change on the previous year.*
Sources: Statistics Finland and Bank of Finland.

Chart 15.

Factors influencing labour demand*



1. Output *2. Technological development and price margins*
3. Real wages *4. Labour demand, percentage change*
** Includes only the public sector. Based on Antti Ripatti and Jouko Vilmunen's study Declining labour share – Evidence of a change in underlying production technology? Bank of Finland Discussion Papers 10/2001.*
Sources: Statistics Finland and Bank of Finland.

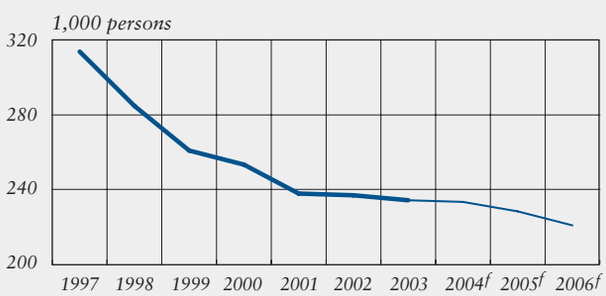
[1] The method is explained in Ripatti, A. and Vilmunen, J., *Declining labour share – Evidence of a change in underlying production technology?* Bank of Finland Discussion Papers 10/2001.

labour demand, despite the fact that growth will no longer be concentrated so much on the labour-intensive domestic market sector. The efficiency measures initiated last year to improve productivity are, however, on such a scale as to reduce labour demand more than last year. Although employment will deteriorate during the early part of the year, by year end it will have returned to its present level. Employment will contract particularly in industry, and to some extent also in private services. The buoyant housing construction sector and local government recruitment will bolster employment this year. As demand recovers, there will be a slight increase in private sector employment in 2005 and 2006. Local government's capacity to take on more labour is, however, very limited at the present rates of municipal income tax. Public sector employment will therefore grow scarcely at all after 2004.

There will be a further slight contraction in the supply of labour during 2004, but this will be followed later by a slight expansion. According to Statistics Finland's Labour Force Survey, Finland's unemployment rate averaged 9% last year and will remain the same in 2004. If output grows as forecast, there will be only a slight decrease in unemployment in succeeding years. An unemployment rate of 8½% is forecast for 2006, with the number of unemployed standing at approximately 220,000 (Chart 16). Although the official unemployment rate has remained almost unchanged throughout the recent recession, disguised unemployment has risen by around 10,000 since the beginning of 2002. The concept of disguised unemployment refers to people who are the subject of labour market policy measures or on unemployment pension. Thus, broad unemployment in Finland has remained above 400,000 (Chart 17)[2] and has not declined at all during the past three years.

Chart 16.

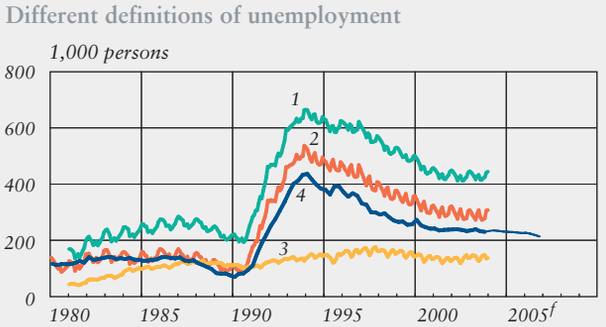
Unemployment



Sources: Statistics Finland and Bank of Finland.

Chart 17.

Different definitions of unemployment



*1. Broad unemployment**
*2. Narrow unemployment**
*3. Disguised unemployment**
4. Unemployment in Statistics Finland data (seasonally adjusted by the Bank of Finland)
** Calculated on the basis of Ministry of Labour statistics.*
Sources: Ministry of Labour, Statistics Finland and Bank of Finland.

[2] Disguised unemployment and the different definitions of unemployment are discussed in detail in Kurri, S., 'Paljonko Suomessa on työttömiä?', *Euro&talous* 4/2003. An English translation of this article entitled *How many people in Finland are unemployed?* is available on request from the Bank of Finland's Economics Department.

Capital

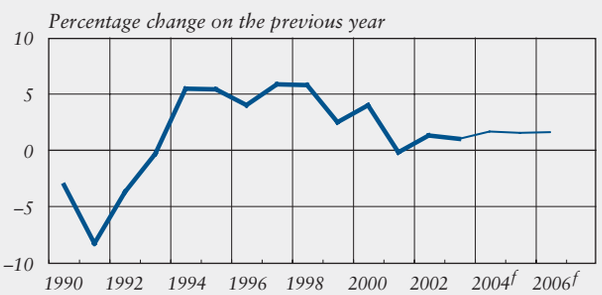
In the national accounts, the growth in the capital stock is measured by subtracting capital depreciation from fixed investment. Low investment in productive capacity is thus reflected in slow growth in the capital stock. Although for much of the 1990s there was negative growth in the capital stock, this was balanced by rapid growth in total factor productivity. Recent years have seen moderate growth in the net capital stock. In 2003, the private sector productive capital stock grew approximately ½%. Growth is forecast to continue at the same rate in 2004, thereafter accelerating to approximately 1% by 2006.

In the short term, the low utilisation rate in industry is the main reason for the sluggish growth in investment and for growth in the capital stock lagging well behind growth in output. According to Statistics Finland's figures, the capacity utilisation rate in manufacturing industry in January 2004 was over 5 percentage points below the level during the years of rapid growth at the end of the 1990s. The technical limit to utilisation is presumably even more distant, as fixed investment has in recent years been concentrated on production process rationalisation outside as well as inside industry. Rationalisation means more efficient utilisation of the existing capital stock. The average productivity of the capital stock across the economy as a whole is estimated to grow during the forecast period at a rate of a little under 2% (Chart 18).

Long-term growth in the capital stock will depend on how attractive Finland is as a location for investment in productive capacity. The trend of recent years indicates that the shares of Finnish companies and many other companies operating in Finland have been attractive targets for foreign companies and investors. In contrast, there has been less interest in inward direct investment in expanding production capacity. Outward direct investment by Finnish companies has for years been greater than inward investment in Finland by foreign companies (Box 2).

Chart 18.

Capital productivity*



** Average productivity of capital. GDP divided by capital stock.*
Sources: Statistics Finland and Bank of Finland.

Box 2.

Direct investment and competitiveness

Finnish businesses have internationalised their operations at an extremely rapid pace over the past 10 years. Competition has become fiercer, and in many sectors a reduction in production costs has only been possible by increasing the size of companies and production plants. In many cases, internationalisation has involved operational expansion or even the direct transfer of activities abroad. There are generally only limited opportunities for expansion within Finland, and it is also important for companies to be close to their main markets. On the other hand, Finland has provided skills and new customers for foreign companies seeking to expand.

According to balance of payments statistics published by the Bank of Finland, the stock of inward direct investment in Finland in the third quarter of 2003 was EUR 34 billion, while the stock of outward direct investment was EUR 57.5 billion (Chart A).[1] Despite the economic recession the flows of direct investment have remained relatively large, with a very important contribution coming from a few large mergers between Finnish and Swedish companies.

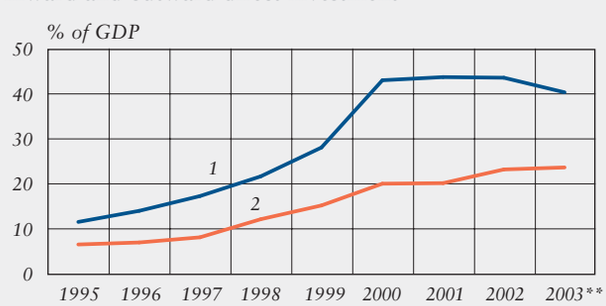
EU countries' share of direct investment is considerable. The most important target country is Sweden, with a 30% share of outward direct investment by Finnish residents and an even larger 55% share of inward direct investment in Finland. This is explained to a great extent by three major mergers: StoraEnso, Nordea and TeliaSonera.[2]

There are a number of problems associated with direct investment statistics. For example, outward direct investment from Finland to Russia and Estonia, and especially to China, tends to be underestimated. In the first place, direct investment is entered according to the target country in which the initial investment is made. For example, 13% of Finland's stock of investment is entered as investment in the Netherlands. For tax reasons, it is advantageous to maintain holding companies there for administering investments in other countries. Secondly, internal capital transfers and cash flow management within international corporations can also distort the country breakdown of investment. Thirdly, the Bank of Finland's annual statistics are based on a sample, and thus probably miss a lot of small individual investments. This is particularly true in respect of Russia and Estonia. Estonia's own statistics give a much higher figure for Finnish investment than the figures recorded in Finnish statistics.

If we consider stocks of investment sector by sector, outward investment by Finnish residents is still primarily in industrial enterprises, whereas the main focus of inward investment has been in services, with industry accounting for only a third of total inward investment. The profile of services has been raised by two of the large mergers mentioned above: as a result of the

Chart A.

Inward and outward direct investment*



1. Outward direct investment from Finland
2. Inward direct investment to Finland
** Stock of investment.*
*** The data on 2003 is from the third quarter.*
Source: Bank of Finland.

[1] Direct investment refers to capital investment by a company in another company located in a different country for the purpose of creating a permanent economic relationship and acquiring a controlling influence. In practice, an investment is classified for statistical purposes as direct investment if the investor has an ownership share or voting power in the foreign investee of at least 10%. Investments below this figure are classified as portfolio investment. In contrast to direct investment, in portfolio investment in shares the level of inward investment is greater than the level of outward investment.

[2] The data on the distribution of direct investment by country and sector are from 2002.

TeliaSonera and the earlier Nordea merger almost half of direct inward investment in Finland is in the finance and insurance sector and other services.

Although there has been a marked increase in direct inward investment in recent years, as such this should not be interpreted as the sole measure of competitive success. One example of why direct investment is not necessarily a particularly accurate measure of competitiveness is provided by Nokia. This is a company that has attracted large amounts of foreign capital, drawn, we can safely assume, by Nokia's technological and management expertise. Foreign investment in Nokia is not, however, visible in the figures on inward direct investment, but under a different balance of payments item, namely portfolio investment.

The opening of the Finnish market has raised the required return on capital to the level of other industrialised nations, or perhaps even higher as a consequence of our peripheral location, and this has in turn been reflected in a drop in the investment ratio (see under 'Investment', p. 31). The proposed reform of corporate and capital taxation is unlikely to reverse this trend. On the contrary, it is actually more likely to reinforce it. Higher effective tax rates for many Finnish-owned companies will probably reduce their willingness to invest, and there is no sign of new investment from abroad to fill the gap.

Many large Finnish companies have no further scope for growth in the home market. For some, reducing their Finnish operations could even be essential for survival in the face of fierce international competition. Asia and an enlarged EU offer almost unlimited growth opportunities for Finnish companies. In such circumstances it is natural to expect turnover and employee numbers, in industrial companies at least, to grow faster abroad than in Finland.

With the exception of portfolio investment there has not been a great deal of inward direct investment in Finland, which is perhaps surprising given the country's success in a range of measurements to gauge competitiveness. Particularly rare has been the construction of foreign-owned production plants. In addition to high taxes and labour costs, a peripheral location far from the major markets is perhaps the most important obstacle to investment in Finland. In addition to their central location, the new EU member states in Central Europe can also offer cheaper labour than Finland and many other countries. Consequently, Finland can only really expect investment in existing, profitable export companies and to increase competition in the domestic sector. In contrast, direct investment in generating new export capacity and capital in the form of high expertise threatens to fall short of the level needed to boost growth and sustain competitiveness.

Table A.

Stocks of direct investment in 2002, by region

EUR bn (% share in brackets)	*Outward*		*Inward*	
EU	*41.5*	*(68)*	*29.5*	*(91)*
Sweden	*18.1*	*(30)*	*17.7*	*(55)*
Rest of Europe	*10.1*	*(16)*	*1.6*	*(5)*
Russia	*0.3*	*(1)*	*0.3*	*(1)*
Estonia	*0.6*	*(1)*	*0*	*(0)*
North America	*6.0*	*(10)*	*0.7*	*(2)*
Asia	*1.8*	*(3)*	*0.5*	*(1)*
China	*0.6*	*(1)*	*0*	*(0)*
Total	*61.0*	*(100)*	*32.4*	*(100)*

Source: Bank of Finland.

Table B.

Stocks of direct investment in 2002, by sector

EUR bn (% share in brackets)	*Outward*		*Inward*	
Industry	*41.8*	*(68)*	*10.8*	*(33)*
Forest	*15.4*	*(25)*	*–*	*(–)*
Metal	*18.9*	*(31)*	*4.5*	*(14)*
Services	*14.6*	*(24)*	*19.5*	*(60)*
Finance and insurance	*8.1*	*(13)*	*10.5*	*(32)*
Other	*5.9*	*(10)*	*5.5*	*(17)*
Total	*61.0*	*(100)*	*32.4*	*(100)*

Source: Bank of Finland.

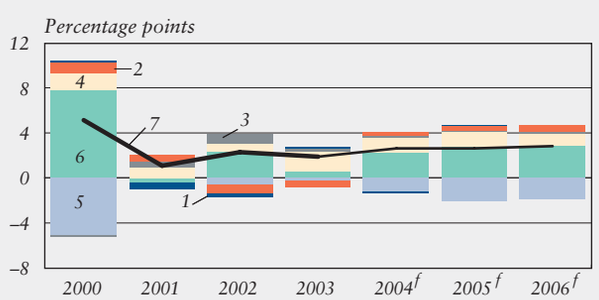
Demand

Finland's market price GDP grew 1.9% in 2003. Almost the entire figure is accounted for by domestic demand, and private consumption in particular, with only a very small contribution from net exports. Although GDP is forecast to grow around 2.6% per annum in 2004–2005, there will be a change in the structure of growth during these years, with net exports playing a much clearer role in sustaining growth (Chart 19). There will still be brisk growth in private consumption during 2005. As this fades towards the end of the forecast period, however, continued growth in domestic demand will be supported by a cautious recovery in investment. GDP growth will accelerate to 2.8% in 2006.

The figures for market price GDP include product taxes and subsidies. GDP growth measured in this way was boosted in 2003 partly by a sharp rise in car sales, which dramatically increased the revenue from product taxes. Measured by basic price, ie without product taxes or subsidies, the weight of car sales is less, whereupon GDP growth is also much more moderate, at 1.2%. Inventory change and statistical error had very little impact on GDP last year, with only 0.1 percentage points of GDP growth attributable to these temporary factors. Their significance will be of the same order during the forecast period.

Chart 19.

Growth contributions*



1. Inventory change and statistical error
2. Private investment
3. Public sector demand
4. Private consumption
5. Imports
6. Exports
7. GDP, percentage change in volume
**Contribution of demand items to GDP growth, % of previous year's GDP.*
Sources: Statistics Finland and Bank of Finland.

Consumption

The volume of private consumption is expected to grow 2.8% in 2004, in contrast to last year, when it rose by as much as 3.6%. Growth in private consumption has been supported in the past couple of years by low interest rates and the positive and stable development of real incomes (Chart 20). Household consumption in 2003 focused particularly on durable goods. According to Statistics Finland, households purchased more than 25% more consumer durables in 2003 than in the previous year. Most of this increase is attributable to car sales, which were boosted by reform of the car tax. Most of the pent-up demand appears to have been released, and car sales are therefore forecast to even out from this year forward. As a result, we can expect a slight easing of growth in consumption expenditure.

According to Statistics Finland's consumer confidence indicator, households' confidence in their own finances has remained strong, supported in part by the favourable performance of share prices in 2003 and the rising value of housing assets. In January, there was a further slight improvement in consumer confidence both in regard to their own finances and over the prospects for the Finnish economy as a whole. According to the survey, consumers particularly considered the tak-

ing out of loans and the purchase of durable goods to be very worthwhile.

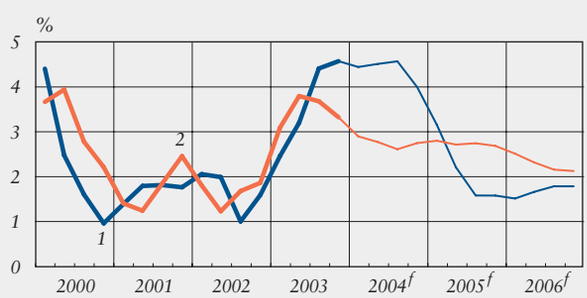
According to preliminary figures released by Statistics Finland, nominal wage earnings rose by approximately 3.8% in 2003. Negotiated pay increases accounted for 2.9% of the annual rise, with the rest being attributable to wage drift and changes in employee structure. Annual growth in real earnings was 2.1%, a fairly strong figure in view of the cyclical state of the economy. Growth in nominal earnings is forecast to ease this year to 3%, but to rise again to around 3.5% in 2004 and 2005. Exceptionally low inflation means real earnings will grow almost 2.4% in 2004. As the pace of inflation returns to a more normal level, growth in real earnings will ease to just under 2% in 2005–2006, which will in turn moderate the pace of growth in consumption.

Household earnings are also benefiting from the generous distribution of dividends by Finnish companies. In 2003, dividend distribution was up 6% on the previous year. Exceptional dividend growth is estimated for 2004, at approximately 20%. An incentive for unusually large dividends has been given by the Government's statement of intent to raise dividend taxation in 2005. This will increase the tax burden particularly on the owners of Finnish-owned listed companies. Once the new taxation regime has come into force, dividend distribution will towards the end of the forecast period return to slightly below its historical level. Only part of this growth in dividend income will go into consumption, as it is merely a temporary increase in income, and because the saving ratio is typically higher in dividend income than in wage income. Thus, the resulting increase in disposable income in 2004 will be reflected mainly as a rise in the household saving ratio.

The household saving ratio is forecast to increase this year to around 1½% from last year's level of 0.1% (Charts 21 and 22). This will, however, be a temporary increase, after which the ratio will fall back again below 1% in 2005–2006. This concept of savings

Chart 20.

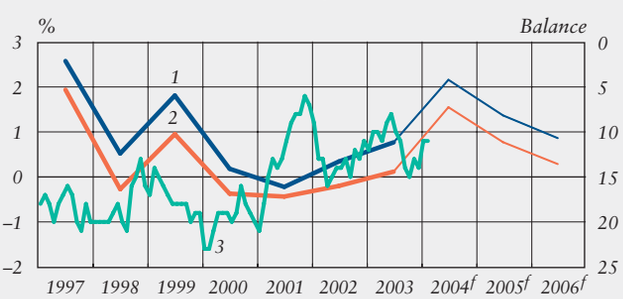
Household income and consumption*



1. Households' disposable income
2. Private consumption
** 2-quarter moving total, year-on-year percentage change.*
Sources: Statistics Finland and Bank of Finland.

Chart 21.

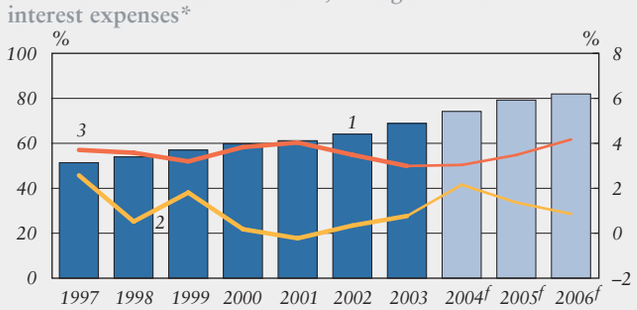
Consumer confidence and saving ratio*



1. Household saving ratio incl. adjustment for the change in net equity of households in pension funds (left-hand scale)
2. Household saving ratio (left-hand scale)
3. Consumer confidence indicator (right-hand scale)
** % of disposable income.*
Sources: Statistics Finland, European Commission and Bank of Finland.

Chart 22.

Household sector indebtedness, saving ratio and interest expenses*



1. Debt ratio (left-hand scale)
2. Household saving ratio incl. adjustment for the change in net equity of households in pension funds (right-hand scale)
3. Interest expenses (right-hand scale)
** All in % of disposable income.*
Sources: Statistics Finland and Bank of Finland.

Table 1.

Net household and general government lending in 2003 (% of GDP)

Sector	*National accounts*	*Adjusted*
Household sector	*–1.0*	*1.2*
Total general government	*2.1*	*–0.2*
Central government	*0.3*	*0.3*
Local government	*–0.5*	*–0.5*
Employment pension funds	*2.6*	*0.4*
Other social security funds	*–0.2*	*–0.2*

Sources: Statistics Finland and Bank of Finland calculations.

does not include households' statutory pension savings, which are included in national accounts statistics under general government savings. In examining households' behaviour, statutory savings could also justifiably be entered as private sector savings. This is especially so now, as the new pension system to be phased in from 2005 onwards will strengthen the connection at the level of the individual between contributions paid and future pension benefits. Calculated thus, the household saving ratio would be larger (around 1% in 2003), but the general government surplus would be correspondingly smaller.

General government

The outlook for the general government sector in the forecast period is stable. Measured according to national accounts statistics, the general government fiscal surplus should remain around 2% of GDP. This figure includes the surplus in social security funds. From 2004 onwards, tax cuts will push the central government fiscal position slightly into deficit. The local government fiscal deficit will contract only slightly despite the fact that many municipalities will raise their local income tax rates and trim their investment plans. The surplus in the social security funds will increase as the employment pension funds' income on assets begins to grow once again. Fiscal policy will support growth in both 2004 and 2005, but thereafter the impact will be neutral.

If the surplus in the statutory pension system were entered under household savings instead of general government savings, the resulting general government saving ratio would already have been negative in 2003, while in 2002 it was still clearly positive. According to the Bank of Finland's forecast, general government net lending calculated in this way will also remain negative in 2004 and 2005. This would suggest that Finland's public finances are not quite as strong as they are often presented to be in international comparisons.

Finland's gross general government debt grew exceptionally by EUR 5.3 billion in 2003. This increase was essentially technical in nature and due primarily to the fact that the State Treasury and the employment pension funds (classified under general government)

Table 2.

General government revenue, expenditure, financial balance and debt, % of GDP

	2001	2002	2003	2004f	2005f	2006f
General government revenue	54.4	54.4	52.7	52.4	51.9	51.9
General government expenditure	49.2	50.1	50.6	50.4	50.1	49.7
General government primary expenditure	46.4	47.9	48.6	48.5	48.3	47.9
General government interest expenditure	2.7	2.2	2.0	1.9	1.8	1.7
General government net lending	***5.2***	***4.3***	***2.1***	***2.0***	***1.8***	***2.3***
Central government	2.0	1.4	0.3	–0.1	–0.4	–0.1
Local government	–0.4	–0.2	–0.5	–0.5	–0.4	–0.3
Social security funds	3.6	3.0	2.4	2.6	2.6	2.7
General government primary balance	7.9	6.5	4.1	3.9	3.6	4.0
General government debt	***43.9***	***42.6***	***45.3***	***44.7***	***44.2***	***43.1***
Central government debt	45.6	42.4	44.1	43.0	42.1	40.7
Tax ratio	45.8	45.8	44.5	44.0	43.6	43.6

f = forecast
Sources: Statistics Finland and Bank of Finland.

ran down their investments in government securities. The debt instruments held by these institutions are not included in general government debt under the EU definition. The present deficits mean both general government and central government debt will genuinely begin to grow during the forecast period. Relative to GDP, however, there will be a contraction in both general government and central government debt.

General government revenue relative to GDP will decline during the forecast period. Revenue growth from both direct taxes paid by households and indirect taxes will be subdued this year as a result of cuts in income tax rates and decreases in alcohol taxes respectively. On the other hand the average local government income tax rate will rise and local government will also receive increased revenue from real estate taxes. Exceptionally large dividend payments by Finnish companies will also bring in substantially higher levels of revenue than last year for both central government and the employment pension funds. Reductions in corporation and capital taxes will subdue growth in indirect tax revenues in 2005, when total revenue from taxes paid by corporations will be considerably smaller than this year. On the other hand, the shift from the imputation system of corporation tax to the partial double taxation of dividend income allied to increased taxes on voluntary pension savings will to some extent increase revenues from direct taxes paid by households. As a result of all these changes, the tax ratio will decline by approximately 1 percentage point in 2004 and 2005. In 2006, the scheduled inflation adjustment to central government income tax scales and a slight erosion in corporation and product tax bases will be enough to keep the tax ratio unchanged.

General government consumption expenditure will rise by an average of 4% per annum, and other categories of expenditure by an average of around 3% per annum during the forecast period. In real terms, consumption expenditure growth will average approximately 1% per annum, with a slight increase in staff numbers in local government in

particular. A reduction in central government interest payments and a halt to the rise in local government investment expenditure will subdue growth in other categories of expenditure to such an extent that it will not grow at all in real terms during the forecast period. Of the expenditure categories other than consumption, the fastest growing category will be pensions. Despite the rise in the actual retirement age, the sum paid out in employment pension will grow faster than GDP. Unemployment expenditure will increase this year, as the Government spends more on implementing labour policy. In 2005 and 2006 there will be a decrease in both the number unemployed and unemployment expenditure.

Strict spending limits will control growth in central government expenditure. The intractable and increasingly structural local government deficit will force municipal authorities to seek ways to provide services more efficiently and control expenditure growth. On the other hand, the rapidly changing population structure will boost demand for public services and stimulate faster expenditure growth, further increasing the pressures for more efficient provision of local government services. In addition, many local government health care, social welfare and educational staff will be retiring in the next few years. Retirement and the accelerating pace of growth in demand for services will generate a labour force deficit, which will force local government to compete harder than before to recruit the staff they need. In addition, the introduction of ever more advanced and expensive forms of treatment will increase the costs of service provision more rapidly than the general trend of price rises. Indeed, unemployment expenditure would appear to be the only public expenditure category set to decline in the immediate years ahead.

Central government spending limits will impose strict controls on the extent to which central government can contribute to the funding of local government expenditure. The need to keep central government expenditure within the spending limits will require local government to control expenditure growth through more efficient service provision, ie by operational rationalisation, networking and engaging in cooperation across municipal boundaries. The Government's March decision on spending limits suggests there will be no relaxation of the spending limits. Thus, the municipalities cannot assume central government will cover any growth in their expenditure by increasing income transfers to local government. In such a situation it is not possible to increase the statutory responsibilities of local government.

Controlling growth in public expenditure despite increasing spending pressures will also further structural policy objectives aimed at fostering economic growth and boosting employment. The large tax wedge is one of the factors sustaining Finland's high structural unemployment. In addition, tax competition will make further tax cuts unavoidable. With the simultaneous requirement to secure the sustainability of general government finances, public expenditure will inevitably have to be adjusted to an ever stricter framework. The sluggish response by Finland to the

cyclical upturn in the world economy suggests structural problems in the Finnish economy and highlights the importance of taxation. The economic costs of high taxes are being increased by tax competition, and there is a growing need to reform the tax structure. However, there will also have to be acceptance of the inevitably diminishing role of government in smoothing out income differences and providing free welfare services.

Investment

There has been a considerable drop in private non-residential investment in the past two years. As output over the same period has grown, the investment ratio has shrunk from around 13% in 2001 to just over 10% in 2003. The forecast envisages a further drop in investment this year of around ½%. Continued low interest rates and recovering demand will halt the decline in the investment ratio. Private non-residential investment will begin to grow at a moderate pace in 2005, with stronger growth forecast for 2006. The recovery in investment will be supported by a strong recovery in exports and a rising rate of capacity utilisation.

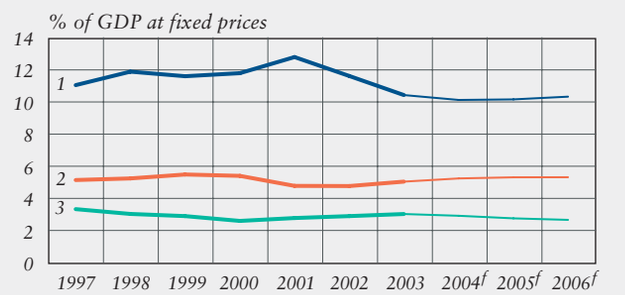
An investment survey by the Confederation of Finnish Industry and Employers supports the impression of a cautious recovery in investment. According to the survey, fixed investment in manufacturing industry will rise by fully 1% this year. Most of this is planned for the purposes of replacement and rationalisation. Only a third of planned investment is for expanding capacity. As factors restricting investment, the survey highlights weak demand and low capacity utilisation rates.

The financing structure of the corporate sector could bear levels of investment considerably higher than forecast. Since 2001, the operating surplus of the corporate sector has grown faster than investment, and investment growth is not forecast to overtake operating surplus growth until 2005. As investment recovers, investment prices will also begin to rise faster than production prices.

Overall, private non-residential investment is fairly subdued at present.

Chart 23.

Investment ratio

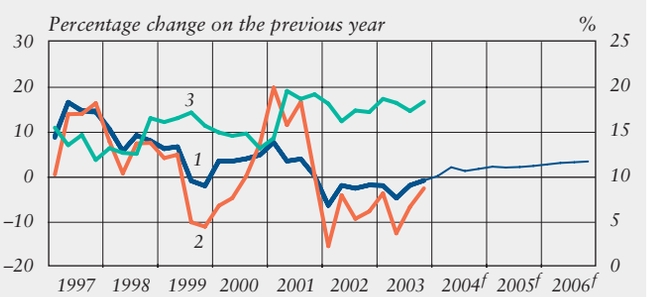


1. *Private non-residential investment*
2. *Housing investment*
3. *Public investment*

Sources: Statistics Finland and Bank of Finland.

Chart 24.

Investment

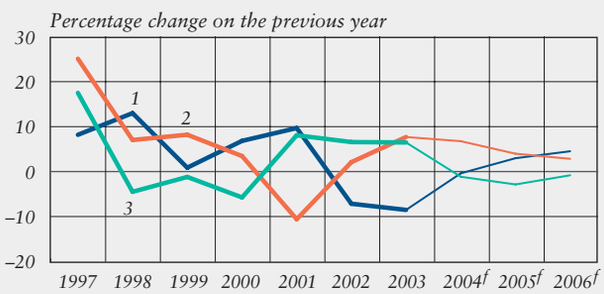


1. *Fixed investment (left-hand scale)*
2. *Investment in machinery and equipment (left-hand scale)*
3. *Unutilised capacity (right-hand scale)*

Sources: Statistics Finland and Bank of Finland.

Chart 25.

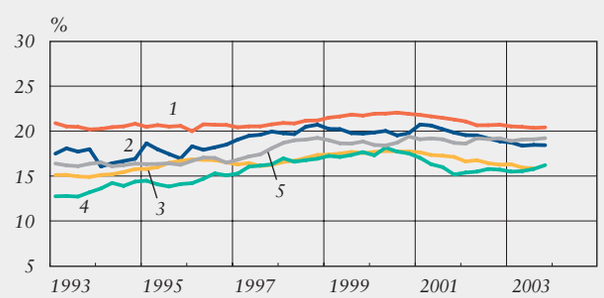
Fixed investment



1. Private non-residential investment
2. Housing investment
3. Public investment
Sources: Statistics Finland and Bank of Finland.

Chart 26.

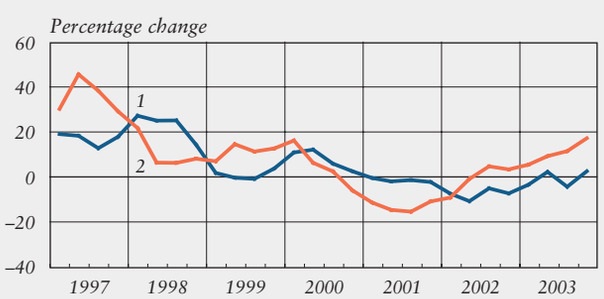
Investment ratio by country



1. Euro area *2. Finland*
3. Sweden *4. United States*
5. United Kingdom
Sources: Statistics Finland, Eurostat and Bureau of Economic Analysis.

Chart 27.

Construction*



1. New construction contracts
2. New residential construction contracts
** 4-quarter moving sum, year-on-year percentage change.*
Source: Statistics Finland.

Despite low levels of debt and exceptionally low real interest rates, companies are not investing in new capacity, at least not in Finland. The flow of direct investment, too, would appear to be more outward than inward.

The drop in the corporate investment ratio is not just a Finnish phenomenon, as the same trend has been visible in the other euro area countries, and in Sweden (Chart 26). In contrast, in the United States and the United Kingdom the investment ratio has begun to rise. The recovery in US investment is explained by the much higher level of investment in information and communication technology compared with Finland and other countries in the euro area. As the turnover rate for this sort of investment is more rapid than in traditional investment in machinery and equipment, the volume of replacement investment is larger and the investment ratio correspondingly higher.

If industrial investment in Finland is marked by caution, the same cannot be said of the pace of growth in housing investment. A dramatic rise in the profitability of housing construction led to an acceleration in the pace of real growth in housing investment to around 8% in 2003 from 2% the previous year.

A further increase in housing investment of around 7% is forecast for 2004, after which the pace of growth will ease to around 3–4%. The forecast of rapid growth in housing construction this year is supported by advance data from Statistics Finland, which indicates that 15% more new apartments were under construction in 2003 than the previous year. In addition, building permits

were granted for 18% more cubic metres. In the final quarter of 2003, construction began on a good 7 million cubic metres of housing, an increase of 17% on the same period the previous year (Chart 27).

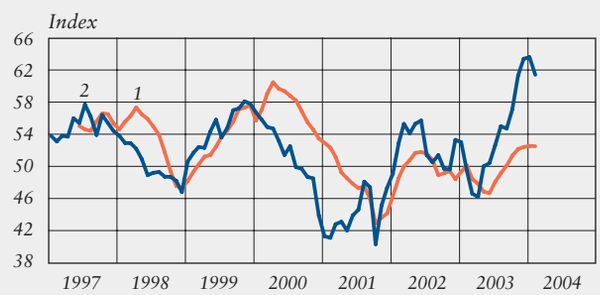
The world economy and foreign demand

2004 has so far been a good year for the world economy. In the United States in particular, the atmosphere in business circles is more positive than last year and there is greater confidence in the future, in part even more than at the end of the 1990s (Chart 28). Meanwhile, consumer confidence has also improved during the winter, although it remains weak in many countries (Chart 29). Consumers are still concerned by weak development on the employment front, a situation which illustrates the nature of the present recovery: in many countries there is still considerable underutilisation of labour and other production resources.

US growth is forecast to continue at a relatively rapid pace through the first half of 2004 as exports pick up on the back of the weak dollar and domestic demand is bolstered by tax cuts and rising asset values. However, towards the end of the year growth will ease as the policy stimulus wanes. The debt burden accumulated in recent years will restrict federal and household expenditure towards the end of the forecast period (Chart 30). Moreover, the forecast foresees households responding to the weakening federal budget position by increasing their savings. Thus, US growth in 2005–2006 is expected to be below the long-term average, at just under 3%.

Chart 28.

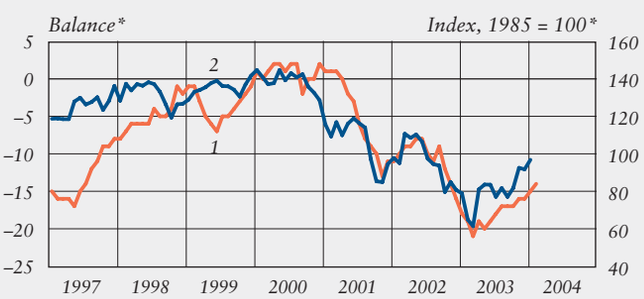
Industrial confidence



1. Euro area, Purchasing Managers' Index
2. United States, Purchasing Managers' Index
Sources: Reuters, Institute for Supply Management and Bloomberg.

Chart 29.

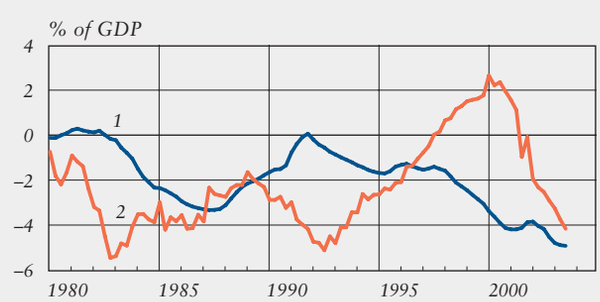
Consumer confidence



1. Euro area (left-hand scale)
2. United States (right-hand scale)
** Seasonally adjusted.*
Sources: European Commission and Conference Board.

Chart 30.

The US twin deficit



1. Current account
2. Federal budget
Source: Federal Reserve System.

The euro area economy began a slow recovery during the second half of 2003. However, growth for the year as a whole was very lacklustre, at under ½%. According to the forecast, recovery will continue, if slowly. The euro appreciation that has already occurred is hampering export growth, while domestic demand in the euro area also does not appear particularly strong (Chart 31). Admittedly, gradually improving confidence and growth in real incomes will support private consumption, but the weak employment situation will at the same time sustain the level of precautionary savings. Corporate indebtedness has so far inhibited investment recovery, but the favourable financial climate is expected to foster a gradual improvement.

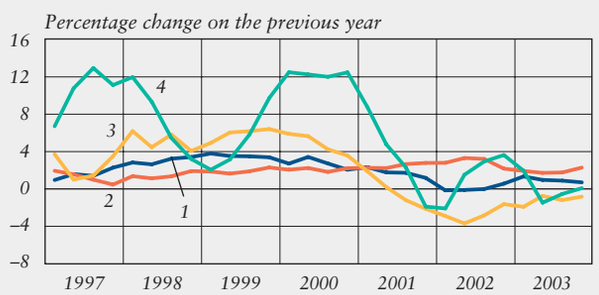
For EU countries outside the euro area, the forecast for the next few years is for slightly faster growth than within the euro area. Domestic demand, and particularly private consumption, has recently supported growth in the United Kingdom and Sweden. Looking to the future, the world economic recovery should produce more broadly based growth.

The Japanese economy grew surprisingly quickly in 2003 (Chart 32). Demand from other Asian countries boosted Japanese exports, which in turn bolstered corporate investment. Japanese growth is forecast to flatten out again during the forecast period. The basic problems in the Japanese economy have still not been addressed, which will temper the stimulus on the rest of the economy from the successful export sector. Compared with the recent past, however, growth will nevertheless be satisfactory.

Continued strong growth is forecast for Asia outside Japan. The Chinese economy has grown rapidly, with growth in real GDP last year as high as 9%. Growth in China's import demand has assisted the recovery of other economies in the region following the brief dip in world trade a few years ago. Continued rapid growth is forecast for the Chinese economy over the next few years, if

Chart 31.

Euro area domestic demand

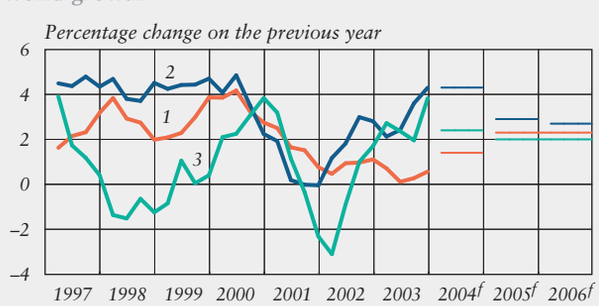


1. *Private consumption*
2. *Public consumption*
3. *Investment*
4. *Exports of goods and services*

Source: Eurostat.

Chart 32.

World growth



1. *Euro area*
2. *United States*
3. *Japan*

Sources: Eurostat, Bureau of Economic Analysis and Economic and Social Research Institute.

at a slightly slower pace than last year. Lower trade barriers resulting from membership of the World Trade Organisation should stimulate growth of Chinese textile exports in particular.

Fairly brisk growth is forecast over the next few years for Asia outside Japan and China, as the recovery of the world economy and strong demand in China will boost exports in the region. There will, however, be only a slow increase in investment, as the countries of the region are missing out on international capital flows, which tend to favour China. In addition, the balance sheets of non-financial corporations and banks in many of these countries are still not healthy. India's role in world trade over the next few years will remain negligible despite rapid export growth in software and services and the country's enormous potential.

Growth is expected to accelerate slightly over the next few years in the new accession countries that will join the European Union in May 2004, a trend that will also benefit from market recovery within the EU. Although growth will be considerably faster than in the present member states, it will not reach the levels achieved by Asia's emerging economies. The stimulus from the euro area will be limited, while the weakness of general government finances in some of these countries will also hamper growth. The new member states have in recent years already enjoyed the benefits of EU membership in advance, for example via inward direct investment. In the future these countries will have to compete more seriously for investment and jobs with other emerging economies. The pressure to adapt their public finances coupled with large current account deficits will limit their import opportunities. Viewed from the euro area, the new member states represent a substantial export market, as approximately one tenth of euro area exports go to these countries.

World trade picked up considerably during the second half of 2003. The increase was particularly brisk in Asia. US imports also grew during the last quarter of the year despite the weakness of the dollar. Euro area imports, in contrast, remained weak. Rapid growth in world trade is forecast for the next few years, supported by recovering domestic demand in the industrialised countries and the changes in the international division of labour resulting from globalisation. Besides China, many other countries, and in Europe particularly the new EU member states, will play an increasing role in international exchange. As in recent years, the most rapid growth in world trade will be between countries in Asia. Therefore, world im-

Table 3.

International growth rates

	2002	*2003*	*2004f*	*2005f*	*2006f*
Real GDP, % change					
World	*2.8*	*3.6*	*4.2*	*4.0*	*4.0*
United States	*2.2*	*3.1*	*4.3*	*2.9*	*2.7*
EU countries	*1.0*	*0.7*	*1.7*	*2.4*	*2.3*
Euro area	*0.9*	*0.4*	*1.4*	*2.3*	*2.3*
Japan	*–0.3*	*2.7*	*2.4*	*2.0*	*2.0*
Import volume, % change					
World	*2.8*	*5.2*	*6.7*	*7.2*	*7.2*
United States	*3.3*	*3.7*	*6.8*	*4.8*	*4.5*
EU countries	*0.6*	*1.5*	*4.1*	*6.3*	*6.3*
Euro area	*0.1*	*1.4*	*4.1*	*6.3*	*6.4*
Japan	*2.0*	*4.7*	*4.5*	*4.9*	*4.7*
Imports of Finnish export markets	*2.6*	*4.7*	*6.4*	*7.3*	*7.3*

f = forecast
Source: Bank of Finland.

port and export growth will be substantially faster than growth in output. Exchange rate changes, primarily in respect of the dollar, will be partly reflected in the direction of trade flows. Their impact on world trade as a whole will, however, be fairly insignificant.

Export markets and export prices

Finland's export markets will grow over the next few years more or less in pace with the growth in world trade. Their growth will nevertheless be weakened by the euro area's below-average growth in imports. On the other hand, this will be compensated by import growth in the new EU member states and the transition economies. Finland's exports to these countries is equal to almost half the sum of exports to other countries in the euro area.

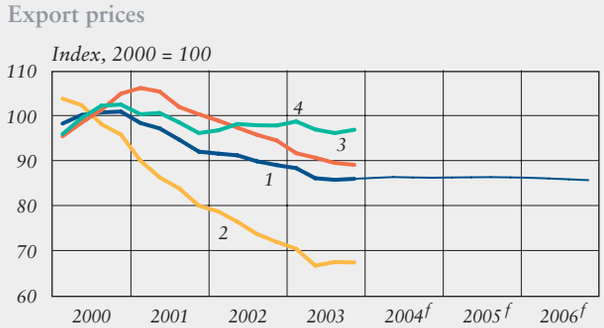
The dramatic exchange rate movements at the end of 2003 have been reflected in substantial changes in the dollar-denominated export prices of the industrialised nations. In contrast, export prices expressed in national currencies have in many countries been relatively stable. The euro-denominated export prices of Finland's competitors fell by an average of 6% last year, and a further fall of around 2% is estimated for this year. Thereafter, however, they can be expected to gradually rise again as demand grows and higher commodity prices are passed on to the prices of final goods. Given continued brisk world trade and low interest rates, the estimated pace of growth in export prices will be around 1½% in 2006. Even so, the pace of increase will be more moderate than in past years, reflecting increased competition in many sectors.

The prices of Finnish goods exports have been declining in many sectors for the past three years (Chart 33). In 2003 they fell by almost 4%. The delayed recovery in the world economy led to a situation in which many companies were unable to maintain their price margins by cutting output. The paper industry suffered particularly badly from this, and its prices fell further throughout last year. The rise in commodity prices that began with metals would now appear to be gradually spreading to pulp and paper products.

Export prices in the electronics sector fell substantially at the beginning of 2003, although the downward trend came to a halt in the second quarter. This exceptional trend continued for the rest of the year, and – contrary to previous experience – export prices remained at the same level as the beginning of the year. This is nevertheless expected to be a temporary halt, and export prices in the sector should continue to fall throughout the rest of the forecast peri-

Chart 33.

Export prices



1. *Total exports*
2. *Electronics industry*
3. *Paper industry*
4. *Other exports*

Sources: Statistics Finland and Bank of Finland.

od. However, the pace of the fall is expected to slow to around half the historical trend of over 10% per annum.

Declining export prices in the electronics sector will depress export prices for goods by around ½% this year. The pace of decline will slow a little in 2005–2006. At the same time as export prices continue to fall, import prices will begin to rise gently. In 2003 the terms of trade weakened by 4%. This year it will remain more or less constant, but will thereafter begin to deteriorate again, if less dramatically.

Exports

The 2% growth in Finnish goods exports last year was substantially less than the previous year. Viewed historically, the export performance of the electronics industry was extremely sluggish. In each quarter, last year's exports were well below the heights of autumn 2002, although exports for the year as a whole were up on the previous year. There is at present no significant growth in electronics output in Finland, and the forecast assumes that sectoral output will grow more rapidly abroad than at home. Forest industry exports, meanwhile, have remained at the same level for three years.

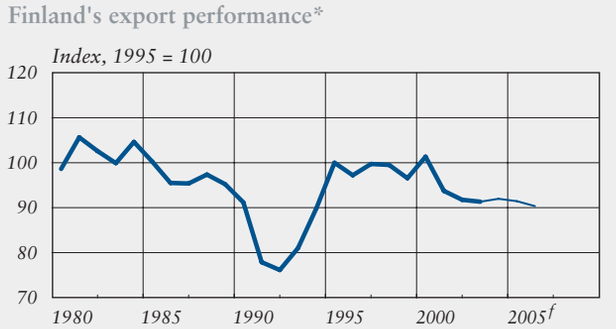
The recovery in the world economy will boost growth in goods exports to almost 5% this year. In 2005–2006 the pace of growth will already be a good 6%. Many industrial export products already contain a large service input – including design, servicing, maintenance and repair services – which will be of growing importance to the export sector. Measured growth in service exports is, however, even slower than growth in goods exports.

Finland's export performance is poor, in the sense that growth in exports is lagging behind growth in the export markets. Finnish exporters are thus losing market share, with export market growth outstripping export growth by 1½ percentage points this year, and by around 1 percentage point in 2005–2006. The strongest export market growth relates to goods that are not produced very much in Finland.

The structure of world trade has changed in recent years as a result of the growth in Southeast Asia. In common with the other industrialised nations, Finland's share of world trade will steadily shrink as the countries of Asia catch up on the developed world. Finland's exports should therefore be compared with those of the other industrialised nations or the euro area (Chart 34). Measured according to changes in export volume, Finland increased its market share relative to the other industrialised nations until 2002. Finnish exports

Chart 34.

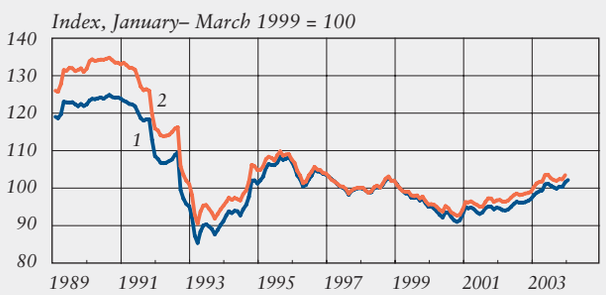
Finland's export performance*



** Value of Finnish exports / value of euro area exports.*
Sources: Eurostat and National Board of Customs.

Chart 35.

Finnish competitiveness indicators*



1. Nominal
2. Real
** Narrow indicators plus euro area. The real indicator is formed by deflating the nominal indicator by consumer prices.*
Source: Bank of Finland.

benefited from euro depreciation in 1999–2000. The euro has subsequently strengthened and Finland's competitiveness slightly declined (Chart 35), which has slowed growth in export volume. In terms of the value of exports, Finland has being losing market share to the other industrialised nations ever since 1995. The value of euro area exports has also grown more rapidly than the value of Finnish exports. The differences between the pace of growth in the volume and value of exports reflect differing trends in export prices. In contrast to most other industrialised nations, Finnish exports have predominantly been in sectors with strong productivity growth and steadily declining prices. A typical example are sectors with a substantial information technology element, in Finland's case particularly mobile communications. The weak trend in export prices has thus meant that Finnish exporters have been unable to increase their export income to the same extent as exporters in the other industrialised nations.

Current account

Finland's current account surplus shrank EUR 1.7 billion to EUR 11.9 billion in 2003. There was a EUR 1.7 billion deficit on services, while the deficit on income and current transfers grew to EUR 2.1 billion. The recovery in exports will slightly expand the surplus on goods and services this year, but recovery in import growth will prevent any further increase in 2005–2006.

The income account deficit deepened last year as a result of weaker earnings from outward direct investment. The deficit on the income account will shrink as the current account surplus reduces the level of foreign debt. The pace of shrinkage will, however, remain slow, as we can assume the earnings on outward direct investment and portfolio investment will be lower than the earnings on comparable inward investment. The current account surplus will accordingly shrink during the forecast period to just under 6% of GDP.

Box 3.

Asia as the engine of world growth

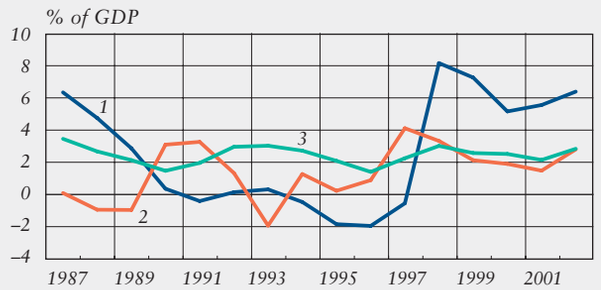
Large current account deficits have often been corrected by a steep drop in domestic demand and, by extension, in imports. This is why the present size of the US current account deficit is seen as threatening world growth. As a counterweight to the large US deficit, many Asian countries have been running large current account surpluses (Chart A). Could Asia perhaps become the new engine for the global economy in the event of a serious weakening of import demand in the United States?

As well as Japan and China, Asia's economically most important areas include the NIE countries (Newly Industrialized Economies) and the members of ASEAN 4. The former comprises South Korea, Hong Kong, Singapore and Taiwan, and the latter, the Philippines, Indonesia, Malaysia and Thailand. The Asian financial crisis of 1997–1998 hit the ASEAN 4 countries harder than the NIEs. China and Japan were only indirectly affected, with a reduction in their exports to the crisis-hit economies.

The financial crisis in Southeast Asia meant a weakening of the currencies of the affected countries and the diversion of international capital flows away from the region (Chart B). Investment activity in the crisis countries has since been very subdued, which goes a long way to explaining the cur-

Chart A.

Current account

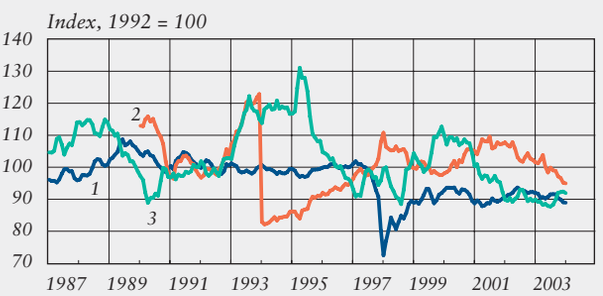


1. *NIE countries and ASEAN 4 countries*
2. *China*
3. *Japan*

Source: International Monetary Fund.

Chart B.

Real trade-weighted exchange rate index*



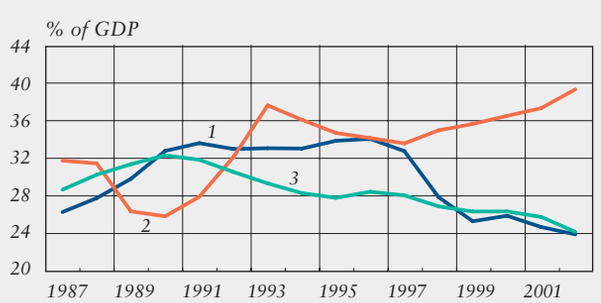
1. *NIE and ASEAN 4 countries*
2. *China*
3. *Japan*

** A rising curve indicates currency appreciation.*

Sources: J. P. Morgan and Bank of Finland calculations.

Chart C.

Investment ratio



1. *NIE and ASEAN 4 countries*
2. *China*
3. *Japan*

Sources: International Monetary Fund and Asian Development Bank.

rent account surpluses of these countries (Chart C). However, a low investment ratio and current account surpluses indicate the growth potential of the region.

The exchange rate policies pursued by the countries of Asia during the recent weakening of the dollar have served to restrict the growth of import demand in the region. Regional currencies have been held down with the help of relaxed monetary policy and large-scale interventions in the foreign exchange markets. There has been pressure for a real appreciation of the currencies in the region, which could come about either through a nominal appreciation or through an acceleration in the rate of inflation.

It has been suggested that a reduction in the current account deficit in the United States requires a reduction in the surpluses in Asia if US adjustment is to take place without seriously inhibiting growth in the world economy. Current account surpluses elsewhere are, after all, smaller than those in Asia.

In 2003, the combined current account surpluses of Japan, China, the NIE countries and the ASEAN 4 countries amounted to just under half the US deficit (Table A).[1] Relative to the size of these economies, however, the surpluses are so large that to balance them in the immediate years ahead would require much more rapid growth in domestic demand than is generally predicted at present. The Bank of Finland forecast envisages Asian growth remaining close to the average for recent years, nor will there be any major changes in the size of their current account surpluses relative to GDP.

Appreciation of the Asian currencies would assist the process of reducing the current account surpluses, but it would also be essential to considerably boost domestic demand especially in the NIE countries, the ASEAN 4 countries and Japan. There is so far no sign of such a development in the NIEs or the ASEAN 4 countries. In Japan, investment picked up somewhat last year, but there is still a long way to go before we can speak of a boom in domestic demand.

Asian economies and trade have grown rapidly over the past few years, if insufficiently to redress the imbalances in the world economy. There has been a particularly strong increase in intraregional trade as a result of the rapid growth in the Chinese economy. Moreover, although imports from outside the region have grown more slowly, here too the level of growth has been significant for the global economy. For example, euro area exports to Asia have in recent years grown in value by approximately the same amount as exports to the new accession countries, and much more than exports to the United States. In this respect Asia has already served as an engine for the global economy.

[1] *The combined current accounts of other Asian countries were approximately in balance.*

Table A.

Current account in 2003

	Japan	*China*	*NIEs*	*ASEAN 4*	*USA*
% of GDP	*2.8*	*1.4*	*7.2*	*4.4*	*–5.1*
USD billion	*113*	*19*	*76*	*23*	*–553*

Source: International Monetary Fund, World Economic Outlook, Autumn 2003.

Box 4.

Russia: strong import demand despite slowing output growth

In 2003, Russia experienced GDP growth of more than 7% (Chart A). This is 3 percentage points above what was generally forecast at the beginning of the year. This faster than expected pace of growth was due to higher world market prices for oil and other commodities. The oil and gas industry accounted for over a fifth of total output, with the sector's strong performance also having a knock-on effect on the entire economy. Russia's central government surplus is largely due to income from oil. Investment was up by 13% over the year. However, investment accounts for only 18% of GDP, which reflects more the level of a developed industrial country than the requirements of a developing economy.

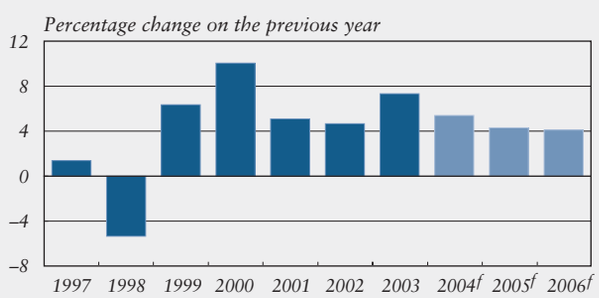
The Russian economy is vulnerable to fluctuations in world commodity prices. As a result of economic reforms and investment, however, growth is not dependent solely on the development of oil and other commodity prices. The forecast for the Russian economy over the next few years is based on the projection of an underlying long-term growth rate of around 4% per annum independent of changes in oil prices or exchange rates. The recent rise in oil prices will for a while provide some additional impetus to the Russian economy, but the strengthening real exchange rate for the rouble will gradually erode the country's price competitiveness. This is above all due to the increase in costs caused by an inflation rate well above that of competing countries, as there is no sign of any major changes in exchange rate policy that could affect the competitiveness of the Russian economy. As a result of weakening competitiveness, growth is expected to slow from over 5% in 2004 to close to 4% in 2006. The sensitivity of the Russian economy to fluctuations in energy prices is illustrated by the fact that if, for example, the oil price assumption is reduced from 28 to 20 dollars a barrel at the end of 2004, Russia's GDP growth in 2005 would be about 2 percentage points less than in the base scenario.

Despite slowing output growth, Russia's import demand remains strong. This reflects the opening up of the Russian economy, the strengthening of the real value of the rouble and an extremely strong current account, which ensures the continuation of strong liquidity. In 2003, Finland's share of total Russian imports was approximately 3%, and there have been no significant changes in our market share since 1998. Overall, almost 8% of Finnish exports go to Russia, making it the fifth largest export market, just after the United States and the UK.

Future developments in Russia will be strongly influenced by the growing importance of China. As well as its direct role as a purchaser of Russian energy and commodities, growing demand from China will also exert a key influence on the future price of these products on the world market. Meanwhile, China's share of Russian imports has rapidly doubled, increasing competition in the Russian market. Thus, Chinese output also poses a substantial challenge for Russian industry, which will have to find a role for itself between the high productivity of European industry and the extremely low production costs of its Chinese competitors.

Chart A.

Russian GDP



Sources: Goskomstat and Bank of Finland.

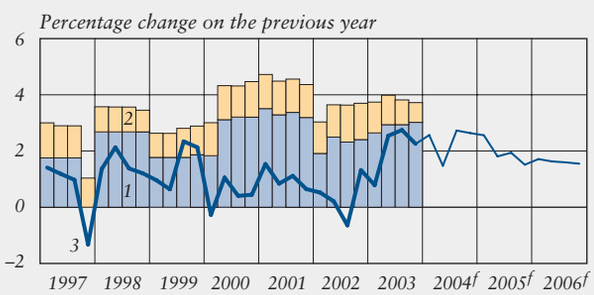
Costs and prices

Labour costs

Under the collective agreement currently in force, negotiated wages in Finland will rise 2.4% this year. Future rises are expected to be around the level of the increases negotiated in recent years. The rise in real labour costs during the present agreement period has been greater than expected, and future wage development will depend partly on the extent to which this is taken into account in the wage negotiations in autumn 2004. Another relevant issue is the attitude of the negotiating parties towards future inflation in a situation where at the moment of negotiation consumer price inflation is very subdued but set to accelerate, while producer prices are surrounded by a great deal of uncertainty due, amongst other factors, to the volatility of exchange rates. One of the key issues is whether the present position of the euro against the dollar will be viewed as long-term, or if there are clear expectations of further movement in exchange rates.

Chart 36.

Total national earnings

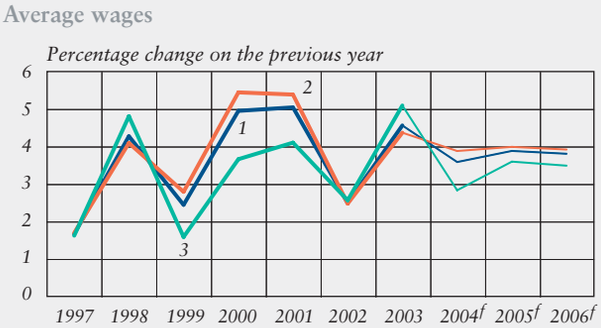


1. *Index of negotiated wages*
2. *Wage drift*
3. *Real earnings*

Sources: Statistics Finland and Bank of Finland.

Chart 37.

Average wages



1. *Total economy*
2. *Private sector*
3. *Public sector*

Sources: Statistics Finland and Bank of Finland.

Whole economy earnings rose almost 4% in 2003 (Chart 36). As a result of weak employment development and lower negotiated wage increases than in recent years the pace of earnings growth will slow this year to 3.2%. A moderate recovery in employment coupled with growing demand will, however, stimulate the pace of earnings growth to 3.6% by the end of the forecast period. The forecast assumes no further cuts in income tax during the forecast period apart from inflation adjustments, and thus no moderating effect on wage rises from taxation (Chart 37).

Growth in unit labour costs will slow from 1.7% last year to 1% in 2004 (Chart 38). Earnings growth will subsequently cause an increase in unit labour costs of a full 1½% in both 2005 and 2006. There is a considerable difference here between the public and private sectors. Public sector unit labour costs have grown by over 3% each year in the 2000s, and by almost 5% last year. In the private sector, in contrast, there was a reduction in unit labour costs in 2002, and growth of just ½% last year

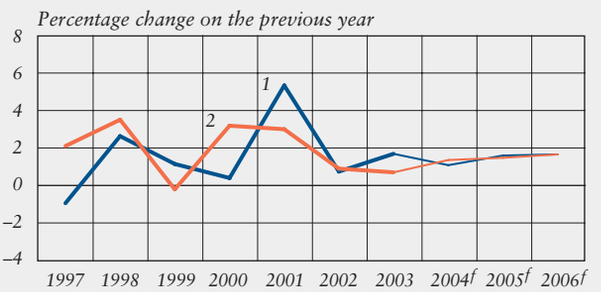
(Chart 39). These divergent trends will continue throughout the forecast period: in the private sector the pace of growth in unit labour costs will reach only around 1½% per annum, which contrasts with continued annual growth of over 3% in the public sector.

Despite last year's surprise growth in unit labour costs, whole economy unit labour costs have grown slightly more slowly in Finland than in the euro area as a whole. Unit labour costs in Finland are forecast to grow in 2004 at the same pace as the European Commission's forecast for growth in unit labour costs in the euro area. However, a gradual decline in competitiveness measured in terms of unit labour costs is forecast for the last two years of the forecast period, when unit labour costs in Finland will grow faster than in the euro area. If, as forecast, Finnish output prices fall behind the development of output prices in competing countries, more subdued growth in unit labour costs will be essential to preserve competitiveness.

In Finland, the share of GDP taken by labour has declined to such an extent that the share of value added taken by labour costs is smaller than it was in the early 1990s, and also below the long-term average. This trend in functional income distribution is due to several processes of structural change in different sectors of the economy all pushing in the same direction (see Box 5). The change that has taken place is probably permanent, given the decline in the competitiveness of labour-intensive output in Finland, in contrast to the ability of highly automated capital-intensive output to retain profitability. The situation can clearly not be corrected by large pay rises, as this would merely result in further loss of competitiveness and undermine employment. The required return on capital is no longer determined by domestic developments within Finland, but by the international markets.

Chart 38.

Labour costs and the price of production

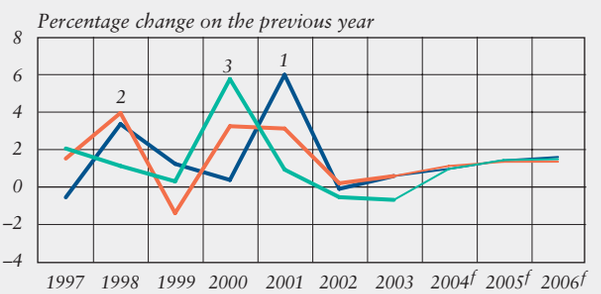


1. *Unit labour costs*
2. *Value-added deflator*

Sources: Statistics Finland and Bank of Finland.

Chart 39.

Labour costs and the price of production: the private sector



1. *Unit labour costs*
2. *Value-added deflator*
3. *Price of production*

Sources: Statistics Finland and Bank of Finland.

Box 5.

Functional income distribution in Finland

Functional income distribution in the Finnish economy, ie the division between labour costs and capital costs of the value added created in production, has fluctuated dramatically over the past twenty years. The share taken by labour grew throughout the 1980s and peaked in 1991, when labour costs accounted for almost 68% of the value added in the economy as a whole. The recession years then brought a steep decline in the share taken by labour costs, which would appear to have stabilised since 1998 at a level of around 56%. In the early years of the 2000s the share has been around 6 percentage points lower than the average for the 1980s (Chart A).

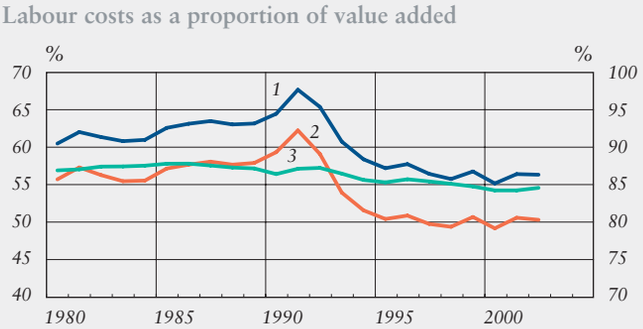
A similar trend has also been observable in other developed countries, if generally in a more muted form than in Finland. According to OECD statistics, the share of labour has fallen from the average for the 1980s most dramatically in Ireland, while, in addition to Finland, exceptionally strong drops have also been experienced in Spain and Denmark.

A sectoral analysis permits a more detailed breakdown of the factors lying behind the changing trend of income distribution. The reduction in the share of value added taken by labour costs derived from adding together data originally calculated at the subsectoral level is 5.5%, ie somewhat smaller than the reduction indicated in the figures for the economy as a whole.

The change observable at the macro level can be explained particularly by internal changes within a number of sectors and changes in the relative weightings between sectors. If these effects are removed from the figures, the share of value added taken by labour costs in the early years of the 2000s is almost the same as the average for the 1980s.

Chart A.

Labour costs as a proportion of value added



1. *Total economy (left-hand scale)*
2. *Private sector (left-hand scale)*
3. *Public sector (right-hand scale)*

Source: Statistics Finland.

The bulk of the shift in income distribution is due to five sector-specific factors. The decline in the share accruing to labour in the public sector, although less marked than what has occurred in the private sector, has nevertheless been substantial. The reason for the rise in the share of capital income in the public sector would seem to be primarily the change that has taken place in ownership policy: public institutions are now being managed more according to commercial criteria than the traditional principles of public service provision.

Another factor that has exerted a strong influence on income distribution over the economy as a whole has been growth and structural change in the electronics industry, which has tripled its share of GDP since the 1980s at the same time as its internal income distribution has seen a halving of the share of wage income. These changes reflect to a great extent the growth and profitability development of a single company, Nokia.

There has also been a marked shift in functional income distribution in the pulp and paper industry. The share of labour costs already began to decline in this sector in the 1970s, clearly as a result of automation within the sector. Paper machines have grown in size and their control systems become technically more advanced. At the same time the labour required for operating the

machines has been radically reduced. Employment in the industry has fallen from around 60,000 employees in the 1970s to approximately 37,000 today.

The fourth factor has been a reduction in the share of labour costs in the post and telecommunications sector, where the change has been every bit as dramatic as in electronics: as recently as the 1980s labour costs took over 65% of income in the sector, whereas today they account for only just over 30%. At the same time the sector has grown in importance to the national economy. The background to this change has been the transformation of postal and telecommunications activities from being primarily funded out of tax revenues to being normal commercially based business activities.

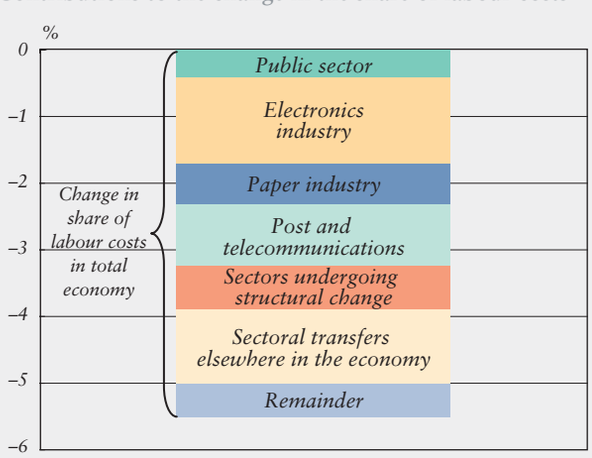
The final factor operating at a sectoral level has been the dramatic structural changes that have taken place in three sectors – the financial sector, the TCF sector (textiles, clothing, leather and footwear) and forestry – which have led to the collapse of employment in these sectors by over 40% since the 1980s. Following the banking crisis the financial sector went through a rigorous process of rationalisation, with the associated reduction in branches and customer service personnel fostering a capital-intensive structure in the sector. The TCF sector has remained labour-intensive, but its share of GDP collapsed after the end of bilateral trade with the Soviet Union. In timber harvesting, lumberjacks have been replaced by machines.

Taken together, the sector-specific factors outlined above explain almost 4 percentage points of the contraction in the share of labour costs across the economy as a whole (Chart B). A further full percentage point is explained by changes in the relative shares between the other subsectors of the private sector – ie the growth of capital-intensive sectors relative to labour-intensive sectors. The remaining, unexplained portion of the shift in functional income distribution at the level of the economy as a whole is according to subsectoral data a mere ½ of a percentage point.

The share of value added taken by labour costs has declined in almost all developed countries during the past twenty years. Thus, the shift in functional income distribution observed in Finland is part of a more general shift in income distribution internationally. The position of labour-intensive sectors, companies and production technologies in countries with high labour costs is becoming increasingly difficult, and the structure of output in these countries is gradually shifting in a more capital-intensive direction. In Finland, this is reflected in a dramatic reduction in employment levels in the affected sectors and the growing role of capital-intensive sectors in the Finnish economy. According to this interpretation there is no reason to expect functional income distribution to return to pre-recession levels.

Chart B.

Contributions to the change in the share of labour costs*



** From the 1980s to the 2000s.*
Sources: Statistics Finland and Bank of Finland calculations.

Commodity prices

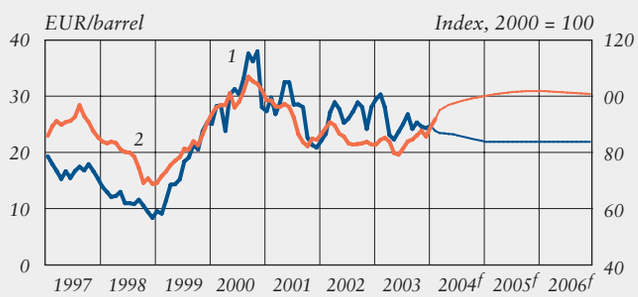
The dollar-denominated prices of industrial raw materials rose extremely rapidly in autumn 2003 as confidence in the cyclical upturn in the world economy was confirmed. The rise in euro-denominated prices was less dramatic, although was also a substantial rise in the euro prices of many metals (Chart 40). Besides the stronger expectations for growth in the industrialised nations, the dramatic increase in Chinese imports also contributed to these rising prices, especially in the case of metals. In addition, low interest rates have reduced the costs of inventory maintenance, thereby contributing to the increase in commodity prices.

The fastest phase of increase in the dollar prices of industrial raw materials is thought to be already over. By the end of 2004, prices will only be rising at a relatively moderate pace. Growth in the supply of commodities will over time further subdue the pace of price rises, and in 2006 prices are already expected to decline slightly in real terms.

The dollar price of crude oil has in recent months substantially exceeded the upper end of the OPEC target range. Brent has been selling at over USD 30 a barrel. The rise in oil prices has been the result of the combined effect of dollar depreciation and the recovery in the world economy. On the basis of oil futures, the price of oil is expected to gradually fall over the next few months. Thereafter, it is expected to remain at USD 28 a barrel from the beginning of 2005 until the end of the forecast period. This is USD 3 higher than suggested in the summer 2003 forecast and reflects the impact of the exchange rate and growth factors discussed above.

Chart 40.

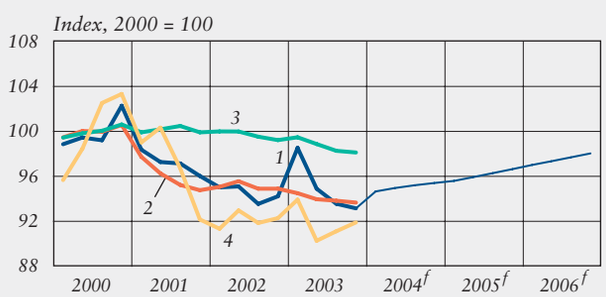
Commodity prices in euro



1. Crude oil (left-hand scale)
2. Industrial raw materials, HWWA Index (right-hand scale)
Sources: Bloomberg and HWWA Institute.

Chart 41.

Import prices



1. Goods and services
2. Capital goods
3. Consumer goods
4. Raw materials and intermediate goods
Sources: Statistics Finland and Bank of Finland.

Import prices

Goods import prices have declined almost continuously since the end of 2000 (Chart 41). This trend would appear to have been halted temporarily by the stabilising of the external value of the euro and the strong rise in commodity prices. In 2003 the price of goods imports declined a mere 0.1%, as the temporary

rise in the price of energy caused by the war in Iraq raised the average for the year. For the same reason there will be an average decline of ½% in the price of goods imports this year, too, despite the fact that prices have already begun to rise. The pace of this rise is forecast to increase to 1% next year, and to around 1.3% in 2006. Service import prices have fluctuated dramatically in recent years. Last year they rose almost 4% and are expected to continue to rise at around 2% per annum throughout the forecast period.

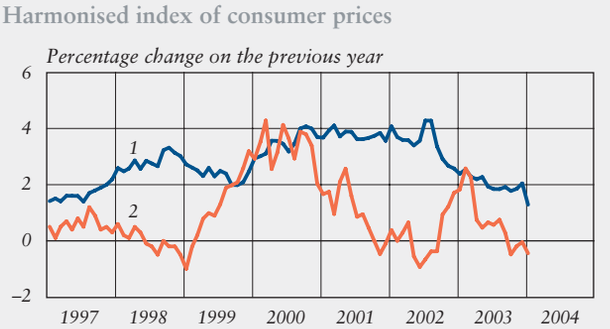
Costs and prices of final goods

The price of goods and services produced in Finland has fallen fully 4% since 2001 relative to the price of goods and services consumed. In other words, output prices measured according to the basic price of private sector output have declined in recent years relative to consumer prices measured according to the private consumption deflator. This is a worrying trend, as it means we will need more output to fund the same level of consumption. Behind this phenomenon lies a dramatic growth in productivity, primarily in the electronics industry, and the reflection of this in declining prices for final goods. Another background factor is the relatively new phenomenon of price deflation that has occurred in more traditional sectors. As electronics output goes almost entirely for export, the trend is particularly noticeable in export prices, which have declined almost 20% since 2001 relative to the consumption deflator. Since the beginning of the present decade the price trend in traditional export sectors has also been declining. According to the forecast there is unlikely to be a turnaround in this trend in the near future, although the forecast assumptions do include a substantial slowing in the pace of export price decline in the electronics sector and a cautious rise in prices in the traditional export sectors.

Despite a recent deceleration, the rise in service prices included within the consumer price index has been substantially faster than the rise in the prices of industrial goods (Chart 42). On the other hand, earnings development – measured by the index of average earnings of wage earners – has been slightly faster in industry than in service sectors. As real labour costs in industry have risen strongly in recent years, the preservation of competitiveness has relied entirely on productivity growth. Thus, unit labour costs in industry have remained more or less unchanged in recent years, while in services they have risen. The downside of productivity growth has been the impact on industrial employment, which already began to decline in 2002.

Chart 42.

Harmonised index of consumer prices



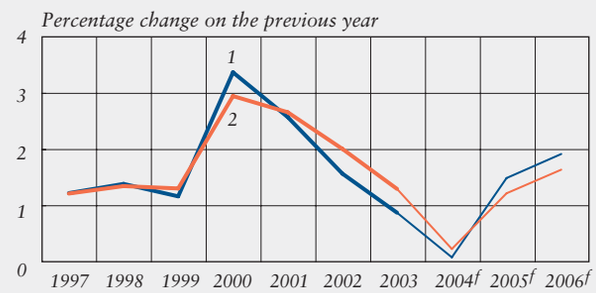
1. Services
2. Industrial products
Source: Statistics Finland.

Consumer prices

Consumer price inflation has already been decelerating for over three years now (Chart 43). In 2000, the pace of inflation accelerated to 4%, while in February of this year the annual change in consumer prices was a mere 0.1%. Measured by the harmonised index of consumer prices, the inflation rate in February was 0.4 %. This was well below the equivalent measure of euro area inflation, which stood at 1.6%.

Chart 43.

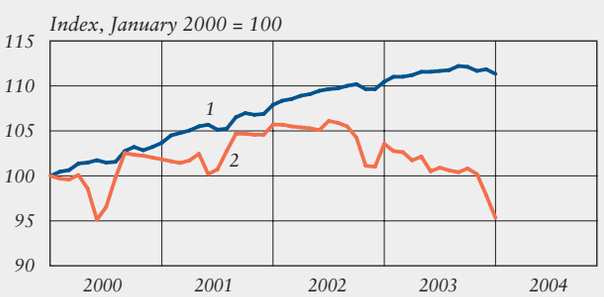
Inflation



1. Consumer price index (CPI)
2. Harmonised index of consumer prices (HICP)
Sources: Statistics Finland and Bank of Finland.

Chart 44.

Service prices



1. Services in the harmonised index of consumer prices
2. Telephone and telefax services (incl. equipment) in the harmonised index of consumer prices
Sources: Statistics Finland and Bank of Finland calculations.

There are a number of different factors behind the slower pace of inflation: the easing of inflationary pressures from import prices, tougher competition in the service sector and the reduction in car tax.

The inflationary pressures from import prices have been reduced particularly by the appreciation of the euro that began in early 2002. In addition, declining international demand led to lower commodity prices until the end of 2003. The easing of import inflation is seen clearly in the fact that the rise in the prices of industrial products included in the harmonised index of consumer prices has eased in step with the appreciation of the euro. Declining international demand and strong productivity growth particularly outside the euro area already resulted in negative annual inflation for industrial products in mid-2003.

Competition has increased particularly in the Finnish retail trade, air transport and telecommunications. The arrival on the market of foreign grocery chains and new airlines allied to the stiffer competition brought by the transferability of mobile phone numbers between different operators have brought benefits to consumers in the form of lower prices and a greater range of products. The statistics suggest that the opportunity for consumers to transfer their mobile phone numbers induced even major operators to lower their prices during the Christmas season. The price of phone calls (and of telephone equipment) have fallen within a year by approximately 7%. This has caused a deceleration in the annual change in the price of services from an average growth

of 2.1% in 2003 to just 1.3% in February 2004 (Chart 44).

The Finnish Government has responded to tax competition in recent years by reducing indirect taxes on a number of consumer goods. The reduction in car tax and the removal of tax discrimination against the import of used cars have reduced the prices of private cars. The reduction in alcohol tax that came into effect at the beginning of March 2004 is reflected particularly in lower prices for beer and strong alcoholic beverages. The consumer price index last performed like this in 1995, when food prices fell following Finland's accession to the European Union. The forecast assesses the impact on the overall index of the reduction in alcohol tax at around 0.5 percentage points in 2004. The impact could also be felt in service prices as a result of the effect on prices charged in restaurants and bars. The annual change in the consumer price index for 2004 is forecast at 0.1%.

When the impact of extraordinary factors passes and import prices begin to rise, inflation will accelerate, producing a forecast rate of consumer price inflation of 1.5% in 2005. The increase in domestic costs – particularly wages – and rising housing costs will cause a further acceleration in inflation to 1.9% in 2006. Inflation according to the harmonised index of consumer prices will slow to as little as 0.2% in 2004 and thereafter pick up again to 1.2% in 2005 and 1.6% in 2006. Compared with the European Commission's price forecast of October 2003[1], Finnish inflation in 2004–2005 will be slightly slower than inflation in the euro area, which, according to the Commission forecast, will be 2.0% in 2004 and 1.7% in 2005.

[1] European Commission, *Economic Forecasts, Autumn 2003, European Economy 5/2003*.

Forecast summary and risk assessment

International economy

The long-awaited cyclical recovery in the world economy finally occurred during the course of 2003, with growth being driven by the United States and several countries in Asia. In some respects the turnaround has been even stronger than expected and has laid a firm foundation for growth in 2004. Although the global recovery is expected to continue, there is no immediate prospect of a particularly strong period of cyclical growth. This is despite the recent localised incidence of exceptionally strong growth in both the United States and Asia. Uncertainty over growth continuing beyond the immediate future has not disappeared, and major imbalances still remain unresolved, which will subdue the pace of recovery.

Euro area growth has been limited by appreciation of the euro and sluggish domestic demand in several large member states. The euro area economy is, however, expected to gradually recover as world growth gathers momentum, corporate indebtedness declines and employment gradually improves. EU enlargement is expected to boost growth in the whole euro area.

US growth has been brisk, supported by low interest rates, tax cuts and strong productivity growth. Growth will also be boosted in 2004 by the depreciation of the dollar. In the United States, growth in domestic demand will probably focus more on investment than consumption. The long-term outlook is restricted by the level of household debt and the size of the federal budget deficit.

The Japanese economy has recovered more strongly than expected, with exports to the rest of Asia and increased investment supporting regional growth. The positive trend is forecast to continue in the years ahead, if levelling out somewhat due to the still unresolved basic problems in the economy. Even so, Japan is well placed in the next few years to finally escape the deflationary spiral that has long plagued its economy.

The forecast for the economies of Asia outside Japan is for continued brisk growth, driven particularly by the strength of growth in China. The rise of Asia is shifting the centre of gravity in the world economy ever more clearly to the Asia-Pacific region. However, increased intraregional trade means that only part of the increased import demand in the region will support growth in the euro area and the rest of the world. Asia will also attract direct investment and other investment from the rest of the world.

The emergence of the Asian economies as interesting investment prospects is part of the process of globalisation that has recently stimulated exceptionally vigorous debate all over the world. Recent trade policy moves by the United States and disputes with the euro area as well as the postponement of the next round of WTO trade talks have increased the sense of uncertainty over the rules of world trade. A halt to the process of world trade liberalisation would seriously undermine the growth potential of Finland and the entire euro area.

The risks of weaker-than-forecast world growth are for the most part widely recognised: they include the problems surrounding the US federal deficits and the indebtedness of the US

economy in general. It is possible that American households will respond to their increased debt and weakening public finances more strongly than has been assumed in the forecast and significantly raise their level of savings. On the other hand, resolution of the United States' problems could be initiated by the financial markets, if long-term interest rates and the external value of the dollar begin to react to continued US indebtedness. In both cases the effects on the rest of the world economy would be considerable. Further weakening of the dollar and rising long-term interest rates would put a strain particularly on the fragile economy of the euro area, but could also have a detrimental effect on many countries of Asia, and especially on Japan.

Another, very different sort of risk of weaker-than-forecast growth relates to the present low level of nominal and real interest rates, the abundance of available global liquidity and the opening up of the Chinese economy. Both Chinese and foreign companies are currently taking advantage of cheap finance, cheap labour and optimistic expectations of future demand to build new capacity in China. There is a heightened risk of overinvestment and overheating in the Chinese economy. Overheating could lead to a serious crisis due to the weakness of China's financial system. The repercussions could also be felt in many traditional sectors in the industrialised nations, as companies operating in China would attempt to dump their excess output at low prices in other markets. The world economy would develop more evenly if foreign investment were directed more into other countries in Asia, as they appear to have more scope than China for growth in domestic demand.

The tentativeness of the forecast for the world economy also leaves space for positive surprises. It is possible that we have overestimated the growth-impeding impact of indebtedness and other structural problems. In the United States, in particular, major improvements in productivity and cost savings have recently enabled companies to considerably strengthen their balance sheets. There could, therefore, be a positive surprise in the shape of a strong recovery in investment. It is also possible that we have overestimated the impact of indebtedness on household demand for consumption in the United States, and that the slowdown in US consumption growth will be less than forecast.

Finland's growth outlook

All things considered, Finland has emerged well from the extended international recession. In all sectors of the economy, balance sheets have remained fairly strong, and the prospects for growth in domestic demand in the immediate years ahead look bright. The Bank of Finland forecasts GDP growth of 2.5–3% per annum for the next few years. Growth will be supported by sustained, relatively strong household consumption, the gradual stimulus to the export sector from the improving world economy and a gradual recovery in investment.

Consumption grew in 2003, boosted particularly by car sales, but supported also by exceptionally positive real income development, low real interest

Table 4.

Forecast summary

Demand and supply 2002–2006 (2000 prices)

	2002	2003	2004f	2005f	2006f
%-change on previous year					
Gross domestic product	*2.3*	*1.9*	*2.6*	*2.6*	*2.8*
Imports	*1.9*	*0.9*	*3.9*	*6.4*	*5.4*
Exports	*5.1*	*1.3*	*4.9*	*5.9*	*5.9*
Private consumption	*1.5*	*3.6*	*2.8*	*2.7*	*2.2*
Public consumption	*3.8*	*0.7*	*1.0*	*0.9*	*0.9*
Private fixed investment	*–4.6*	*–3.8*	*1.9*	*3.3*	*3.9*
Public investment	*6.6*	*6.5*	*–1.1*	*–2.9*	*–0.8*
Inventory change + stat discrepancy, % of previous year's total demand	*–0.1*	*0.1*	*0.0*	*0.1*	*0.1*
Total demand	*2.2*	*1.6*	*2.9*	*3.6*	*3.5*
Final domestic demand	*0.8*	*1.8*	*2.0*	*2.4*	*2.2*

Key economic indicators

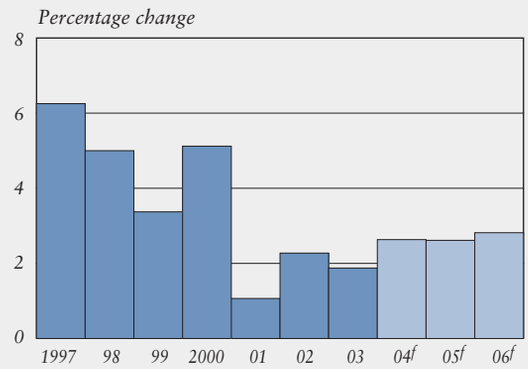
	2002	2003	2004f	2005f	2006f
%-change on previous year					
Harmonised index of consumer prices	*2.0*	*1.3*	*0.2*	*1.2*	*1.6*
Consumer price index	*1.6*	*0.9*	*0.1*	*1.5*	*1.9*
Wage and salary earnings	*3.5*	*3.8*	*3.2*	*3.6*	*3.6*
Labour productivity	*1.6*	*2.5*	*2.6*	*2.3*	*2.3*
Unit labour costs	*0.7*	*1.7*	*1.1*	*1.6*	*1.7*
Number of employed	*0.2*	*–0.3*	*–0.6*	*0.5*	*0.8*
Employment rate, 15–64-year-olds, %	*67.7*	*67.3*	*66.9*	*67.1*	*67.6*
Unemployment rate, %	*9.1*	*9.0*	*9.0*	*8.8*	*8.5*
Export prices of goods and services	*–4.8*	*–3.2*	*–0.1*	*0.1*	*0.0*
Terms of trade	*–2.5*	*–3.8*	*0.2*	*–1.1*	*–1.6*
% of GDP, national accounts					
Ratio of taxes to GDP	*45.8*	*44.5*	*44.0*	*43.6*	*43.6*
General government net lending	*4.3*	*2.1*	*2.0*	*1.8*	*2.3*
General government debt (EMU definition)	*42.6*	*45.3*	*44.7*	*44.2*	*43.1*
Goods account	*9.7*	*8.3*	*8.6*	*8.3*	*8.2*
Current account	*7.5*	*5.5*	*6.0*	*5.9*	*5.8*
Avg interest rate on deposit banks' new loans, %	*4.2*	*3.8*	*3.4*	*3.9*	*4.4*

f = forecast
Sources: Statistics Finland and Bank of Finland.

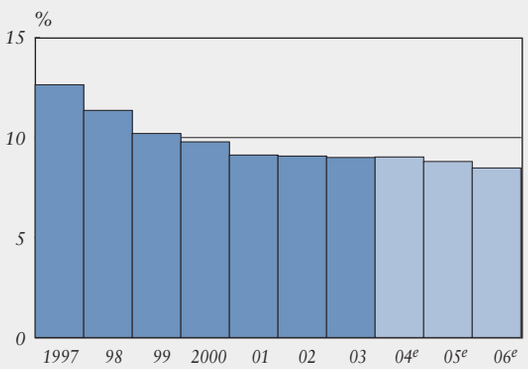
Chart 45.

Key economic indicators

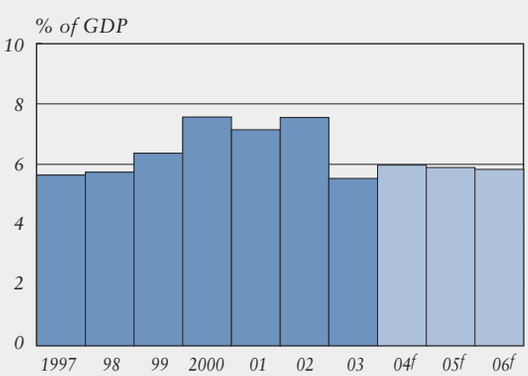
Gross domestic product



Unemployment rate

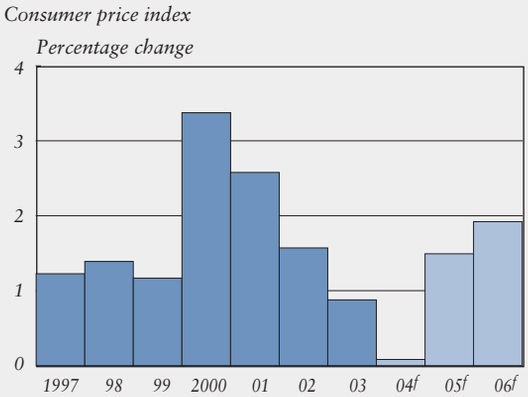


Current account

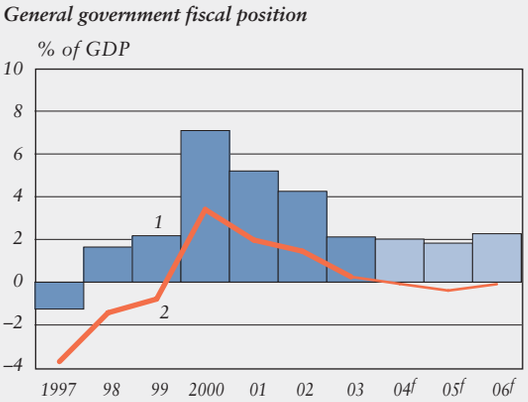


Inflation

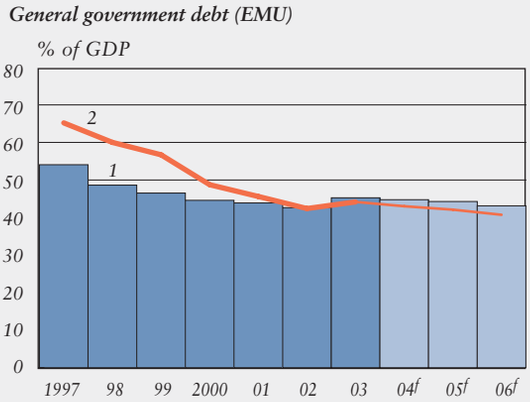
Consumer price index



General government fiscal position



General government debt (EMU)



1. *Public sector*
2. *Central government*

Sources: Statistics Finland and Bank of Finland.

rates and continued strong household confidence. Brisk growth in real incomes will continue to sustain consumption through 2004, even without the fading impact of extraordinary factors such as car sales. Private consumption is forecast to grow by a good 2.5% in 2004 and 2005, after which it will level off at annual growth of fully 2%. Consumption growth will be subdued by waning growth in real disposable incomes, deceleration in the pace of increase in housing prices, and rising interest rates.

Export volume in goods and services will grow 5–6% per annum during the forecast period, which is actually a fairly brisk pace of growth, even with fully 7% growth in the export markets. Even so, Finland's expert performance over the next few years is expected to be relatively sluggish, and measured in terms of value Finnish exporters will lose market share as their prices lose ground compared with the export prices of the other industrialised nations.

General government finances should remain stable throughout the forecast period. The general government fiscal surplus is expected to remain around 2% of GDP. Although general government debt will grow as a result of the central and local government deficits, relative to GDP the debt will shrink. Reductions in income, alcohol and corporation tax will result in a decline in general government revenue relative to GDP. The tax cuts will lower the tax ratio by approximately 1 percentage point in 2004 and 2005. There will be only moderate growth in general government expenditure: consumption expenditure will grow in real terms by around 1% per annum on average, while other categories of expenditure will not grow at all in real terms during the forecast period. Strict spending limits and persistent deficits will limit growth in central government and local government expenditure respectively. All in all, however, fiscal policy will support growth this year and next, but will thereafter be neutral.

This fairly positive overall picture is, however, overshadowed by a number of factors relating to the prospects for growth. The main problem in Finland's recent economic performance has been declining employment, and this will continue through 2004. The upturn in the world economy has not yet been reflected in Finland in the manner expected. Industrial employment, in particular, has been in decline for almost two years, and the overall employment rate for 2006 is forecast at under 68%. Meanwhile, the reduction in the unemployment rate is rather slow.

The rapid growth in productivity has not been reflected as hoped in improved employment. Productivity growth has focused on just a few sectors, and has not stimulated increased corporate investment. Preliminary calculations suggest little impact on employment from improvements in either labour or capital productivity. Labour supply factors, such as a rise in the average retirement age or a narrowing in the tax wedge, are central to positive employment development.

In addition to euro appreciation, Finnish industry has also suffered from a production structure that is poorly adapted to the present growth in the

Box 6.

The impact of euro appreciation on the Finnish economy

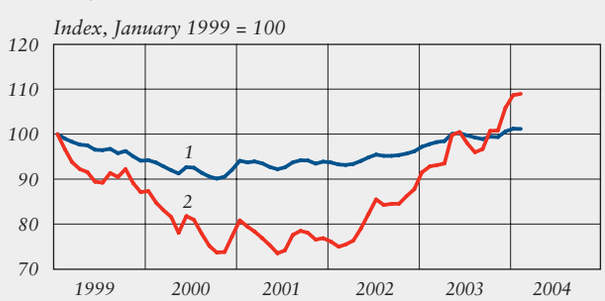
The appreciation of the euro, particularly against the US dollar, is seen as inhibiting the recovery of euro area exports. The value of the euro has already risen above the level it held at the launch of monetary union. Meanwhile, growth in the euro area has been distinctly lacklustre. The depreciation of the dollar and currencies linked to it against the euro has also had a negative impact on the competitiveness of the Finnish economy. Even though the changes in Finnish competitiveness since the introduction of the euro have been fairly moderate as measured by the trade-weighted competitiveness indicator, competitiveness has now returned to the level prior to monetary union (Chart A). The impact of euro appreciation on the Finnish economy depends greatly on the extent to which companies are able to remain profitable by adjusting their output and costs to take account of currency appreciation.

The point of departure for the present assessment is the currency appreciation and interest rate reductions that occurred in 2003. The impact of these changes over the period 2003–2006 is assessed using the Bank of Finland's macroeconomic forecast of September 2003 as the baseline for comparison.[1] We can assume a 5% strengthening in Finland's narrow trade-weighted indicator of competitiveness supplemented with euro area countries, as actually occurred between December 2002 and January 2004.[2] Over the same period, the euro rose 24% against the dollar, and its nominal effective exchange rate by 13%. Euro appreciation has in turn allowed the European Central Bank to lower its policy rate. In December 2002 the ECB cut its key policy rate (the minimum rate for main refinancing operations) to 2.75%, and then in two further stages to 2.0%, at which level it has been since June 2003. This has been taken into account in the calculation by assuming a level for the short-term market rate at the end of the first year of 50 basis points, and for the second and third years 75 basis points lower than in the baseline. The overall economic impact of euro appreciation and the interest rate cuts – emphasising channels of macroeconomic adjustment and the scale of impacts – is assessed using BOFMINI, an aggregative version of the Bank of Finland's BOF5 model.[3]

As, in this calculation, we assume the exchange rate change to be permanent, its impact will be gradually passed on to domestic prices – assuming other factors remain unchanged. If we assume the exchange rate impact on import and export prices in the context of monetary union will be 50% over four years, with an appreciation in the euro of 5% it will take approximately four years for Finland's euro-denominated foreign trade prices and, by extension, domestic prices to come down by 2.5 %. Euro appreciation means the possibility

Chart A.

Exchange rate



1. Finland's competitiveness indicator (narrow plus euro area)
2. Value of the euro against the dollar
Sources: European Central Bank and Bank of Finland.

[1] *'The Bank of Finland's macroeconomic forecast 2003–2005', Bank of Finland Bulletin, Vol. 77 No. 3/2003, p. 1–16.*

[2] *The national trade-weighted currency indices for countries in the euro area are called competitiveness indicators. See Kajanoja, L. 'The new competitiveness indicators compiled by the Bank of Finland', Bank of Finland Bulletin, Vol. 74 No. 1/2000, p. 21–25.*

[3] *Willman, A., Kortelainen, M., Männistö, H.-L. and Tujula, M., 'The BOF5 macroeconomic model of Finland, structure and dynamic microfoundations', Economic Modelling 17 (2000), p. 275–303. A list of the equations used in the model is provided in Willman, A., Kortelainen, M., Männistö, H.-L. and Tujula M., The BOF5 Macroeconomic Model of Finland: Structure and Equations, Bank of Finland Discussion Papers 10/98.*

Table A.

Impact of currency appreciation*

	2003	2004	2005	2006
GDP growth	*–0.2*	*–0.4*	*–0.1*	*0.0*
Inflation	*–0.1*	*–0.5*	*–0.7*	*–0.6*

** The nominal effective exchange rate appreciates 5% from the beginning of 2003 and short-term interest rates come down 0.75 percentage points during the year. Impact on GDP growth and the harmonised index of consumer prices (in percentage points) compared with the forecast prepared in September 2003.*

f = forecast
Source: Bank of Finland.

of a cut in interest rates, which under monetary union will also affect Finland, thus reducing the pressures for an adjustment in price levels compared with the pre-EMU period. Besides the impact of import prices, adjustment of domestic prices will result above all from adjustments in export prices and wages that will gradually restore competitiveness to its earlier level.

The effects on inflation and growth are illustrated in table A. The rate of inflation will ease by around half a percentage point, if much less in the first year. There will be a slowing in growth of 0.2–0.4 percentage points in the first two years primarily as a result of a weakening of trading competitiveness. By the third year most of the adjustment will already have taken place.

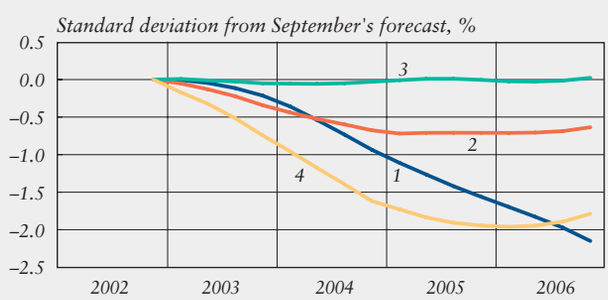
Euro appreciation causes a decline in the competitiveness of both exports and domestic production competing with imports. There will be a considerable deceleration in export growth, volume contracting cumulatively by almost 2% in the third year compared with the base scenario – with the value of exports contracting by 4%. Import prices will become more competitive, but the effect of more sluggish domestic demand and exports in reducing import demand will dominate. As a result, there will also be some deceleration in the pace of import growth.

Companies will reduce their euro-denominated export prices almost in proportion to the reduction in their import costs. Consequently, the reduction in their export prices will be smaller than the reduction in the euro-denominated prices of their competitors. Some of the price disturbance will thus be compensated by lower export prices, and only the remainder will be reflected in a loss of market share. Companies can seek either to protect their margins or their market share, depending on the competitive situation in their sector. Price formation is linked to past and expected future production costs and competitors' prices in the export markets. As wages are generally relatively inflexible in a downwards direction, production costs will not initially come down. In order to reduce the negative effect on profitability, companies will seek greater production efficiency, which will in turn lead to a reduction in labour input.

Companies will also reduce fixed investment as export prospects deteriorate. There will be no rise in real interest rate expectations, as our assessment already takes into account the reduction in nominal interest rates that occurred in 2003. If there had been no reaction on the part of nominal interest rates, the rise in real interest rates would have inhibited investment in 2004–2006 as well.

Chart B.

Effects of euro appreciation*



1. Harmonised index of consumer prices
2. GDP volume
3. Volume of private consumption
4. Volume of exports
** The nominal effective exchange rate appreciates 5% from the beginning of 2003 and short-term interest rates come down 0.75 percentage points during the year.*
Source: Bank of Finland.

Households are not so susceptible to the effects of exchange rate changes, although there will be some increase in unemployment and the unemployment rate will gradually rise by a few percentage points. The impact is softened to some degree by the assumption that the real level of public expenditure – such as unemployment benefit per capita of unemployed – will be sustained at the level of the baseline. There will accordingly be a slight weakening in the general government budgetary position. The most significant impact on households will, however, come from the fact that consumer prices will come down as a result of the fall in import prices and the reduction in production costs. The real purchasing power of households' disposable income will thus remain unchanged or even improve slightly. The effect on real house prices will also be negligible, as lower interest rates will serve to keep prices as buoyant as in the baseline. With household income and wealth development secured, private consumption and investment in housing construction will grow more or less as rapidly as in the base assessment.

In our calculation we assume that the number of hours worked will also be adjusted at the same pace as output, thus leaving productivity unchanged. Based on the estimated equations of the BOFMINI model, the adjustment of labour input could actually be more rapid. With our assumption, the gross operational surplus will initially contract relatively more than aggregate wages. Thus, the reduction in corporate profitability will initially operate as a buffer, and household income will weaken less. The assumptions over wage inflexibility and productivity mean a slower return of price competitiveness, output and employment to their original levels.

The development of the economy in 2003 corresponds well to the first-year development outlined in our simulation. Households and the domestic sector have fared well despite the lacklustre performance of exports and sluggishness in corporate investment. Inflation has been low, but unemployment has remained stubbornly unchanged. Lower interest rates have supported household demand in the housing market.

Our calculation allows us to forecast the impact of euro appreciation on the Finnish economy (Chart B). The effects of the appreciation that has already taken place will be strongest in 2004 and 2005. Inflation will slow further and remain subdued in the short term. The stronger currency will hamper exports, investment in productive capacity and improvement in the employment situation. Corporate profitability will be weakened and moderate the real impact, although companies will also adjust their labour input. Despite this, household income and wealth development will be fairly close to the baseline path. Although low interest rates will support investment, there will be a deceleration in the recovery of non-residential investment. GDP growth will slow down by around half a percentage point in 2004, but thereafter the recent currency appreciation will not weaken growth any further.

The impact assessment presented here is based on the euro appreciation and interest rate reductions that occurred in 2003. The results are also broadly valid if projected into the future, insofar as the euro is expected to appreciate further still.

The rather slow adjustment described in our calculation is partly due to the fact that wage adjustment will be hampered at least partially by the collective agreements currently in force. Companies can tinker temporarily with their price margins in order to retain market share. In contrast, the calculation allows only limited scope for increasing margins even temporarily in order to secure profitability, because competition will become stiffer both in the export market and, via imports, also in the domestic market. One of the key issues is how ready companies will be to adjust their labour input in the event of further currency appreciation – and how much this would reduce the number of employed. Particularly if currency appreciation is connected with considerably weaker international growth, contrary to what we have assumed in this calculation, the adjustment of labour input would probably be more rapid than presented here.

world economy. Barometers indicate that industrial output is weak and order books are well below normal, although expectations for the future have brightened somewhat. The weak price trend is nevertheless expected to continue. The outlook within the industrial SME sector also remains fairly bleak. Overall, the recovery in industrial confidence has been more muted in Finland than elsewhere in the euro area, and it would appear that, contrary to previous experience, Finland has been slow to benefit from the return to growth.

The outlook for industry represents a continuation of the worrying structural trend already visible in the Finnish economy for many years. Growth is dependent on services and the public sector, while growth in industry has stagnated. Although there are numerous competitive companies operating in Finland that are well managed by international standards, the volume of industrial output has not grown for the past three years. This also applies to information and communications technology. Moreover, market prices are steadily declining in the key sectors of Finnish industry, with the result that performance in terms of output value has been even weaker than volume growth. The nominal value added of Finnish industry has declined almost 7% from 2000 to 2003, and the pace of decline has merely increased in recent years. Elsewhere in the euro area the value of exports since 2000 has developed substantially more positively than in Finland. Finnish exporters have lost market share not just to the emerging economies, but also to competitors in the industrialised nations.

The problems of Finnish industry are reflected in the forecast as a slow recovery in fixed investment and a slow but steady decline in export prices throughout the forecast period. Fixed investment will grow only around 4.5% in 2006. In contrast, the strong growth in housing investment will continue, if much more slowly towards the end of the forecast period. The terms of trade will decline by an average of almost 1% per annum. The consequences of an even weaker trend in the terms of trade are assessed below, beginning on page 60.

Output value has declined in both the paper and wood products industry and the metal and engineering industries. In these sectors the weakening trend both in output and especially in employment could continue even more strongly than expected. This contrasts with the electronics industry, which has managed for the most part to retain high-value-added activities within Finland, even if components are imported and the greater part of production is carried out abroad.

The future direction of the Finnish economy will depend on the following factors. Will companies in other sectors be able to apply a similar operating concept to the electronics sector, and will Finland be able to attract corporate head offices, research and development activities, business services and other high-value-added activities at the same time as production increasingly shifts to wherever it can be carried out most cheaply?

Inflation

Measured according to the harmonised index of consumer prices, inflation eased in 2003 around 1 percentage point to 1.3%. The pace was subdued by euro appreciation and a slowing in the pace of rise in import prices. The rise in service prices was subdued by increased competition in air transport and communications. Industrial goods showed the impact of the reduction in car tax. Slower inflation has boosted growth in real incomes and in this way supported domestic demand. The short-term inflation outlook to the end of 2004 is presented in the attached fan chart (Chart 46). The use of a fan chart illustrates the uncertainty surrounding inflation.[1]

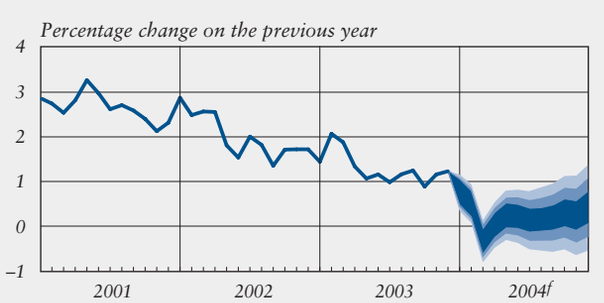
The outlook for the next few years is for a continuation of sluggish inflation. On the other hand, Finland is not facing any danger of deflation. The reduction of taxes on certain products will cause a decline in relative prices, but the impact on inflation will be non-recurring. The decline in general prices will thus be temporary, and is not a sign of threatening deflation. According to the forecast, the pace of price inflation will ease temporarily to 0.1% in 2004, from where it will normalise in the next two years to around 2%. Towards the end of the forecast period, price inflation will be accelerate as a result of rising import prices, unit labour costs and housing costs.

There has been a slow rise in the prices of goods and services. In contrast, the rise in housing prices has accelerated, due largely to low interest rates, which have maintained the brisk demand in the housing market. Housing construction has increased, but the increase in supply has been insufficient to halt the rise in prices. The strengthening economy and continued low interest rates will sustain a slightly rising trend in housing prices both this year and next. Thus, there is a clear risk of overheating in the housing market. This represents a risk in two ways. Even a small price bubble would, on bursting, cause a decline in prices, which would undermine household confidence, particularly if it were to coincide with a rise in interest rates. Rising housing prices could also increase the pressures for a rise in the prices of goods and services and in wages.

There will be very little price pressure from import prices during the forecast period. Admittedly, the price of oil could cause surprises in either direction – as has always been the case. The prices of other commodities have also risen recently, and a dramatic rise in commodity

Chart 46.

Short-term inflation forecast



Sources: Statistics Finland and Bank of Finland.

[1] Inflation is forecast to fall within the darkest area of the fan with 50% probability. When the area is extended to encompass the surrounding slightly lighter area, harmonised inflation should fall within this area with 75% probability. The probability of inflation falling within the whole area of the fan is 90%.

prices traditionally associated with cyclical upturns cannot be ruled out. More substantial risks, however, surround the prices of industrial goods. These could decline more than forecast as a result of increased competition, productivity growth and the transfer of production to countries with lower costs.

The alternative of weaker export development

According to the outlook prefigured in the forecast, Finnish competitiveness will face challenges over the next few years. This applies equally to exports and domestic production competing with imports as well as interregional competition for investment. According to the forecast, the international economic trend will be fairly favourable, which will ease adjustment to the stiffer competition resulting from globalisation. However, as the risk of weaker-than-forecast international growth cannot be ruled out, it would also make sense to review the pressures on the Finnish economy to adjust in the event of such an alternative.

Table 5.

Combined impact of shocks under weaker scenario*

	2004	*2005*	*2006*
GDP growth	*–0.4*	*–0.6*	*–0.2*
Inflation	*–0.3*	*–0.7*	*–0.9*
Growth of national income	*–0.9*	*–1.4*	*–1.4*

** The nominal effective exchange rate appreciates 5% and short-term interest rates come down 0.75 percentage points during 2004. The volume of Finnish export markets declines altogether 1.5% in 2004–2005. In addition, Finland's export prices decline altogether 3% in 2004–2006. Impacts on the pace of change (percentage points) in real GDP, national income and the harmonised index of consumer prices compared with the Bank of Finland's new forecast presented in this article.*
f = forecast
Source: Bank of Finland.

We shall next illustrate some of the possible challenges facing the Finnish economy through a scenario calculated with the help of the BOFMINI model.[2] We assume, contrary to the forecast, that the euro will continue to appreciate, and also that there will be a 5% non-transitory rise in Finland's nominal competitiveness indicator (trade-weighted exchange rate index) in 2004, and that this will have an impact on import and export prices, and, via wage adjustment, also on domestic prices in Finland, as in the calculation presented in box 6. We further assume that appreciation of the euro against the dollar will coincide with slower international growth. In the scenario, imports by Finland's export markets initially grow more slowly than in the forecast and remain 1.5% less than in the forecast in 2005–2006. We assume, as in box 6, that euro appreciation will provide scope for a step-by-step reduction in the ECB policy rate of altogether 0.75 percentage points, and that lower interest rates would help the euro area adjust to slower international growth and weaker competitiveness.

In this scenario, one or more of the key sectors for Finland's foreign trade would face stiffer competition to such an extent that the development of export prices would be substantially weaker than forecast. There could be several causes of such a disturbance, including

[2] Willman, A., Kortelainen, M., Männistö, H.-L. and Tujula, M., 'The BOF5 macroeconomic model of Finland, structure and dynamic microfoundations', Economic Modelling 17 (2000), p. 275–303. A list of the equations used in the model is provided in Willman, A., Kortelainen, M., Männistö, H.-L. and Tujula M., *The BOF5 Macroeconomic Model of Finland: Structure and Equations*. Bank of Finland Discussion Papers 10/98.

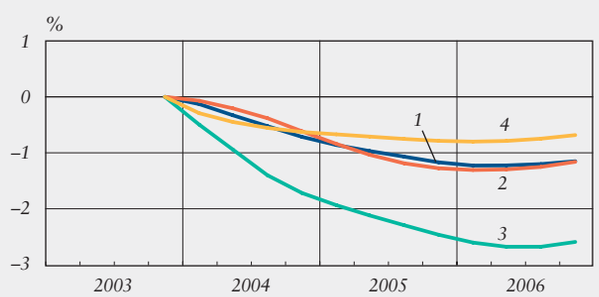
an increase in competing supply, a technological advantage gained by competitors or an unforeseen change in consumer preferences. The key factor from the perspective of the scenario is that Finnish export prices would develop more weakly than forecast without this being attributable to quicker-than-forecast productivity growth in Finland, and without lower prices enabling Finnish companies to expand their market share. We can assume an export price development in 2004–2006 of 1% per annum weaker than forecast. In the scenario, Finland would face a substantial negative terms-of-trade shock like this in addition to the exchange rate and export demand disturbances described above for the entire euro area.

The results of the scenario compared with the forecast are presented in table 5. GDP growth in 2004–2006 would be slower than in the forecast. The impact would be around ½ a percentage point in 2004–2005, and slightly less in 2006. Inflation would be considerably more subdued, particularly in 2005–2006. Thus, GDP growth would be just over 2%, and inflation 1% per annum. In order to more clearly illustrate the significance of the shock to domestic income formation, the impact on national income has been included in the table. In the scenario, the growth in national income – and at the same time nominal GDP – is around 1 percentage point slower in 2004 and almost 1½ percentage points slower in 2005–2006 than in the forecast.

If wages are relatively inflexible in the Finnish economy, as assumed in the scenario, there would be only a slow recovery in price competitiveness via more moderate wages development than envisaged in the forecast. Weakening corporate profitability would initially serve as a buffer moderating the real impact on the national economy, but companies would also adjust their costs and improve their weakened profitability in many different ways. The scenario assumes that companies would seek to maintain profitability development in line with the forecast even in conditions of weaker demand. Compared with the forecast, there would be substantially weaker employment throughout the forecast period: the unemployment rate would not fall slowly, as in the forecast, but rise to around 9½%. Direct investment would also be more sluggish than in the forecast, with poor profitability in export output and sluggish export demand undermining the attractiveness of investment, which would also be hampered by weak income financing. (The combined impact on growth and employment of all the shocks in the scenario are presented in chart 47.)

Chart 47.

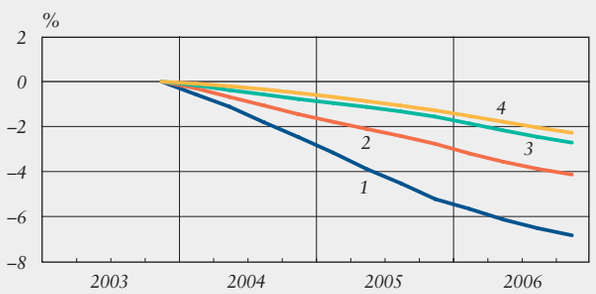
GDP, private demand and employment relative to the forecast*



1. GDP volume
2. Number of employed
3. Volume of private investment
4. Volume of private consumption
** Standard deviation from the forecast.*
Source: Bank of Finland.

Chart 48.

Prices and income relative to the forecast*



1. Value of exports
2. National income
3. Nominal household disposable income
4. Harmonised index of consumer prices
** Standard deviation from the forecast.*
Source: Bank of Finland.

If we examine the combined impact of the scenario's shocks on prices and incomes, the key factor explaining the substantial reduction in national income is the value of exports, which would decline against the forecast throughout the entire forecast period (Chart 48). By the end of the forecast period in 2006, the volume of exports would be over 2 % lower than in the forecast, but, due to the decline in export prices, the value of exports would be over 6% lower. This weak export performance would be reflected in domestic income formation, depressing both labour and capital income. Wages drift and, finally, negotiated pay increases would then adjust in order to restore output competitiveness. Growth in wage-earners' income would also be subdued by weakening employment. In the scenario, the real impact would be greatest in 2006, after which growth in export volume would not decelerate any further against the forecast.

In the scenario, households' nominal disposable income would decline more than consumer prices relative to the forecast, which means that the development of real incomes would also be somewhat weaker than forecast. In addition, the decelerating pace of growth in private consumption would be influenced by higher unemployment, which would make consumers more cautious. The slower rise in housing prices would mean a weakening of the wealth impact. All in all, consumption growth would slow in the scenario by around ½ a percentage point in 2004, and a little further in 2005. Housing demand would weaken compared with the forecast, but not enough to cause a decline in housing prices.

The general government budgetary position would weaken in the scenario in that the general government surplus relative to GDP would be around ½% smaller than in the forecast, in other words below 2%. The private sector financial surplus would also decline by the same amount, meaning the current account surplus relative to GDP, which remains stable in the forecast, would begin to shrink. This would be the case despite the fact that the volume of total domestic demand in the scenario is approximately 1% smaller than in the forecast.

Deriving growth and inflation expectations from financial market prices

Lauri Kajanoja
Economist
Economics Department

Expectations over future macroeconomic development affect the prices of financial market instruments. However, no single price can directly reveal the pace of GDP growth or inflation expectations. In order to gauge these expectations, we need more than just financial market prices; we also need to apply the methods of economics.

An enormous amount of information on the factors influencing future macroeconomic development filters through into market prices. Whether market expectations are right or wrong, soundly based or essentially unfounded, they will nevertheless influence the behaviour of economic agents. Therefore, knowledge of market expectations is essential to understanding the economy.

The present article presents a new approach to assessing financial market expectations over future long-term GDP growth and inflation. The method presented uses data on share prices, interest rates and price quotations for equity index futures. These data are continuously available when the markets are open and can therefore be used to gauge market expectations in real time. This approach allows us to augment the picture gained from other measurements of market expectations, such as the prices of index-linked bonds. The method is applied here to measure growth and inflation expectations for the euro area and the United States.[1]

[1] For more detail on the method see Kajanoja, L., *Extracting growth and inflation expectations from financial market data.* Bank of Finland Discussion Papers 2/2004.

Method's roots in economic theory

The present article sets out to gauge expectations over macroeconomic development using the methods and insights of economics. The measurement of long-term expectations is based on three assumptions (see attached appendix).

The first assumption deals with what a share's market price reveals about expected dividend growth. The assumption is that share prices represent the discounted present value of expected dividends. The market price of a share is such that its expected return is equal to the return from a risk-free investment of the same size to which has been added what is known as an 'equity premium'. The equity premium can be thought of as compensation for the risk inherent in not being able to know in advance the precise dividend a company will pay on its shares.

The second assumption deals with the relation between the expected paces of dividend and GDP growth. The basic premise is that the expected long-term growth in dividends paid by all companies in the economy should be approximately the same as the expected long-term growth in GDP. However, not all companies have a publicly quoted market price. Here we can only rely on existing share indices and the assumption that there is some sort of connection between the expected long-term growth rates for GDP and for the dividends paid by indexed companies. The precise nature of this connection is a matter to be determined empirically.

The third assumption is that there is a connection between long-term real

interest rates and expected long-term growth in real GDP. This connection can be justified by the additional assumption that GDP can be expected over the long term to grow at the same pace as consumption. The connection between interest rates and consumption is, in turn, based on the fact that interest rates determine the price differential between current and future consumption. The higher the interest rate, the greater the return on savings. Refraining from consumption today makes it possible to consume more in the future. Interest rates must therefore be compatible with the expected growth in consumption. Where this is not the case, savings will either increase or decrease, resulting in a change in interest rates.[2]

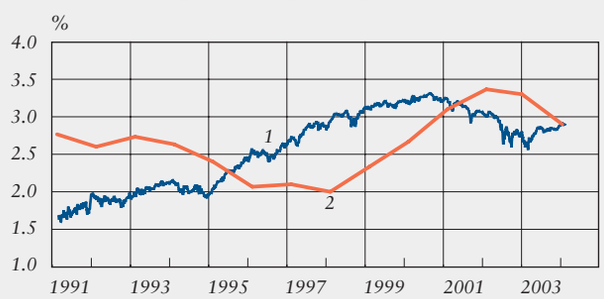
In the method presented here, the future is divided into two periods: the 'near future' and the 'long term'. In practice, the near future means the next 12 months. Here we are trying to measure expectations over the long term, not short-term expectations linked to the immediate phase of the economic cycle. Share prices reflect both short-term and long-term expectations. Therefore, expected dividend growth in the short term is measured separately with the help of equity index futures.

The elements presented above can be combined to produce a framework for calculating market expectations. Interest rates of different lengths of maturity, the share index dividend yield ratio (D/P ratio, or dividends paid relative to the value of the share index) and price quotations for equity index futures are then fed into the framework, which uses them to generate estimates of long-term expectations for GDP growth and inflation. The share indices used are, for the United States, the S&P 500, and, for the euro area, the DJ Euro Stoxx 50.

Applying the calculation framework in practice requires the setting of numerical values for its parameters. This means defining factors such as the

Chart 1.

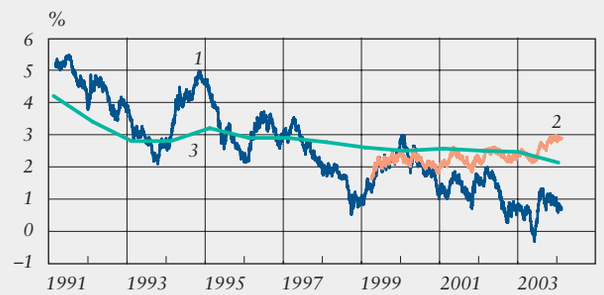
United States: expected long-term growth



1. Expected long-term growth in GDP
2. Congressional Budget Office forecast for growth 3–5 years ahead
Sources: Congressional Budget Office and Bank of Finland calculations.

Chart 2.

United States: expected long-term inflation



1. Expected long-term inflation
2. Break-even inflation rate derived from bonds maturing in 2029
3. Congressional Budget Office forecast for inflation 3–5 years ahead
Sources: Congressional Budget Office, Bloomberg and Bank of Finland calculations.

[2] In economics, the connection proposed here between interest rates and expected growth in consumption corresponds to the consumption Euler equation.

precise interdependency between real interest rates and GDP growth. This, in turn, means answering the question of how much the expectation for long-term growth has risen in the event of a one percentage point rise in long-term real interest rates. Setting the parameter values involves the use of both limits derived from economic theory and statistical procedures.[3] Use is made of published long-term growth and inflation forecasts. The result is two separate calculation frameworks: one for the euro area and one for the United States.

Growth expectations peaked in 2000, inflation expectations subdued

Long-term growth and inflation expectations derived from financial market prices are presented in charts 1, 2, 3 and 4. Expectations for the euro area can only be calculated from 1999 on, as there are no available price quotations for equity index futures before that date.

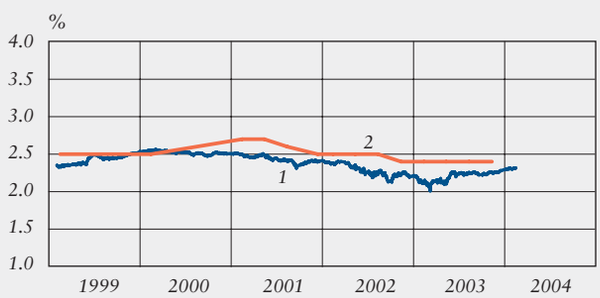
Long-term GDP growth expectations for the United States derived from financial market prices rose during the second half of the 1990s (Chart 1). This is hardly surprising, as there was an acceleration in labour productivity growth in the United States at that time, and estimates of the future pace of productivity growth were fairly generally adjusted upwards. Following the slight weakening in growth expectations that began in 2000, the expected pace of growth settled at approximately 2.8% in the second half of 2003. In the euro area, too, growth expectations peaked in 2000 (Chart 3). According to our calculation framework, the expected long-term pace of growth in euro area GDP now stands at approximately 2.3%.

Charts 1 and 3 also present forecasts for long-term growth in GDP. The movements depicted are in part the same as the expectations derived from market prices, but the weakening trend sets in at a later date. The development

[3] Both estimation and calibration methods are used in defining the parameters.

Chart 3.

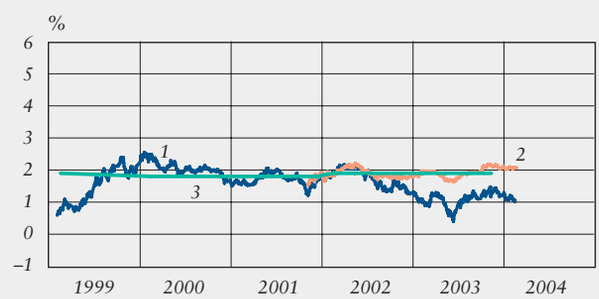
Euro area: expected long-term growth



1. Expected long-term growth in GDP
2. ECB Survey of Professional Forecasters, forecast for growth 5 years ahead
Sources: European Central Bank and Bank of Finland calculations.

Chart 4.

Euro area: expected long-term inflation



1. Exptected long-term inflation
2. Break-even inflation rate derived from bonds maturing in 2012
3. ECB Survey of Professional Forecasters, forecast for growth 5 years ahead
Sources: European Central Bank, Bloomberg and Bank of Finland calculations.

of growth expectations measured here has been strongly influenced by the development of share prices.

Long-term inflation expectations are presented in charts 2 and 4. Expectations for US inflation have over the past ten years shifted gradually in the direction of slower inflation. The annual rise in US consumer prices now stands at around 2%, when in the early 1990s it was still in the region of 3–6%. As with growth expectations, our calculation framework yields much more moderate long-term inflation expectations at present for both the United States and the euro area than in 2000.

The development of inflation expectations derived from the prices of index-linked bonds has partly matched the direction of inflation expectations produced by the calculation framework presented here. However, recent inflation expectations based on index-linked bonds have been greater in both the euro area and the United States (Charts 2 and 4).

Are long-term interest rates too low?

It is impossible to know precisely what the markets' 'real expectations' actually are. Market participants have different expectations. At best, prices reflect some sort of weighted averages of the expectations of the different participants. It is also impossible to say for sure which of the various representations of the expectations will be closest to this weighted average: one of the measurements presented in the charts, or some other measurement? The values generated by the calculation framework presented here are only as good as the assumptions and empirical estimates on which the framework is based.

The recent low level of inflation expectations derived from financial market prices (Charts 2 and 4) is a consequence of the low level of interest rates. The inflation expectations in the framework are derived from both interest rates and share prices. Low inflation expectations thus mean that interest rates are low in comparison with the level of share prices. If we are to take the calculation framework presented here seriously, we can draw one or more of the following three conclusions from the low level of inflation expectations for both the euro area and the United States: 1) The long-term pace of inflation expected by the markets is now in reality slower than in the long-term inflation forecasts published by various commentators. 2) Shares remain over-priced in relation to expected GDP growth. 3) The present level of long-term interest rates does not for some reason fully reflect inflation expectations.

Appendix

Equations in the calculation framework

The price of a share P_t is assumed to be the discounted sum of expected dividends, or

$$P_t = \sum_{j=1}^{\infty} \frac{D_{t+j|t}}{(1 + i_{j,t} + \omega)^j} \qquad (1)$$

In equation (1) the symbol $D_{t+j|t}$ represents the expectation of period t regarding the dividend to be paid in period $t+j$, while $i_{j,t}$ represents the risk-free interest rate for period t under maturity j. The symbol ω represents the equity premium, which is assumed not to change over time.

The following connection is assumed between dividends and the long-term pace of growth in GDP:

$$n_t - \pi_t = \alpha + \beta \cdot g_t \qquad (2)$$

In equation (2) the symbol n_t represents the expectation of period t regarding the nominal long-term pace of dividend growth. The symbol π_t correspondingly represents the long-term pace of inflation and g_t the real long-term pace of GDP growth. The symbols α and β represent temporally unchanging parameters.

The following connection is assumed between the long-term real interest rate and the expected real long-term pace of GDP growth:

$$i_{LR|t} - \pi_t = \rho + \lambda \cdot g_t \qquad (3)$$

In equation (3) the symbol $i_{LR|t}$ represents the long-term interest rate. The symbols ρ and λ represent temporally unchanging parameters. Equation (3) can be understood as a linearised consumption Euler equation, if we additionally assume that the expected long-term pace of growth in consumption is the same as growth in GDP. In that case λ represents the inverse of the intertemporal elasticity of substitution.

The expected short-term nominal pace of growth in dividends is measured with the help of equity index futures. In addition, the framework also uses an approximation of the shape of the yield curve and of the shape of the corresponding 'yield curve' for the expected dividend growth. These approximations are used in combining equations (1), (2) and (3) to produce a system of two equations, with expected growth g_t and expected inflation π_t on the left-hand side. On the right-hand side are parameters whose values are defined partly by estimating and partly by calibration, and observable empirical variables. When their values are fed into the right-hand side of the equation, the left-hand side indicates the growth and inflation expectations presented in charts 1, 2, 3 and 4.

The US current account deficit

Mika Kortelainen
Economist
Economics Department

One of the main topics of concern in recent debate over economic policy has been the growing current account deficit in the United States. In practice, this means the United States is constantly moving deeper into debt to the rest of the world. On the other hand, the rest of the world has been willing to finance the US deficit and invest in US dollar-denominated financial assets instead of, for example, investing in their own domestic markets.

The US current account deficit has grown in recent years and currently stands at approximately 5% of GDP (Chart 1). The deficit stems largely from the trade account, which has been strongly in the red. The current account deficit has increased US net foreign debt until it is now equal to approximately 29% of GDP. This equates to around 300% of the value of the country's exports in goods and services. On the other hand, the weight of US debt is lessened by the fact that outward investment from the United States to the rest of the world yields a higher return on average than inward investment in the US market. Thus, the US investment income balance (interest and dividends paid) is, at least so far, in surplus. If the United States continues to accumulate further foreign debt, however, the interest on this will in the future contribute to a further deepening of the current account deficit.

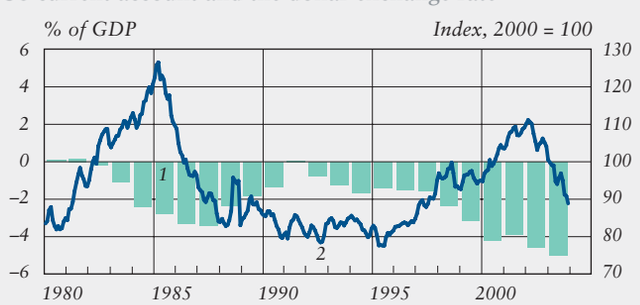
Has the US current account deficit grown too large? As the current account deficit is at the same time the difference between domestic savings and investment, this question can also be put as follows: Can the United States' present consumption and investment demand be sustained at the current levels of debt and capital? We may further ask what will happen if investors in the rest of the world are no longer willing to finance the US deficit. What consequences would this have for exchange rates and for the economy in the United States and around the world?

We can seek answers to these questions by applying an expanded version of the EDGE model developed by the Bank of Finland[1] and adapted here to handle material from both the United States and the euro area. As, in reality, the world economy includes economic regions other than the United States and the euro area, the calculations presented are merely indicative. One

[1] EDGE is a dynamic general equilibrium model calibrated for the euro area. An account of the model is given in Kortelainen (2002). For the purpose of analysing the interdependencies between the euro area and the rest of the world, the model has been expanded by the addition of a model calibrated for US data. See Tarkka and Kortelainen (2004) (forthcoming).

Chart 1.

US current account and the dollar exchange rate



1. Current account (left-hand scale)
2. Real effective exchange rate (right-hand scale)
Sources: Bureau of Economic Analysis and International Monetary Fund.

source of imprecision is the fact that the weight given to the US economy in the model is greater than its actual weight in the world economy. The calculations nevertheless illustrate the effects of US economic adjustment on the rest of the world economy.

A sustainable current account deficit

It is not easy to give a straightforward answer to the question of when a current account deficit is too large. An answer to this question requires a conception of how much of the deficit is a temporary consequence of economic imbalances, and how much is more permanent, in other words sustainable over the long term. The US deficit could be a long-term phenomenon if US growth is more rapid than growth in the rest of the world. Different rates of growth stem from different demographic patterns and productivity development. More rapid population growth and stronger productivity growth mean a higher sustainable level of current account deficit.

We can get a reasonable picture of expected differences in population growth from the United Nations' most recent assessments of world population development.[2] The decisive issue, however, is the assumption we make as to expected population growth in the rest of the world. The difference between the GDP-weighted population growth of the rest of the world (essentially Europe and Japan) and that of the United States is over 0.5 percentage points to the benefit of the latter. This demographic difference explains almost one percentage point of the US current account deficit.

Assessing the differences in productivity between the United States and the rest of the world would require public forecasts extending far into the future. But no such forecasts are available. IMF and OECD assessments of the productivity difference between the United States and all other industrialised nations is 0.5–1 percentage points to the benefit of the United States over approximately the past ten years.[3]

The GDP-weighted differences in population growth and productivity development between the United States and the rest of the world suggest that a sustainable US current account deficit could be around half the present deficit.

Adjustment of the current account deficit

For the sake of argument we can assume that the United States' present 5% current account deficit is approximately twice the size of a sustainable deficit as calculated in different ways. In other words, at least half the present deficit is temporary. Next, we can ask what processes could bring the deficit down to a sustainable level. As there are numerous possible processes that could trigger adjustment, it is important to consider whether the different processes would lead to radically different paths of adjustment.

[2] United Nations (2003).

[3] IMF (2003) and OECD (2003).

Among other factors, the speed and form of the adjustment process will depend on the response of monetary policy. In these sorts of calculation, it is impossible to avoid making simple and fairly mechanical assumptions as to how monetary policy will respond to changes in the economy. In the present calculation we have assumed that the policy interest rate (the short-term money market rate) will respond both in the United States and in the rest of the world according to the Taylor rule. This rule, which is generally used nowadays in applied economic analysis to describe the 'normal' response of monetary policy, assumes that interest rates are determined by how far the pace of inflation differs from the target (here assumed to be 2%) and how large the output gap is.[4] Including the output gap in the monetary-policy decision rule moderates interest rate movements and introduces a forward-looking element to the setting of interest rates, because demand pressure on the commodity and labour markets is one of the factors influencing future inflation.

Here, we examine more closely two different types of change that could cause the US current account deficit to adjust towards a sustainable level. These are (a) a rise in the level of household savings in the United States and (b) a dwindling willingness on the part of international investors to retain holdings of dollar-denominated assets. In our calculations, these changes are implemented on such a large scale as to almost halve the US current account deficit.

In the first calculation we assume that US households' view of their future (and thus their long-term consumption opportunities) will become more pessimistic. This would lead them to increase their level of saving. In the model calculation this is taken into account by lowering households' time preference rate (consumption discount factor) by 0.9 percentage points. This has a direct impact on how US households in the model discount their future income and consumption.

According to the results of this calculation, an increase of 3 percentage points in the US household saving ratio would halve the current account deficit from its present level within two years (Table 1, column a). The adjustment would also involve a lowering of US interest rates. GDP would be only marginally reduced, as both fixed investment and exports would grow, compensating for the contraction in consumer demand. There would also be a marked deceleration in inflation, which justifies the cut in interest rates.

As a consequence of this savings-driven adjustment, there would be little if any change in GDP outside the United States in the first two years. There would be a substantial reduction in exports to the United States, but at the

[4] The Taylor rule is often written in the form:
$R = r^* + \pi + \mu_1 (\pi - \pi^*) + \mu_2 \tilde{y}$.
where R, r^*, π, π^* and $\tilde{y}$ are the nominal interest rate, the natural real interest rate, the pace of inflation, the inflation target and the deviation of current output from long-term potential output. The policy parameters μ_1 and μ_2 are positive and are both 0.5 in Taylor's estimate. See Taylor (1993). In the Bank of Finland's EDGE model the output deviation from long-term potential output is replaced by the deviation of the present unemployment rate from the long-term equilibrium rate of unemployment.

same time a marked increase in consumption and fixed investment. This is a consequence of the strong downward trend in interest rates associated with this particular adjustment alternative. As the US current account deficit contracts, the current account surplus of the rest of the world would also contract in tandem with it. Under this alternative, the real effective dollar exchange rate would weaken 10% in the first two years.

In the second calculation we assume a dwindling willingness on the part of international investors to retain holdings of dollar-denominated assets. Technically this calculation has been carried out by raising the risk premium on dollar investments required by international investors to 3.3 %, from which level it would come down in stages and finally disappear in five years.

According to the results of this calculation, the effective dollar exchange rate would weaken nominally by almost 22%, and in real terms, too, by over 10%, in the first two years (Table 1, column b). The US current account deficit relative to GDP would contract by 2 percentage points, almost half. This calculation also produces a vigorous increase in the American household saving ratio and a corresponding drop in private consumption. Rising interest rates, a direct consequence of the higher risk premium on the dollar, would mean a fall in fixed investments in the United States. The weakening dollar would increase net exports, which in turn would boost US GDP, but only slightly. By reducing domestic demand, the rise in interest rates would help to facilitate adjustment of the current account deficit.

In contrast to the previous calculation, this alternative would have a considerable impact on the pace of inflation. The interest rate response would

Table 1.

Dynamic adjustment of the US current account deficit*

	(a) US household saving ratio increases	*(b) Dollar risk premium increases*
United States		
Current account, % of GDP	*2.0*	*2.0*
GDP, %	*–0.3*	*0.2*
Private consumption, %	*–6.0*	*–3.4*
Private fixed investment, %	*3.3*	*–3.5*
Household saving ratio, % points	*2.9*	*4.3*
Inflation (GDP deflator), % points	*–1.6*	*2.8*
Nominal interest rate, % points	*–1.7*	*4.9*
Real effective exchange rate, %	*9.7*	*10.4*
Nominal effective exchange rate, %	*10.0*	*21.5*
Rest of the world		
Current account, % of GDP	*–2.0*	*–2.0*
GDP, %	*0.2*	*–0.2*
Private consumption, %	*4.1*	*3.5*
Private fixed investment, %	*2.8*	*3.6*
Household saving ratio, % points	*–3.0*	*–4.7*
Inflation (GDP deflator), % points	*–0.4*	*–2.8*
Nominal interest rate, % points	*–1.4*	*–5.0*

** Author's own baseline in the first two years.*
Source: Deviation levels (%) relative to calculations.

therefore also be sizeable. The dramatic weakening of the dollar would increase import prices in the United States and, by extension, inflation, despite the rise in interest rates. At the same time, import prices in the rest of the world would fall, reducing inflation to the same extent it would rise in the United States. If the fall in the dollar were to happen all at once, as is the assumption under this alternative, the fall in inflation in the rest of the world would be so steep that it would most probably lead to deflation. The fall in interest rates produced by this model is so large that outside the United States a zero nominal interest rate floor would probably become a binding constraint. GDP in the rest of the world declines only slightly in this calculation, as the increase in consumption and investment compensates for the contraction in net exports. In respect of total output, however, the picture is not quite so favourable if the world outside the United States were to end up with deflation and a binding zero interest rate floor, which according to the calculation seems probable.

Which of the above scenarios is the more favourable, and which the more likely? In the first alternative the adjustment of the US current account deficit towards a sustainable level occurs through adjustments in economic fundamentals, in that American households decide to consume less and save more. In this alternative the adjustment of the economy would appear to be both fluid and effective. If, on the other hand, adjustment of the current account deficit were to take place via the agency of the international financial markets through a rise in the risk premium on the dollar, the change would be dramatic and would also cause considerable pressures on monetary policy in both the United States and the rest of the world. Outside the United States, there would be a serious risk of deflation. Although an increase in the saving ratio would be a welcome development, it is unlikely. The household saving ratio has long been on a downward trajectory, a trend that even the recent dramatic price fluctuations on the share markets have done nothing to arrest.[5]

The model calculations inevitably contain numerous simplifications. These include the assumptions that changes in exchange rates are passed on directly to import prices and changes in import prices are similarly passed on to final product prices in the domestic market. In practice, this is not necessarily the case. Thus, in the short term, the impact of exchange rates on inflationary pressures could be smaller.

The outcomes of the calculations are also strongly influenced by the price flexibilities in foreign trade assumed in the model. As is well known, estimating such flexibilities from historical data is difficult, and they also tend to vary with time. In the above presentation, price flexibility in import demand is assumed to be –1.1 in both areas. Stronger price flexibility would result in much smaller exchange rate reactions. Nevertheless, the results presented above in respect of exchange rate

[5] Mann (2002), p. 143–144.

reactions match fairly precisely the results achieved by other researchers.[6]

Other possible channels of adjustment

A rise in the saving ratio of American households or an unwillingness on the part of international investors to invest in the American market are not the only possible channels through which the US current account deficit could adjust towards a sustainable level. Other possible channels within the United States itself include the tightening of fiscal policy, a weakening in the outlook for productivity growth or an increased yield requirement for equity investments.

In carrying out the calculations relating to these alternative adjustment processes we noticed that a tightening of US fiscal policy on any realistic scale would not be enough on its own to halve the current account deficit. The impact would be small because, according to economic theory, households respond to tighter fiscal policy by reducing their level of savings. This feature is included in the EDGE model. In the case of the United States, however, the reduction in the household saving ratio could be limited by the high level of household indebtedness.

A sustained deceleration in productivity growth or an increased yield requirement for domestic US investments in US equities could restore the current account to a sustainable level, as this would reduce the inward flow of investment from abroad and in this way weaken the dollar. According to our calculations, the exchange rate reaction required is astonishingly similar irrespective of which process actually triggers the adjustment of the current account deficit. However, none of these channels offers such fluid and efficient adjustment as a change in the household saving ratio.

Several channels of adjustment

The present US current account deficit is most probably above a level that could be considered sustainable. In the discussion above we began with the assumption that at least half the present deficit is unsustainable.

There are many different processes through which adjustment of the current account deficit towards a sustainable level could come about. Based on the calculations presented above, an increase in the saving ratio of American households would offer the most fluid and efficient adjustment curve. In practice, adjustment towards a sustainable level will most probably take place through a number of channels at once. It is, however, hard to imagine the achievement of balance without a reduction in US domestic demand.

The implications of current account adjustment for monetary policy depend to a large extent on the precise route adjustment takes. If the process is triggered by a contraction in total demand in the United States, monetary

[6] Obstfeld and Rogoff (2000) have calculated that the dollar would have to be devalued nominally by 10–50% in order to eliminate the deficit entirely. Using the IMF's new macroeconomic model, Hunt and Rebucci (2003) estimate that US productivity growth of one percentage point would cause an appreciation of around 10% in the real dollar exchange rate over the medium term. If we assume their model to be symmetrical, an equivalent decline in productivity would cause a depreciation of around 10% in the real exchange rate.

policy could be used to some extent to support total demand globally. However, if adjustment is triggered by the reaction of investors on the foreign exchange markets, monetary policy will face a much harder task, and the pressures it will face in the United States and elsewhere will push it in different directions. According to our calculations, the monetary policy pressures posed by a balanced real economy in the latter case would be enormous, and it is unclear whether a zero interest rate floor would here leave any room at all for manoeuvre in monetary policy outside the United States. If the weakening of the dollar were to happen quickly, at a stroke, as it were, as we have assumed in our calculations, the problems would be highly intractable. Of course, in this respect the calculations must be viewed as merely broadly indicative.

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Publications series

Series A
ISSN 1238-1683, print
ISSN 1456-5943, online

Regulation and control of payment system risks – a Finnish perspective (Maksujärjestelmäriskien sääntely ja hallinta – suomalainen näkökulma)
Timo Iivarinen – Harry Leinonen – Matti Lukka – Veikko Saarinen
A:106
ISBN 952-462-104-5, print
ISBN 952-462-105-3, online

Key words: payment systems, payments, regulation, supervision, risks

This report begins by scrutinising regulation, supervision and risk management of payment systems, as well as risk analysis at a more general level. This is followed by an introduction to payment system supervision and regulation at the international level, with emphasis on the Bank for International Settlements (BIS), European Central Bank (ECB) and International Monetary Fund (IMF). Also included is a discussion of the proper role of national bodies, approached from the Finnish perspective. Payment system risks are discussed in terms of the writers' conceptions of the key risks involved and their classification and measurement.

The payment system risk classifications and framework presented in this report can be systematically examined in terms of either specific types of systems and instruments or as an integrated whole. This framework is used to evaluate the risks of Finnish payment systems. A product-specific risk model is also introduced, which can be used for example by banks to evaluate the risks of specific payment transfer products and their importance. The model development was a joint project of the banks and public authorities.

The report also presents means by which risks can be eliminated or reduced and explains how they have been alleviated in the Finnish payment systems. In this connection, the book describes – again in terms of the risks involved – Finnish interbank payment systems and how Finnish banks are linked to international payment systems. According to evaluations by the ECB and IMF, Finnish payment systems meet international standards and are relatively free of risks.

Finally, a view is presented of the overall course of future developments in payment transfers. The primary trends cited are globalisation, electronification and integration of systems.

Series E
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On robust ESACF identification of mixed ARIMA models
Heikki Hella
E:27
ISBN 952-462-112-6, print
ISBN 952-462-113-4, online

Key words: robust tentative identification, robust extended autocorrelation function, outliers, robust regression estimation, Monte Carlo simulations, time series models

Statistical data sets often contain observations that differ markedly from the bulk of the data. These outlying observations, 'outliers', have given rise to notable risks for statistical analysis and inference. Unfortunately, many of the classical statistical methods, such as ordinary least squares, are very sensitive to the effects of these aberrant observations, ie they are not outlier robust. Several robust estimation and diagnostics methods have been developed for linear regression models and more recently also for time series models.

The literature on *robust identification* of time series models is not yet very extensive, but it is

growing steadily. Model identification is a 'thorny issue' in robust time series analysis (Martin and Yohai 1986). If outliers are known or expected to occur in a time series, the *first stage* of modelling the data should be done using robust identification methods. In this thesis, the focus is on the following topics:

1. The development of a robust version of the extended autocorrelation function (EACF) procedure of Tsay and Tiao (1984) for tentative identification of univariate ARIMA models and comparison of non-robust and robust identification results.

2. Simulation results for the sample distributions of the single coefficients of the extended sample autocorrelation function (ESACF) table, based on classic and robust methods, both in outlier-contaminated and outlier-free time series.

3. Simulation results for two basic versions of the sample standard error of ESACF coefficients and the results of the standard error calculated from simulation replications.

Robust designing concerns two parts of the ESACF method: iterative autoregression, AR(p), and an autocorrelation function to obtain less biased estimates in both cases.

Besides the simulation experiments, robust versions of the ESACF method have been applied to single generated and real time series, some of which have been used in the literature as illustrative examples.

The main conclusions that emerge from the present study suggest that the robustified ESACF method will provide

a) a fast, operational statistical system for tentative identification of univariate, particularly mixed ARIMA(p, d, q), models

b) various alternatives to fit the robust version of AR(p) iteration into a regression context and use of optional robust autocorrelation functions to handle both isolated and patchy outliers

c) robust procedures to obtain more normal-shape sample distributions of the single coefficient estimates in the ESACF two-way table

d) the option of combining OLS with a robust autocorrelation estimator.

Simulation experiments of robust ESACF for outlier-free series show that, since the robust MM-regression estimator is efficient also for outlier-free series, robust ESACF identification can always be used with confidence.

The usefulness of the method in testing for unit roots is obvious, but requires further research.

Discussion Papers

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The matching function in the Finnish labour market 1988–2002 – regional and occupational differences in the efficiency of the matching process
(Kohtaantofunktio suomalaisilla työmarkkinoilla vuosina 1988–2002 – alue- ja ammattiryhmien väliset erot kohtaannon tehokkuudessa)

Markus Bunders

32/2003
ISBN 952-462-102-9, print
ISBN 952-462-103-7, online

Key words: matching function, equilibrium unemployment, labour market efficiency

Jobseekers and vacancies meet in the labour market. The efficiency of the matching process partly defines the level of equilibrium unemployment in an imperfect competition labour market model. The efficiency of the labour market matching process is measured by a matching function estimated from Finnish labour market data on 1988–2002. The less time it takes to fill a vacancy, the more efficient the matching process is assumed to be. The estimated matching function shows that the efficiency of the matching process varied dur-

ing 1988–2002, being most efficient during 1992–1994 and least efficient during 2001–2002. Thus, the mismatch between vacancies and unemployed jobseekers has increased. The efficiency of the matching process differs between regions and occupational groups, being much weaker in southern Finland – especially in Uusimaa and Häme than in the north and east of the country. The matching process was most efficient in occupations related to construction and transport and weakest in manufacturing and trade. The estimated matching function has increasing economies of scale. Thus, the equilibrium unemployment level can theoretically converge to more than one value.

Determinants of the loan loss allowance: some cross-country comparisons

Iftekhar Hasan – Larry D. Wall

33/2003
ISBN 952-462-106-1, print
ISBN 952-462-107-X, online

Key words: loan loss allowance, accounting standards, international banking, nonperforming loan, discretionary accruals

This paper analyses the determinants of banks' loan loss allowances for samples of US banks and three non-US samples: a group of 21 countries, Canada and Japan. The model includes fundamental (or non-discretionary) determinants of the allowance such as non-performing loans, and discretionary determinants such as income before the loan loss provision. The results suggest that the loan loss allowance is sensitive to pre-provision income in almost all samples. However, the results also suggest that some variables thought to reflect fundamental factors in US analysis, such as net chargeoffs, are not significant factors for non-US banks.

Effects of the supply-side channel on stabilisation properties of policy rules

Jukka Railavo

34/2003
ISBN 952-462-108-8, print
ISBN 952-462-109-6, online

Key words: inflation, fiscal and monetary policy, stabilisation

In this paper we introduce an application of the supply-side channel for fiscal policy to the basic New Keynesian model. We use a proportional tax rate instead of lump sum tax and introduce the distortions of a tax wedge. We derive a closed economy forward-looking model with government consumption and no capital. Households' labour supply decisions are endogenised. Monetary policy is conducted by a Taylor-type interest rate rule and fiscal policy follows a simple debt rule. We analyse the stability of the model when fiscal policy has both demand and supply-side effects and compare results with the standard case of only demand effects. We show that taking supply-side effects into account restricts the fiscal policy parameter range consistent with the dynamic stability of the economy. We also argue that allowing fiscal policy to affect both supply and demand results in more persistent inflation, as well as output responses to shocks, than without the supply-side channel. We also discuss the different monetary and fiscal policy regimes and their implications for the stability of inflation and output.

A calibrated structural model of the Czech economy

Tibor Hlédik

35/2003

ISBN 952-462-110-X, print
ISBN 952-462-111-8, online

Key words: monetary policy, monetary union, EMU accession

The paper presents a structural model framework for a small open economy. The model, based on optimising households and firms, has been calibrated on Czech macroeconomic data in order to develop an analytic framework suitable for analysing key policy questions related to the Czech Republic's anticipated EMU accession. In order to be able to use the model for assessing both pre- and post-accession policy issues, two versions of the model – fixed and flexible exchange rate versions – were developed. The suitability of the two alternative models for policy analysis was subsequently tested on a series of impulse response exercises. The dynamic responses of the two models to selected shocks and policy experiments are plausible. Hence these results suggest that the presented analytic framework can serve as a good starting point for analysing complex policy issues facing the Czech Republic.

Stability consequences of fiscal policy rules

Jukka Railavo

1/2004

ISBN 952-462-114-2, print
ISBN 952-462-115-0, online

Key words: inflation, fiscal and monetary policy, stabilisation

Using an optimisation-based model with endogenous labour supply and a proportional tax rate, we compare the stabilising properties of different fiscal policy rules. The economy is affected by shocks from both government spending and technology. The fiscal policy rule can be based on government liabilities or the government budget deficit. As both are given as measures of fiscal policy performance in the Stability and Growth Pact (SGP), we also use a fiscal policy rule based on the combination of the two. We compare the accounting definition of deficit with the economic definition which takes inflation into account. The fiscal policy rule based on debt, with monetary policy consistent with the Taylor principle, results in an unstable solution. However, a fiscal policy rule based on deficit produces stable solutions with a wide range of fiscal policy parameters. Moreover, we find that putting more weight on the deficit than the debt in the fiscal policy rule creates less cyclical responses to shocks. Finally we find out that the SGP definition of deficit performs as well as the real deficit based on the government budget constraint.

Extracting growth and inflation expectations from financial market data

Lauri Kajanoja

2/2004

ISBN 952-462-116-9, print
ISBN 952-462-117-7, online

Key words: inflation expectations, growth expectations, equity index futures

This study presents a framework for extracting long-run GDP growth and inflation expectations from financial market data on a real-time basis. The framework uses information from both stock and bond markets. It builds on a dividend discount model of stock valuation and on a linearized consumption Euler equation. Furthermore, expected long-run dividend growth for a broad equity index is assumed to be related to expected long-run GDP growth. Short-run and long-run dividend growth expectations are allowed to differ. The former are measured using equity index futures. We extract growth and inflation expectations for the euro area and for the United States.

Monetary policy and learning in an open economy

Martin Ellison – Lucio Sarno – Jouko Vilmunen

3/2004

ISBN 952-462-118-5, print
ISBN 952-462-119-3, online

Key words: activism, learning, monetary policy, open economy

In this paper, we examine the incentives for central bank activism and caution in a two-country open-economy model with uncertainty and learning. We find that the presence of a strategic interaction between the home and foreign central banks creates an additional motivation for caution in monetary policy. An activist policy designed to help the learning of the home central bank is suboptimal since it generates a strong reaction from the foreign central bank. As joint learning by the home and foreign central banks is shown to be detrimental to welfare, the optimal policy is cautious.

An approach to bank insolvency in transition and emerging economies

David G. Mayes

4/2004

ISBN 952-462-120-7, print
ISBN 952-462-121-5, online

Key words: insolvency, banks, transition, emerging economies

In the light of the inequity of the way losses from bank insolvencies and their avoidance through intervention by the authorities have been distributed over creditors, depositors, owners and the population at large in transition and emerging economies, this paper explores a number of regulatory reforms that would alter the balance between seeking to avoid insolvency and lowering the costs of insolvency should it occur. In particular it considers whether a lex specialis for dealing with banks that are in trouble through prompt corrective action and if necessary resolving them if their net worth falls to zero, at little or no cost to the taxpayer can be applied in the institutional framework of transition and emerging economies.

Robust expectations and uncertain models – A robust control approach with application to the New Keynesian economy

Juha Kilponen

5/2004

ISBN 952-462-122-3, print
ISBN 952-462-123-1, online

Key words: expectations, robust control, model uncertainty, monetary policy, imperfect information

This paper extends Svensson and Woodford's (2003) partial information framework by allowing the private agents to achieve robustness against incomplete information about the structure of the economy by distorting their expectations in a particular direction. It shows how a linear rational expectations equilibrium under concern for robustness can be solved by exploiting the recursive structure of the problem and appropriately modifying the Bellman equations in their framework. A standard Kalman filter is then used for information updating under imperfect measurement of the state variables. The standard New Keynesian model is used for illustrating how concern for modelling errors interacts with imperfect information. Agents achieve robustness by simultaneously over-estimating the persistence of exogenous shocks, but under-estimating the policy response to the output gap. This under-estimation, combined with imperfect measurement, leads to larger and more persistent responses of private consumption to government expenditure shocks under robust expectations.

BOFIT Discussion Papers

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The monetary approach to exchange rates in the CEECs

Jesús Crespo-Cuaresma – Jarko Fidrmuc – Ronald McDonald

14/2003
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ISBN 951-686-877-0, online

Key words: Exchange rates, monetary model, panel unit root tests, panel cointegration, EMU

A panel data set for six Central and Eastern European countries (the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia) is used to estimate the monetary exchange rate model with panel cointegration methods, including the Pooled Mean Group estimator, the Fully Modified Least Square estimator and the Dynamic Least Square estimator. The monetary model is able to convincingly explain the long-run dynamics of exchange rates in CEECs, particularly when this is supplemented by a Balassa-Samuelson effect. We then use our long-run monetary estimates to compute equilibrium exchange rates. Finally, we discuss the implications for the accession of selected countries to the European Economic and Monetary Union.

Optimum currency area theory: A selective review

Julius Horvath

15/2003
ISBN 951-686-878-9, print
ISBN 951-686-879-7, online

Key words: optimum currency areas, asymmetric shocks

The first part of this paper is a review of significant papers in the vast literature on optimum currency area (OCA) theory. The author focuses on the main classical contributions, then considers modern treatment of OCA theory. The second part considers empirical literature on the types of geographical areas that might constitute optimum currency areas, particularly with respect to asymmetry and symmetry of shocks.

Firms and public service provision in Russia

Pertti Haaparanta – Tuuli Juurikkala – Olga Lazareva – Jukka Pirttilä – Laura Solanko – Ekaterina Zhuravskaya

16/2003
ISBN 951-686-880-0, print
ISBN 951-686-881-9, online

This paper reports first results from a survey of 404 middle-sized and large manufacturing firms from 40 Russian regions in April–June 2003. We examine the extent of social service and infrastructure provision by the firms and the firms' assessment of the quality of public infrastructure and the regulatory environment. Background information on ownership, investment, performance, competition, and finance decisions of the firms is also gathered.

The data reveal that despite major divestments of social services during the 1990s, a great majority of firms still provide at least some form of social services. For example, 56% of the firms have their own housing or support local housing, and 73% of the firms have recreation facilities or support employees' recreation activities. While

managers view the social service provision as non-essential and costly, many of the firms continue to provide these services, even to users other than their own workforce.

The quality of public infrastructure is generally assessed as being good or satisfactory; the respondents were the least satisfied with the quality of roads. Over a half of the firms provide their own heat, but mainly due to technological reasons – although public service interruptions do occur – and 24% of the firms give support to the maintenance and construction of public road network.

The regulatory burden the firms face continues to be severe. In more than half of the firms, for example, the general manager has to spend more than two weeks in negotiations about public infrastructure with the authorities.

These descriptive results indicate that there is still a lot scope for improvement in the quality and quantity of public service provision in Russia. Enterprises are still engaged rather heavily in social service provision, the road network requires improvements, and the easing of regulatory burdens should continue. Addressing these questions is likely to be vital for the sustainability of investments and growth in Russia.

Trade, product variety and welfare: A quantitative assessment for the transition economies in Central and Eastern Europe

Michael Funke – Ralf Ruhwedel

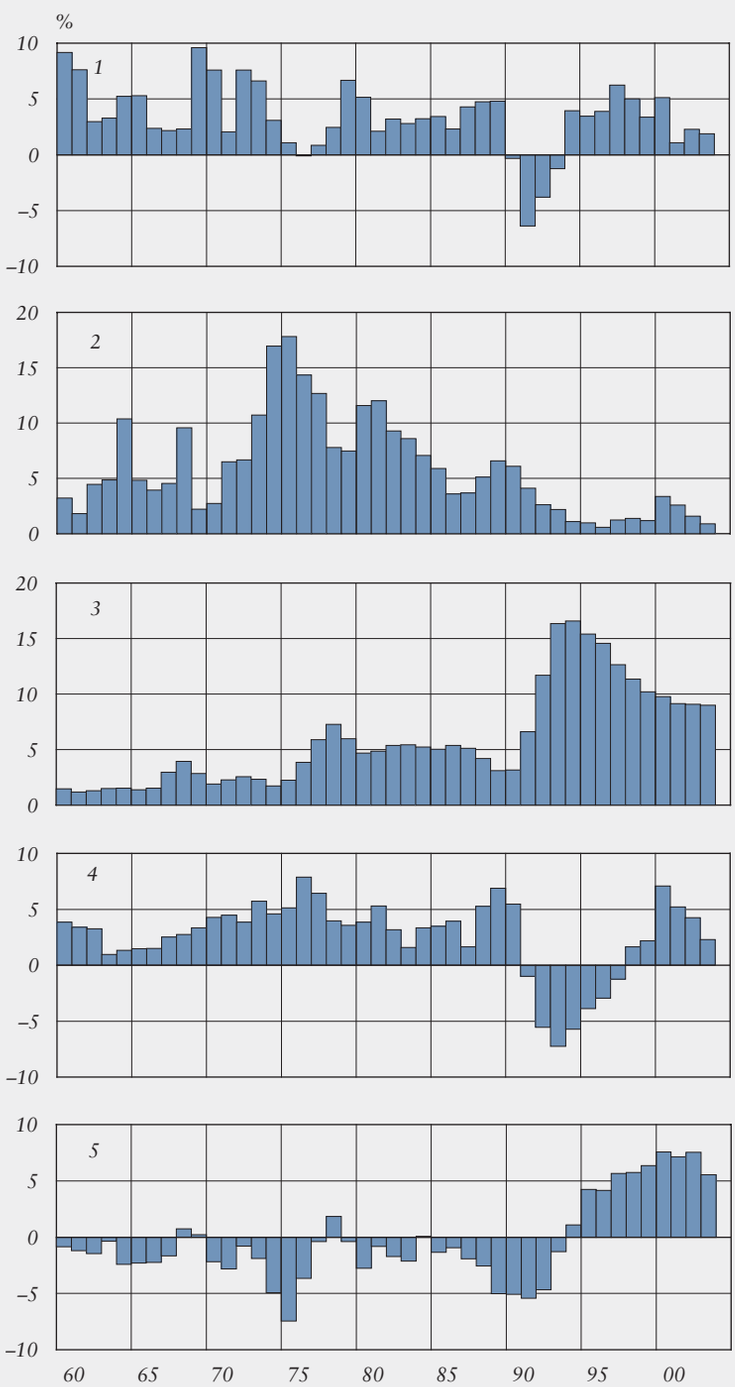
17/2003
ISBN 951-686-882-7, print
ISBN 951-686-883-5, online

Key words: trade liberalization, product variety, welfare, transition economies

We calculate welfare gains of trade liberalization in the Central and East European transition economies, following the approach of Romer (1994), who emphasized that proper modelling of the impact of trade restrictions on the number of available product varieties is crucial to quantifying the welfare impact of trade liberalization. The empirical work relies on direct measures of product variety calculated from 5-digit trade data. Although the issue is far from settled, the emerging conclusion is that freer trade has boosted welfare.

Charts

1. Finland: key economic indicators



GDP, volume change from previous year

Consumer prices, change from previous year

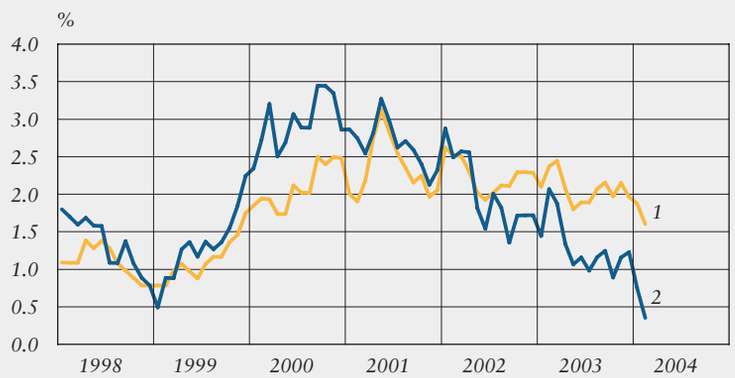
Unemployment rate

General government fiscal position, % of GDP

Current account, % of GDP

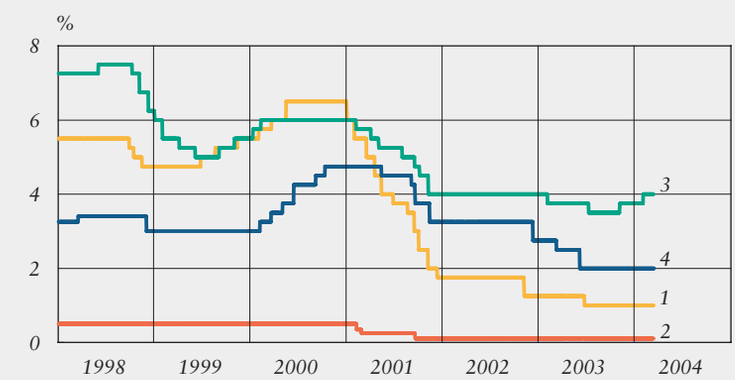
Sources: Statistics Finland and Bank of Finland.

2. Price stability in the euro area and Finland



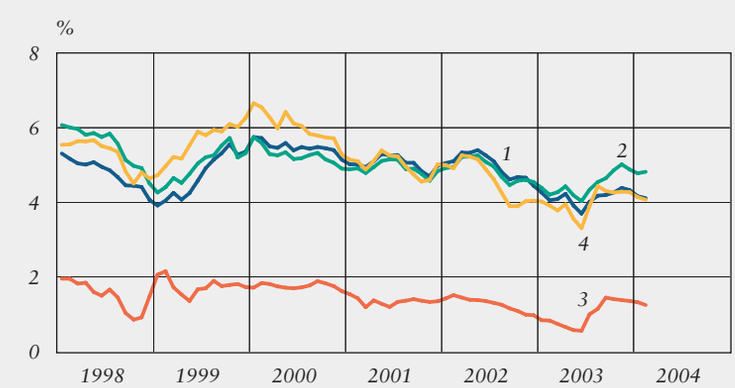
Harmonised index of consumer prices, 12-month change, %
1. Euro area
2. Finland
Sources: Eurostat and Statistics Finland.

3. Official interest rates



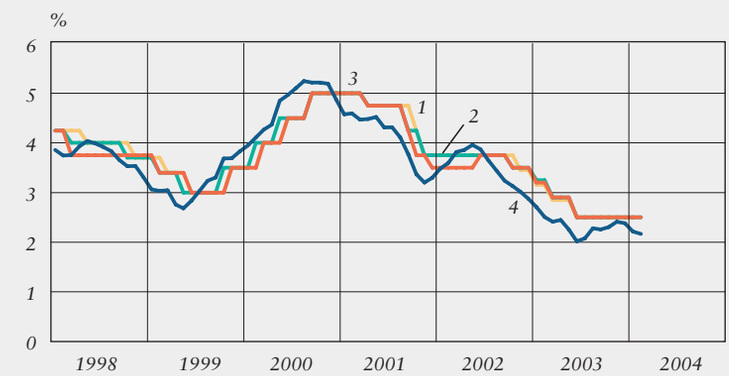
1. USA: fed funds target rate
2. Japan: discount rate
3. United Kingdom: repo rate
4. Eurosystem: main refinancing rate/minimum bid rate (Bank of Finland tender rate)
Source: Bloomberg.

4. International long-term interest rates



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

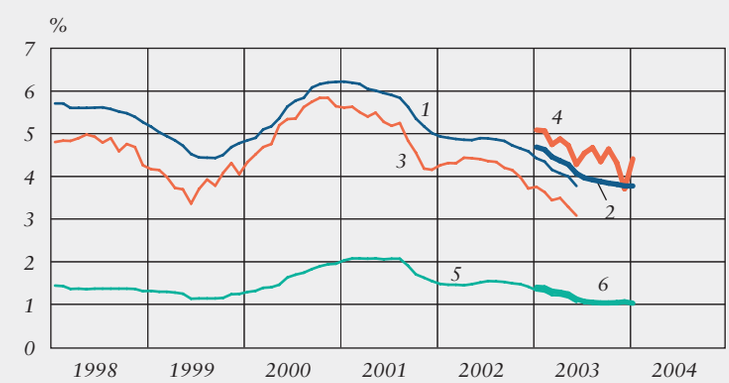
5. Bank reference rates in Finland and 12-month Euribor



1. *Nordea prime at the end of the month*
2. *Sampo prime at the end of the month*
3. *OKOBANK group prime at the end of the month*
4. *12-month Euribor (Helibor until end-1998)*

Sources: Banks and ECB.

6. Average lending and deposit rates

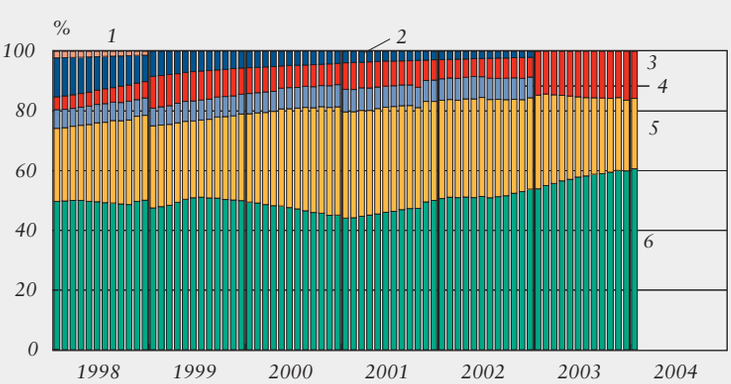


1. *Banks' stock of loans*
2. *MFIs' stock of loans*
3. *Banks' new loans*
4. *MFIs' new loans*
5. *Banks' stock of deposits*
6. *MFIs' stock of deposits*

Source: Bank of Finland.

Data collection changed as of 1 January 2003. Under the new system MFIs include both deposit banks and other credit institutions.

7. Stock of bank lending by interest rate linkage

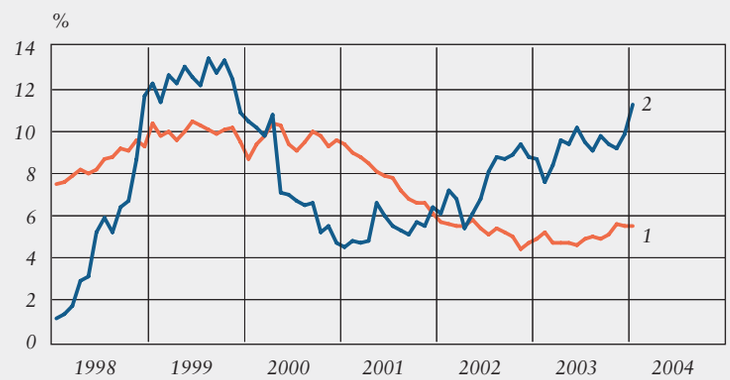


1. *Linked to 3 and 5-year reference rates*
2. *Linked to base rate*
3. *Linked to other rates (as of 2003 includes loans linked to base rate and fixed-rate loans)*
4. *Fixed-rate*
5. *Linked to reference rates of individual banks (prime rates, etc)*
6. *Linked to Euribor (Helibor until end-1998)*

Source: Bank of Finland.

Data collection changed as of 1 January 2003.

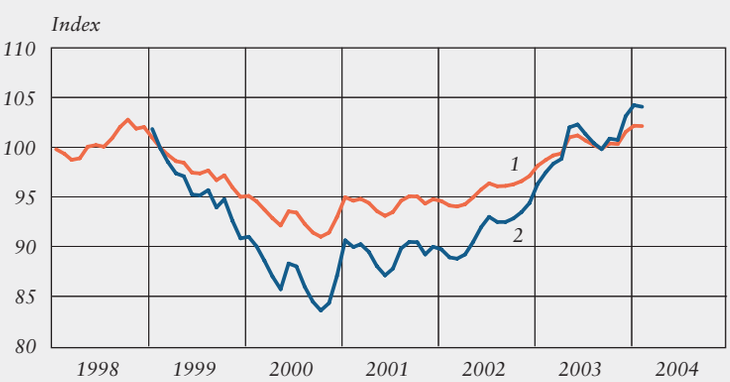
8. MFI loans to private sector



12-month change, %
1. *Loans by euro area MFIs to euro area residents*
2. *Loans by Finnish MFIs to euro area residents*

Sources: European Central Bank and Bank of Finland.

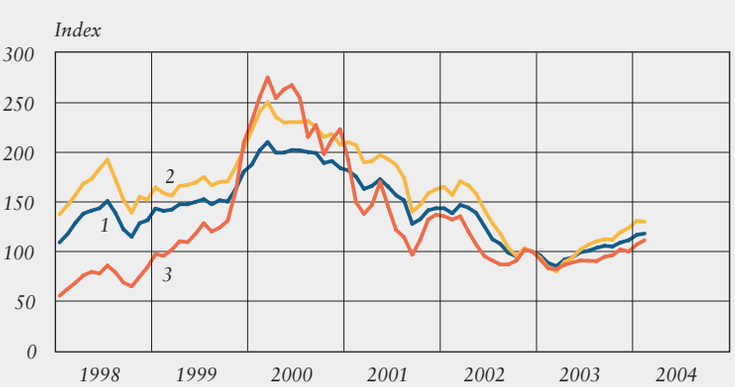
9. Competitiveness indicators for Finland



1999 Q1 = 100
Based on trade-weighted exchange rates.
An upward movement of the index represents a weakening in Finnish competitiveness.
1. *Narrow competitiveness indicator including euro area countries*
2. *Narrow competitiveness indicator*

Source: Bank of Finland.

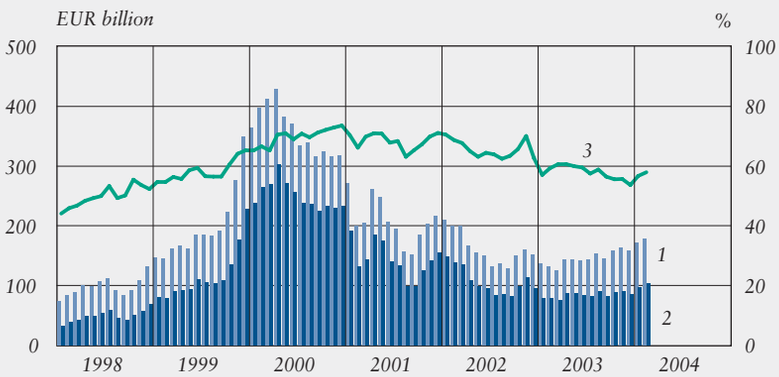
10. Selected stock price indices in the euro area



31 December 2002 = 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.

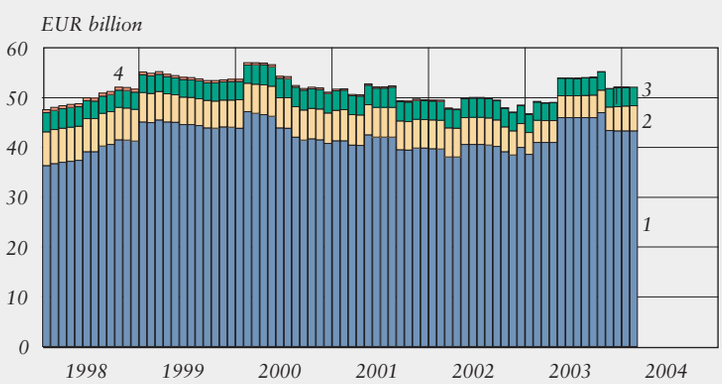
11. Listed shares in Finland: total market capitalisation and non-residents' holdings



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).

12. Bonds issued in Finland

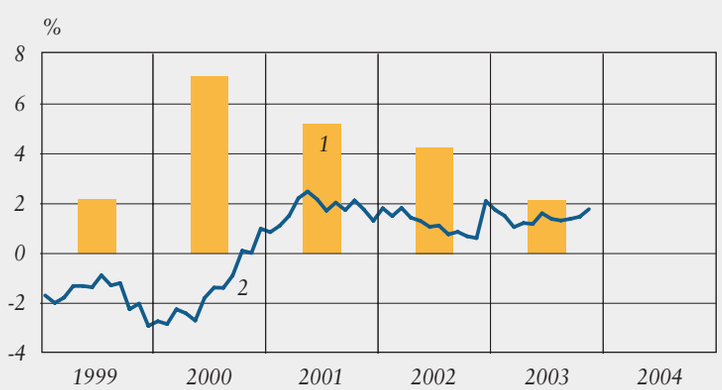


End-month stock

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

Source: Statistics Finland.

13. Public sector balances in Finland

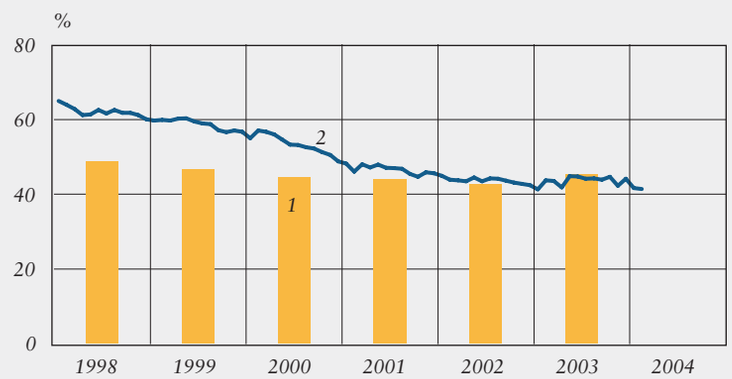


% of GDP

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

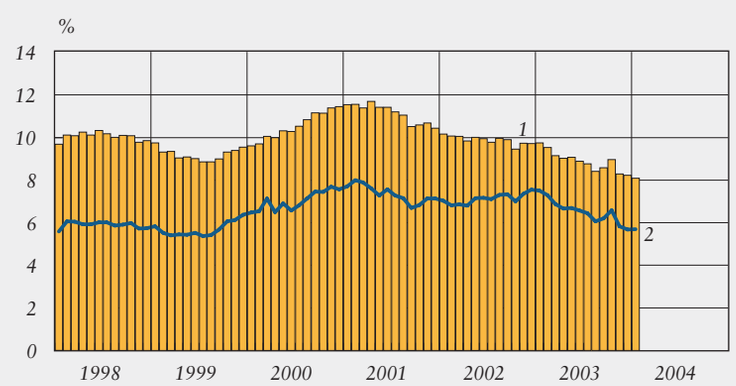
Sources: State Treasury, Statistics Finland and Bank of Finland.

14. Public debt in Finland



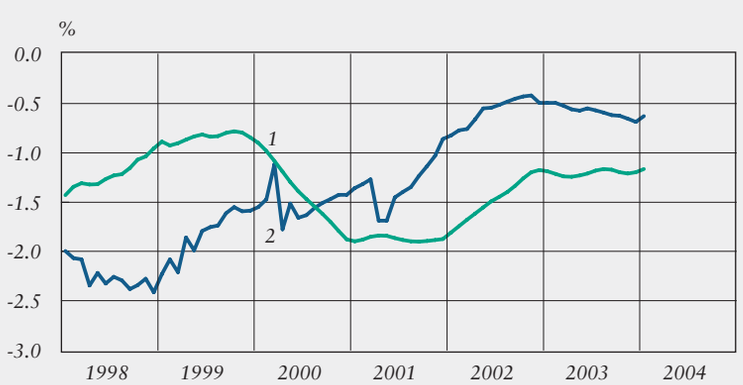
% of GDP
1. General government debt
2. Central government debt, 12-month moving total
Sources: State Treasury, Statistics Finland and Bank of Finland.

15. Finland: goods account and current account



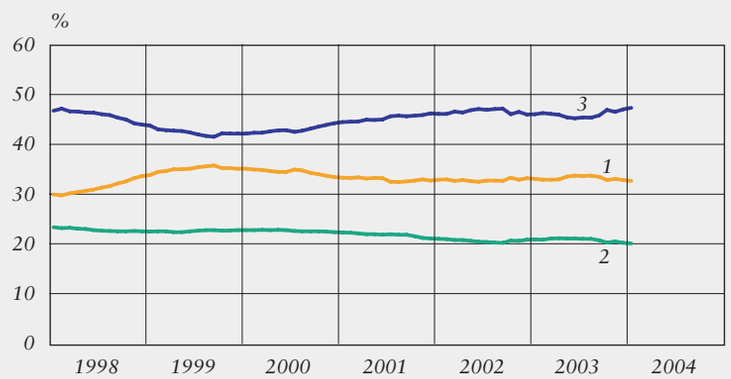
12-month moving totals, % of GDP
1. Goods account, fob
2. Current account
Source: Bank of Finland.

16. Finland: services account and income account



12-month moving totals, % of GDP
1. Services account (trade in goods, fob)
2. Income account
Source: Bank of Finland.

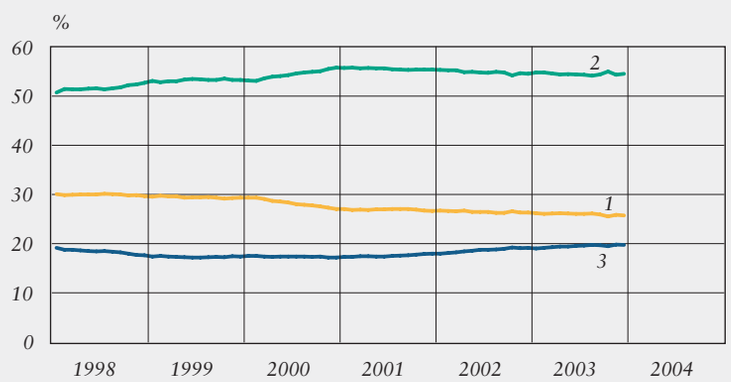
17. Regional distribution of Finnish exports



12-month moving totals, percentage of total exports
1. *Euro area*
2. *Other EU member states*
3. *Rest of world*

Sources: National Board of Customs and Statistics Finland.

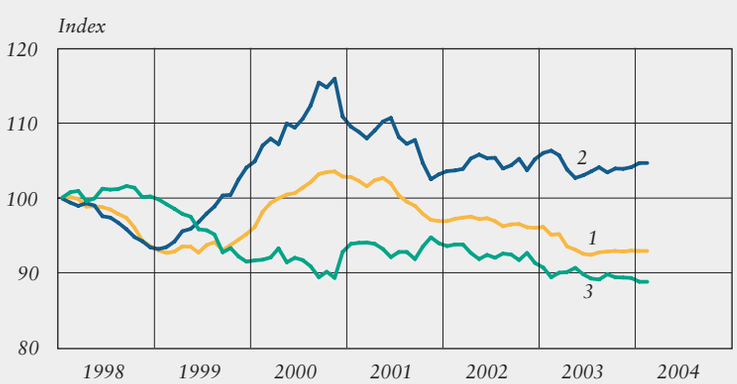
18. Finnish exports by industry



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.

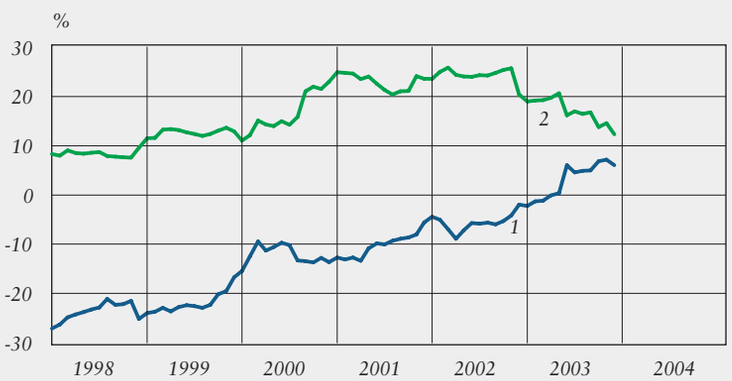
19. Finland's foreign trade: export prices, import prices and terms of trade



1995 = 100
1. *Export prices*
2. *Import prices*
3. *Terms of trade*

Source: Statistics Finland.

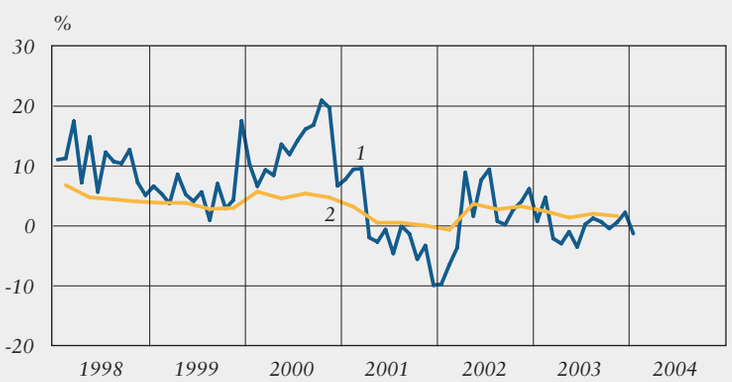
20. Finland's net international investment position



% of GDP
1. *Net international investment position excluding equity items*
2. *Net outward direct investment*

Sources: Bank of Finland and Statistics Finland.

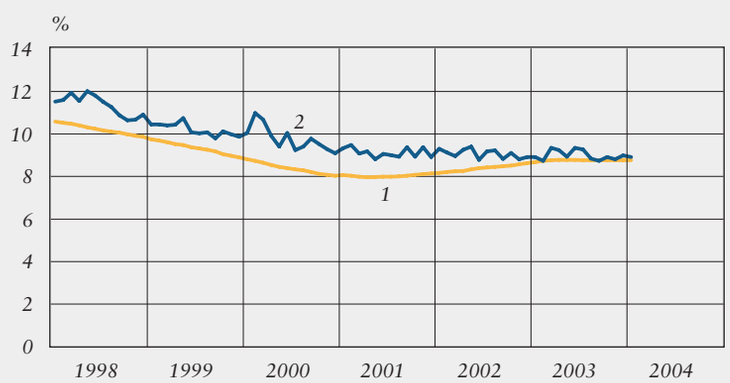
21. Finland: GDP and industrial production



Percentage change from previous year
1. *Industrial production*
2. *Gross domestic product*

Source: Statistics Finland.

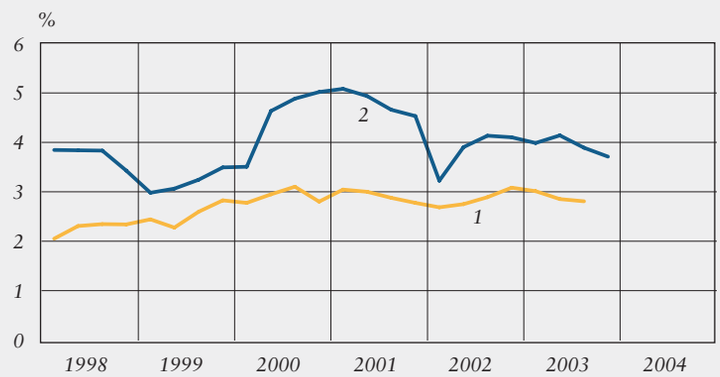
22. Unemployment rate in the euro area and Finland



1. *Euro area*
2. *Finland*

Sources: Eurostat, Statistics Finland and Bank of Finland.
Data seasonally adjusted.

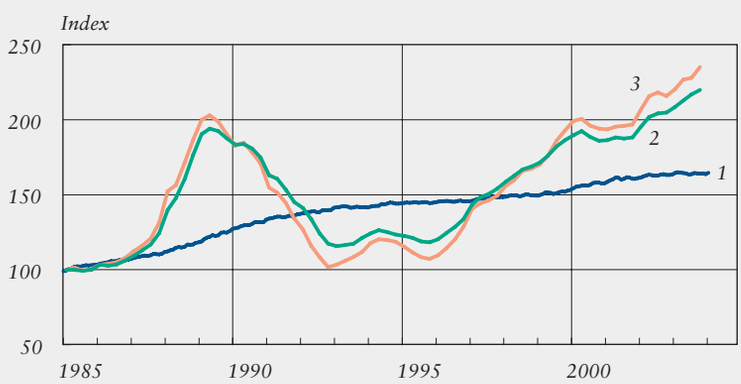
23. Industrial earnings in the euro area and Finland



Percentage change from previous year
1. *Euro area*
2. *Finland*

Sources: Eurostat and Statistics Finland.

24. Selected asset prices in Finland



January 1990 = 100
1. *Consumer prices*
2. *Housing prices*
3. *Two-room apartments (secondary market; debt-free price per m²)*

Source: Statistics Finland.

Organisation of the Bank of Finland

1 April 2004

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

Suomen Pankki
Bank of Finland
PO BOX 160, FI – 00101 HELSINKI, FINLAND
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