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Preface

Economic growth in Finland has been running at around twice the euro area average for several years, and the recovery in growth last year exceeded expectations. Of the old EU countries (EU15), only Greece, Ireland and Luxembourg recorded better growth than Finland. Finnish growth is expected to continue to be fairly strong in European terms in the next couple of years. After 2006, however, there will be a marked easing in the pace of growth unless there is a considerable improvement in productivity and a rise in the employment rate.

A number of signs indicate that supply-side restrictions will gradually begin to hamper growth. This is most clearly seen in the present level of import growth, which has cut the current account surplus by almost a half since 2000. On the labour market, the problem of matching supply and demand has worsened. The number of unfilled vacancies has rapidly increased side by side with a persistently high rate of unemployment. Finally, housing construction is slowing down due to a shortage of building land.

Inflationary pressures normally accumulate when economic growth comes up against supply constraints. There is no sign of this in Finland at present. Last year was a time of zero inflation, although admittedly a decisive factor was the fall in the price of alcoholic beverages as a result of cuts in excise duty. Even so, inflation should remain subdued over the next few years as well. All the indicators would suggest the Finnish economy is now less susceptible than before to inflation. There are many factors that contribute to this. Price stability, a key objective of Economic and Monetary Union, has filtered through to expectations, influencing wage formation and pricing decisions in both Finland and other countries in the euro area. Increased competition helps to maintain price discipline even in periods of strong demand. This has been the case among retailers and teleoperators, for example. The impact of imports from low-cost economies is also beginning to show in the prices of an increasing range of consumer goods.

Although euro appreciation has depressed exports, it has also helped moderate inflationary pressures in the euro area and in this way made it possible to hold interest rates at a very low level. In Finland, the ECB's relaxed monetary policy has had a stabilising effect on the economy, sustaining household confidence, an effect which has been particularly apparent in the housing market. Borrowing has been brisk and housing prices have risen. In Finland, household confidence has also been sustained by relatively stable unemployment figures, despite a temporary deterioration in employment itself. Growth in real disposable household incomes and private consumption has been fairly stable even in a time of slight recession in exports and industrial output.

Last year's economic growth was fairly broadly based, with industrial output, exports and investment in machinery and equipment included in the growth sectors. If the Bank of Finland's assessment of impending

supply constraints is correct, however, economic growth cannot accelerate any further or employment be increased by an increase in aggregate demand – for example, by timing major public investment projects or large tax cuts for the present phase of the business cycle. Nevertheless, there is certainly a case for carefully considered public investment, if this can be used to reduce bottlenecks on the supply side. The Bank of Finland takes the view that tax cuts could have a considerable impact on total labour input, but only gradually and if the long-term sustainability of general government finances is not endangered.

World economic growth is forecast to continue at a fairly brisk pace. This will provide opportunities for Finnish exporters. The key issue is how Finland can take advantage of these opportunities. In the forecast, volume growth in Finnish exports is expected to lag well behind the level of growth in the export markets, as measured by import growth in Finland's main markets. Thus, measured by export volumes, Finland will continue to lose market share in world trade. Although export prices will continue to rise this year due to fabricated metal exports, the sustained downward trend in export prices in the electronics industry will mean a fall in average export prices in 2006. Thus, the decline in market share measured by value will be even steeper than the volume decline.

This decline in market share is perhaps not an acute problem, but for a small open economy like Finland it does give cause for concern over the longer term trend. There is reason to fear that the problems with production structure and real export competitiveness will continue. Outside the electronics industry there has been little input in fixed investment or the development of competitive products. Without sufficient investment, there is a danger that Finland's traditional export industries will drift into increasingly serious difficulties under pressure from new competitors, and that the structure of exports will not diversify sufficiently quickly.

In the previous forecast (Bulletin 3/2004), the Bank of Finland drew attention to a lack of investment. It was gratifying last year to see the investment ratio begin to climb, and the forecast is for this to continue. This is a positive trend in two ways. It will ease supply contraints and also stimulate productivity growth, at least if the investment growth is market driven. Artificial investment incentives that reduce capital costs do not generally encourage investment that increases total factor productivity.

There is a great deal of sectoral evidence on the positive productivity impact of increased competition. However, the sectoral impact does not reveal what the macroeconomic impact will be. The Bank of Finland has developed a macroeconomic model (Aino) that allows this to be assessed. The results of calculations using this model demonstrate clearly that increased competition in the product and labour markets boosts consumption, investment, total output and employment. Initially, increased

competition may have a slightly negative impact on consumption, but positive effects begin to show through within just a few years. For a positive impact on both output and employment, greater competition in product markets is at least as important as a more competitive labour market. The impact comes primarily through an increase in disposable income, improved price competition as a result of lower producer prices, and higher labour demand as a result of a reduction in labour costs. The positive impact on output and employment makes it possible to reduce taxes on labour to some extent without endangering the long-term sustainability of general government finances.

Similar calculations have been carried out elsewhere, too, with similar results. Although calculations of this sort only indicate general tendencies, they can nevertheless identify the complex channels of cause and effect through which reforms that increase competition in product and labour markets can bring benefits to consumers in a relatively short time. The essential dilemma for economic policy-makers in most European countries is how to justify the short-term costs sometimes associated with such reforms by the longer-term benefits that will be achieved as a result.

19 March 2005

Erkki Liikanen

Executive summary

The Bank of Finland forecasts continued fairly brisk growth for the Finnish economy over the next few years. GDP growth of approximately 3% is forecast for both this year and next, with the estimated pace of growth easing to just over 2.5% in 2007. Growth will be based on strengthening domestic demand, with investment, consumption and imports all increasing relative to GDP.

However, when assessing the performance of the Finnish economy, it is important to bear in mind that the figures for growth, productivity development and unit labour costs all reflect the contribution of the electronics sector. Most of the benefits from productivity growth in electronics will be passed on to foreign consumers in the form of lower prices; they will consequently not raise the level of incomes in Finland. This means that employment growth will not be as rapid as might otherwise be expected, and domestic cost pressures will not be as low as the trend in unit labour costs would suggest.

The generally favourable trend is also overshadowed by growing supply constraints, as both labour supply and domestic production capacity will begin to gradually restrict growth. In the labour market, capacity restrictions will begin to be felt due to problems with matching supply and demand, and also as a result of population ageing. Moreover, during the forecast period, unemployment will come down close to the estimated level of structural unemployment.

The slowing pace of growth in the productive capital stock alongside a gradual contraction in labour supply will make more rapid development of labour-saving and capital-saving technologies essential if domestic output is to be able to match growth in demand. In the forecast, strong domestic demand is reflected already in import growth and a contraction in the current account surplus.

Investment growth will be more sluggish than last year, with slower growth particularly in housing construction. The forecast period will nevertheless see an overall rise in the investment ratio of approximately one percentage point. This is welcome news. Productivity development in many sectors has for a long time been extremely sluggish, suggesting a shortage of investment. There is still a need to increase the volume of both fixed investment and investment in research and development, although there can be no return to the over-investment of the 1980s. In the end, more important than the volume of investment is its appropriate targeting to support productivity growth in the economy as a whole and a more diversified production structure.

Annual consumption growth will be approximately 3% during the forecast period. As in recent years, it will be supported by continued stable income development, low interest rates and continuing strong consumer confidence. There is, however, a risk that consumption will grow more slowly than expected due to a possible decline in consumer confidence.

Finnish exports only began to benefit from the present growth in the world market during the second half of

last year. Besides the outdated production structure of Finland's export industries, exports have also been hampered by the appreciation of the euro and the poor economic performance of the euro area. Export growth is estimated to ease slightly during the first half of 2005, but should begin to pick up again by the summer.

The current account surplus is forecast to fall below 4% of GDP towards the end of the forecast period as a result of brisk growth in domestic demand – ie investment and consumption – and a decline in the GDP share of net exports as a result of import growth.

Export volumes and prices are forecast to develop more weakly in Finland than on average in competing countries. Hence the existing problems with production structure and real export competitiveness will remain unresolved in the immediate years ahead. With the exception of electronics, there has been little fixed investment or investment in developing competitive products. Without sufficient investment there is a danger that Finland's traditional export sectors will face increasingly severe problems from new competitors and there will be insufficient diversification in the structure of exports.

The falling trend of recent years in the number of employed will be reversed during the forecast period as both the public and the private sector expand their workforce. The decline in industrial employment has slowed as a result of good profitability and productivity growth in a number of sectors. This positive trend is expected to continue during the forecast period.

Unemployment is forecast to come down to 8.4% by 2007. The limits of labour supply will begin to be felt during the forecast period as the figures approach the level of structural unemployment. Population ageing will begin to dampen the supply of labour. Together with the problem of matching supply and demand, this will cause labour shortages in some sectors, particularly towards the end of the forecast period.

Productivity growth for the economy as a whole is estimated at 2–2.5% per annum, with the slower pace of this growth being due to a contraction in private sector output combined with a slight rise in the number of employed.

General government finances will be stable in the forecast period. The combined surplus of central government, local government and the social security funds will remain a good 2% of GDP at the same time as both income and expenditure contract relative to GDP. There will also be a contraction in general government debt relative to GDP. There will be a moderate annual decline in the total tax ratio. Government measures will be slightly supportive of growth throughout the forecast period.

There will be little room for manoeuvre with regard to the Budget's spending limits. Any acceleration in expenditure growth beyond the spending limits would undermine the sustainability of general government finances, and a quick return to sustainability would be unlikely. Improving the sustainability of general government

finances will require more efficient production of public services. However, rather than improving, productivity in the provision of basic public services would appear to have actually declined in recent years.

Inflation will remain subdued throughout the forecast period, although supply contraints will begin to make themselves felt. Inflation, as measured by the Harmonised Index of Consumer Prices, will be around 1% in 2004, thereafter accelerating to 1.4% in 2006 and 1.8% in 2007.

Stiffening competition in a number of sectors will continue to place a strong brake on inflation. Even so, cost factors will begin to cause a slight acceleration in the pace of inflation as indirect costs gradually find their way through to final product prices.

The forecast's short-term inflation risks are weighted towards slightly lower than expected inflation. With regard to energy prices, there are risks in both directions, while the inflation risks for services and processed foods are primarily in the direction of lower than expected inflation.

Long-term inflation risks are influenced by the uncertainty surrounding productivity development. A faster than expected deceleration in the pace of productivity growth could increase inflationary pressures more than forecast, due to a significant rise in unit labour costs. A tightening in labour market conditions towards the end of the forecast period could also cause cost pressures that would eventually be passed on to prices.

The Bank of Finland forecasts continued growth in the world economy in 2005–2007 of on average around 4% per annum. Although growth will be slower than last year, it will still be faster than the long-term average for the world economy.

The growth risks attendant on the forecast for the international economy are estimated to be more or less in balance. They comprise largely the same elements as in the Bank of Finland's summer 2004 forecast (Bulletin 3/2004) and concern the precise way in which the imbalances in the global economy are resolved, the manageability of growth in China, the price of oil and the effects of the relaxed monetary policy of recent years.

Financial markets

During the past six months, financial markets the world over have been dominated by news of the price of oil and the external value of the dollar. The rise in oil prices during the course of 2004 and once again at the start of 2005 brought fears of a slowdown in growth in the industrial nations. The dollar has continued its downward trend, and in recent months some Asian currencies, too, have strengthened against it. However, the large US current account deficit has not yet begun to contract.

Real short-term interest rates have remained very low in both the euro area and the United States. Together with the fairly favourable outlook for the world economy, this has raised investors' interest in higher-risk investments, which has in turn boosted share prices and narrowed the interest rate spreads between corporate and government bonds. Low real interest rates have also sustained the brisk growth in demand for housing loans and high prices in the housing markets of many industrial countries.

Interest rates

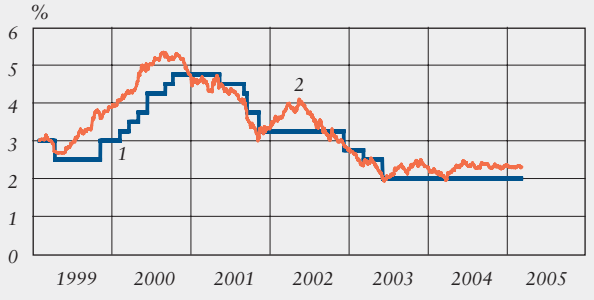
Euro area interest rates have remained low. The European Central Bank has now held its policy rate at 2% for over a year and a half. Short-term market rates are still just slightly above 2%, as the market does not expect the Governing Council of the ECB to tighten its monetary policy stance in the immediate future (Chart 1). Financial market participants now expect policy rate increases to come slightly later than they were expecting six months ago.

The expectations of continued relaxed monetary policy in the near future reflect the outlook for inflationary pressures. This remains fairly favourable, despite the rise in the price of crude oil and fairly rapid growth in the world economy. Inflationary pressures are moderated by both euro appreciation and the fact that there is no immediate sign of faster growth in the euro area. The persistence of fairly slow growth has helped to moderate the pace of growth in labour costs in the euro area, which in turn reduces the pressures on business to raise the prices of goods and services.

In contrast to the euro area, US short-term rates have risen over the course of the past six months or so. In June 2004, the US Federal Reserve began a series of rate rises that have taken its policy rate from 1% to 2½%. The markets expect further rate rises over the next few months. The tightening of US monetary policy is a response to rapid economic growth in the USA and a slight increase in inflationary pressures. The still strong level of domestic demand has

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

The world economy appears to have reached an exceptionally fast rate of growth in 2004, at 4½%. Growth was particularly strong in the first half of the year, and therefore a slight deceleration towards the end of the year came as no surprise. The growth rate is forecast to remain around 4% in 2005–2007. US growth will slacken somewhat, whereas non-Japan Asia will continue to record rapid growth close to the rates observed in the past few years.

The slowdown in world trade growth at the end of last year should remain temporary and world trade recover already before the end of 2005. Over the forecast period as a whole, world trade will expand at a brisk annual rate of just over 7%. Import volume in Finnish export markets will grow slightly faster still – supported by a strong increase in Russian imports – and is likely to reach almost 8% this year (Table).

Industrial commodity prices (excl. oil) have undergone wide fluctuations in response to expectations over the rate of growth in the Chinese economy. Metal prices, in particular, began to climb again rapidly in February 2004, together with the price of oil. This is believed to be a consequence of continued robust demand, as there have been no significant, protracted supply shocks. However, the rise in commodity prices is expected to come to a halt as the supply of commodities increases by the middle of the forecast period.

With no significant new sources of supply in view, the favourable growth outlook for the world economy has also further boosted crude oil futures prices. The barrel price of oil is predicted to remain at around USD 40 in 2007. This is due in part to the depreciation of the dollar, and in part to the continued strength of world growth and demand for oil.

Competitors' export prices (in national currencies) began to rise again in 2004 after a decline of more than two years. The total rise for the year was around 1%, and the upturn is forecast to accelerate further to around 1½% this year, largely due to a continued steep upsurge in commodity prices. In euro terms, competitors' export prices will, however, stagnate in 2005 and rise only about 1% in 2006–2007.

Finnish import prices for goods and services generally follow world market prices, while also partly reflecting Finnish import demand conditions. In 2004, the rate of increase in import prices was faster than that of export prices in Finland's trading partners, in particular as a result of a strong rise in import prices for services. This, in turn, largely reflects a manifold increase in sea freight prices in 2002–2004. Import prices will continue to pick up in

Table.
Forecast assumptions

	2003	*2004f*	*2005f*	*2006f*	*2007f*
Import volume in Finnish export markets, % change	*5.4*	*8.3*	*7.8*	*7.4*	*7.2*
Finnish import prices, % change	*0.7*	*2.8*	*1.6*	*2.2*	*–0.3*
Oil price, USD per barrel	*28.9*	*38.3*	*48.3*	*44.6*	*40.0*
Export prices of Finland's trading partners, % change	*–5.6*	*–0.7*	*–0.1*	*0.8*	*1.1*
3-month Euribor, %	*2.3*	*2.1*	*2.3*	*2.8*	*3.3*
Yield on Finnish 10-year government bonds, %	*4.1*	*4.1*	*3.7*	*4.0*	*4.1*
Finland's nominal competitiveness indicator[1]	*100.1*	*101.6*	*102.8*	*103.4*	*103.9*
US dollar value of one euro	*1.13*	*1.24*	*1.32*	*1.34*	*1.35*

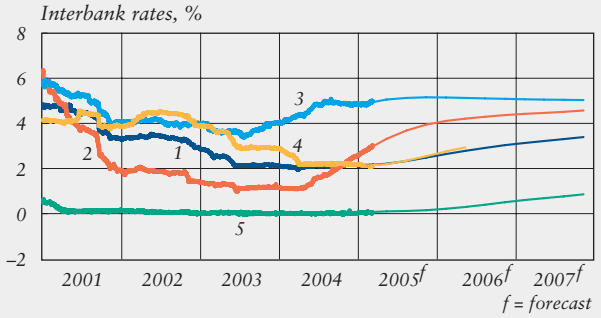
[1] Narrow plus euro area, January–March = 100.
f = forecast
Sources: Statistics Finland, Bloomberg and Bank of Finland.

2005–2006, but will begin a mildly downward trend in 2007 in the context of falling oil prices.

The interest and exchange rate assumptions in the forecast are derived from market expectations on 28 February 2005. 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 on the basis of publicly quoted interest rate futures. Market participants expect a gradual rise in short-term interest rates, to reach 3.4% by the end of 2007 (Chart A). The euro is expected to appreciate against the US dollar by just over 1% annually (Chart B), to trade at USD 1.36 by the end of 2007. By contrast, Finland's nominal competitiveness indicator will strengthen by only just over 1% during the forecast period (Chart B).

Chart A.

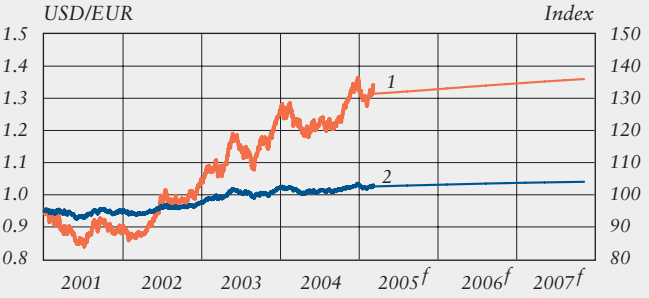
Short-term interest rates and interest rate expectations*



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: Bloomberg and Bank of Finland.

Chart B.

Exchange rate assumptions



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.

raised the resource utilisation rate. One aspect of this is a slight improvement in the employment situation. Together with the weakening dollar, this has increased inflationary pressures.

Higher inflation expectations in the United States have meant that real short-term interest rates have remained very low despite the rise in nominal rates. In both the United States and the euro area, real short-term interest rates are close to zero. Relative to the favourable economic situation, monetary policy is very relaxed, particularly in the United States.

In Japan, short-term nominal rates remain close to zero, and the Bank of Japan is not expected to tighten its monetary policy in the near future. Japanese growth slowed again during the course of 2004, and there is still no clear sign of a rise in consumer prices in the country. In the United Kingdom, the Bank of England has held its policy rate at 4¾% for the past six months, and the markets do not expect any major changes in the immediate months ahead. Consumer price inflation has remained moderate. The outlook for domestic consumer demand and inflationary pressures weakened slightly during the autumn.

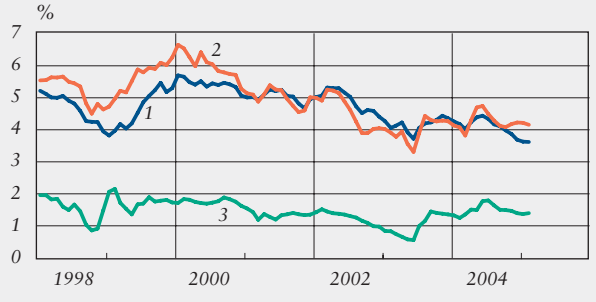
Short-term rates in Sweden and Norway have remained close to 2%, and the markets do not expect either central bank to change its policy rate in the immediate months ahead. Inflation slowed in both countries last year, and there is no indication of any significant increase in inflationary pressures in the near future. The inflation outlook is favourable despite last year's strong recovery in economic growth. In 2005, the pace of growth is unlikely to accelerate any further.

Long-term interest rates in the main industrial economies have remained very low for several years now (Chart 2). One reason for this has been the confidence of financial market participants that inflation will remain low. Meanwhile, the low level of real long-term interest rates is partly a consequence of the sluggish pace of growth in fixed investment.

Long-term interest rates in the euro area have come down during the course of the past six months. Long-term inflation expectations have scarcely changed, and the fall in long-term interest rates has in fact meant a reduction in real long-term rates. This can be deduced from a comparison of the yields of inflation-indexed and standard bonds.[1] Long-term interest

Chart 2.

Long-term interest rates (10 year)



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

Sources: European Central Bank, Reuters and Bank of Finland.

[1] Here, 'long-term inflation expectations' refers to the break-even inflation rate. This is calculated by subtracting the interest on bonds linked to the consumer price index from the interest on standard government 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.

rates in the United States have hardly moved during the past six months. In contrast to the euro area, long-term inflation expectations in the United States have risen slightly. Real long-term interest rates are historically very low in both the euro area and the United States.

The decline in long-term interest rates since spring last year reflects in part a slight deterioration in the outlook for the world economy. The rise in the price of crude oil during the course of 2004 did not lead to a significant increase in the market's inflation expectations. On the contrary, it was seen as depressing the outlook for growth in the developed industrial economies. The different trends in long-term interest rates between the euro area and the United States essentially reflect the differences in their long-term inflation expectations. Inflation expectations in the United States rose relative to the euro area partly because of the faster pace of US growth. Another important reason is the appreciation of the euro and the decline in the external value of the dollar.

Long-term interest rates in Japan have remained very low, despite a temporary rise close to 2% last spring. Faster economic growth and reduced deflationary pressures caused the market to bring forward its expectations as to when Japan would abandon its zero inflation policy. However, there was a considerable easing in the pace of Japanese growth during the course of the year, and long-term interest rates have declined since the summer.

The Chinese authorities last year adopted measures to restrict investment growth in certain sectors of the economy, with the objective of preventing overheating. The steps taken were largely administrative, but in the autumn the central bank also raised its policy rate. This was the first change to the policy rate in China for a long time, and it has been interpreted as marking a shift in Chinese economic policy towards a greater reliance on market mechanisms. There is a fairly widespread expectation that the rising trend in Chinese interest rates will continue. The increase in the policy rate has also been assessed as anticipating the adoption of a more flexible exchange rate system than the present one, under which the Chinese currency has been in effect pegged to the value of the dollar.

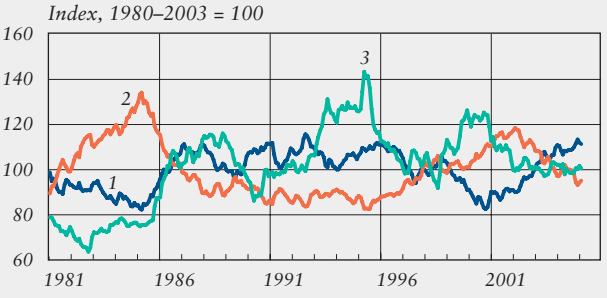
Monetary policy in the major Asian economies outside Japan and China has for the most part continued relaxed, despite rapid economic growth and a slight increase in inflationary pressures in a number of countries in the region. Part of the background to the relaxed monetary policy is the wish of several of these countries to prevent the significant appreciation of their currencies against the US dollar as they pursue the continuation of export-driven growth. A significant rise in interest rates would attract investment in their interest-bearing instruments, which would in turn strengthen their currencies.

The interest rate spreads between corporate and government bonds have remained very narrow in the Western industrial economies. This is partly due to strong corporate earning capacity and a drop in the level of indebtedness.

In addition, the growth outlook for the world economy is bright and real interest rates low. It has been estimated that the persistence of narrow interest rate spreads has encouraged investors to increase the level of risk they are willing to bear. As well as narrower interest rate spreads, the financial position of the corporate sector has also been enhanced by the fact that, according to survey data, the terms of credit on corporate bank loans in both the euro area and the United States have become easier.[2]

Chart 3.

Real trade-weighted exchange rates*

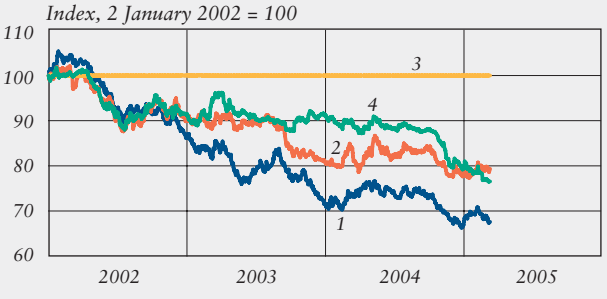


1. Euro area
2. United States
3. Japan

* Based on consumer prices. The curve rises as a currency appreciates. The most recent figures are based on nominal exchange rates.
Source: IMF.

Chart 4.

External value of the US dollar



The curve falls as the dollar weakens.

1. Euro
2. Japanese yen
3. Chinese yuan
4. South Korean won

Source: Reuters.

Exchange rates

In 2004, the external value of the euro rose from the previous year both nominally and in terms of real effective exchange rates (Chart 3). Even so, the real value of the euro did not rise much above the average for the 1990s. The euro rose primarily against the US dollar, there being little if any change against the British pound or the Japanese yen.

Despite the rise in the euro, the international price competitiveness of Finnish output – measured according to the real effective exchange rate – scarcely moved in 2004 relative to the previous year. Compared with the average trend in the rest of the euro area, the price competitiveness of Finnish output benefited from the marked deceleration in the pace of inflation. The price competitiveness of Finnish output has declined slightly over the past four years. It nevertheless remains considerably better than the average for the 1980s and 1990s.

Euro appreciation gathered pace during the final quarter of 2004, despite the lack of any real improvement in the economic outlook for the euro area and the expectation that any increases in the ECB's policy rate would be postponed well into the future. Growth in the flow of investment capital into euro area securities supported the appreciation of the euro.

[2] European Central Bank (January 2005), Euro Area Bank Lending Survey (www.ecb.int/stats/money/lend/html/index.en.html) and Federal Reserve Board, January 2005 Senior Loan Officer Opinion Survey on Bank Lending Practices (www.federalreserve.gov/boarddocs/SnLoanSurvey).

There was a marked depreciation in the value of the US dollar during the second half of 2004, despite the Federal Reserve raising its policy rate several times during this period (Chart 4). Last year's decline in the dollar was partly a reflection of concern on the financial markets over the financing of the growing US current account deficit. To date, financing the deficit has not been a problem, although the precise structure of financing has changed somewhat. During the first half of 2004, Asian central banks purchased large quantities of US bonds. Towards the end of the year, however, the financing of the deficit became increasingly dependent on direct investment and investment in American stocks and corporate bonds, whereas there was a degree of ebb in the flows of investment into US government bonds.

The US current account deficit continued to grow last year, driven both by higher import prices caused by the rise in the price of oil and by larger growth in import volumes than in exports. Despite the decline in the value of the dollar, no significant contraction in the current account deficit can be expected in the next few years, particularly if domestic demand in the United States continues to grow faster than in the other major economies.

The British pound fell back relative to the euro towards the end of last year, with the Bank of England not raising its policy rate again after the first half of the year. In recent months, the exchange rate of the pound has fluctuated without any clear direction. The British currency has benefited over the past few years from a relatively high level of interest rates compared with the other main economic regions, although a growing current account deficit has at the same time exerted pressure in the opposite direction. In terms of its trade-weighted index, the exchange rate of the pound has hardly varied in recent years.

Of the other European currencies, both the Swedish krona and the Norwegian krone have since autumn 2004 been rising slightly in terms of their trade-weighted index. The outlook for the Swedish economy is bright, while the Norwegian krone has been bolstered by the rise in oil prices. The Russian rouble has also benefited from the rise in oil prices, and from the flow of inward investment. The Bank of Russia has, however, controlled the appreciation of the rouble through currency intervention, and the currency's real effective exchange rate has not significantly strengthened since the middle of last year.

Of the currencies in ERM II, the Estonian kroon and Lithuanian litas have remained precisely on their central rates, while the Danish krone and Slovenian tolar are close to theirs. The currencies of the other new EU member states have continued to strengthen against the euro. This is at least partly due to the efforts of investors to find higher yields at a time of low interest rates in the larger industrial economies.

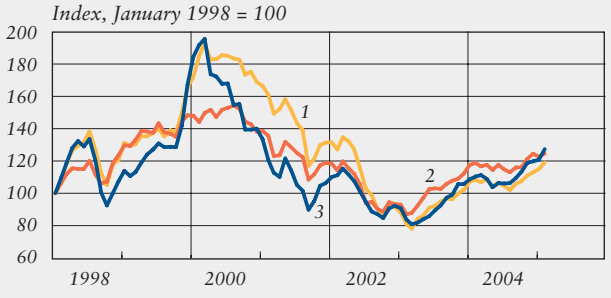
Of the major currencies in East and Southeast Asia, some have in recent months gained against the dollar. During the first half of last year the Asian authorities, particularly in Japan,

were still intervening in the exchange markets in order to prevent a rise against the dollar. As a result, their currencies remained remarkably stable relative to the US currency. However, towards the end of the year and in the early months of 2005, the currencies of many Asian countries (eg South Korea and Taiwan) did finally gain against the dollar. This also reflects the efforts of investors to find higher yields from higher-risk investments. Stock prices in, for example, South Korea have made notable gains since the start of this year.

The Chinese yuan has in practice remained pegged to the dollar. However, expectations on the futures markets over its possible revaluation have increased in recent months by comparison with summer 2004. This is partly due to the measures proposed by the Chinese authorities to prepare the ground for the gradual removal of the exchange rate peg. However, the revaluation of the yuan would not resolve the problem of the US current account deficit, as China accounts for only about 10% of US foreign trade.

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.

Stock markets

Share prices in the euro area and the United States rose during the second half of last year (Chart 5). The favourable stock market trend is based on continued low interest rates, strong financial results in the corporate sector and continued strong growth in the US economy. Viewed sector by sector, the main gains in the early months of 2005 in both the United States and the euro area have been by companies in the energy and commodity sector, whereas share prices in the ICT sector have not moved forward.

Euro area shares have continued to gain since the start of this year, while US prices have in contrast remained mostly unchanged. These different trends have possibly been influenced by the rise in short-term interest rates in the United States. The level of interest rates is of relevance to share prices because a fall in interest rates reduces the yield from alternative investment targets and hence increases the attractiveness of equity investments.

Corporate profits in 2004 were well up on the previous year in both the euro area and the United States. In the euro area, there was a particularly strong increase in corporate profits: according to some assessments the combined operating profits of major companies was 80% up on the previous year. According to national accounts figures, year-on-year profit growth came to a halt in the United States during the third quarter of 2004, whereas in the euro area, profits continued to grow, measured in terms of gross operating profit.

Japanese share prices fluctuated up and down throughout 2004, without any clearly discernible direction. In the early part of 2005, however, the Japanese stock market has also been rising. This is primarily a reflection of growth in corporate profits, achieved through stronger exports and healthier balance sheets. Sluggish growth in the Japanese economy does not appear to have hampered the rise in share prices.

In the early months of this year, share price rises have been much sharper in many emerging economies – whether in Latin America, the new EU member states or Asia – than in the large industrial economies. This reflects in part the low level of interest rates in the industrial economies and the efforts of investors to find higher yields from alternative investments.

In Finland, share prices have risen since the middle of 2004 in line with the rest of the euro area. The HEX portfolio index, in which Nokia's weight is restricted to 10%, has risen during this period slightly faster than share prices in the large industrial economies. This rise has been largely caused by the strength of traditional sectors in the energy, chemical and metal industries, whereas shares in the IT sector and electronics have performed more sluggishly. In the national accounts, the gross operating surplus in 2004 was 5% up on the previous year – having declined towards the end of 2003. The pace of growth was not, however, particularly fast compared with the long-term average.

Housing prices

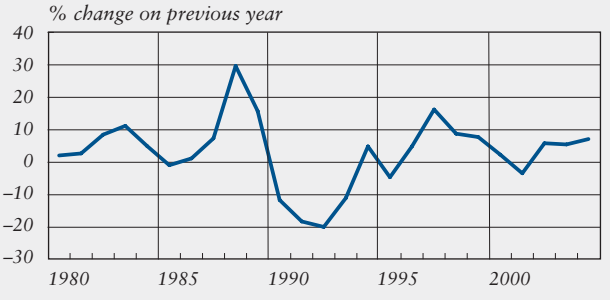
Over the past five years, Finnish housing prices have on average risen slightly over 3.5% per annum in real terms (Chart 6). In 2004, they rose 7%. During the course of the year, however, there was a clearly discernible flattening in the pace of the rise: during the second half of the year, real housing prices remained on average more or less unchanged. Prices in the Helsinki metropolitan area rose slightly more slowly than elsewhere in the country. The prices of detached houses rose slightly faster than the prices of apartments and terraced houses.

An examination of the markets for owner-occupied and rental housing would suggest that the relationship between these markets is fairly well balanced. The indices measuring the level of debt caused by housing purchases also give no great cause for concern.

Although housing prices have risen faster than household incomes, the median household debt burden index,

Chart 6.

Real housing prices in Finland



Source: Statistics Finland.

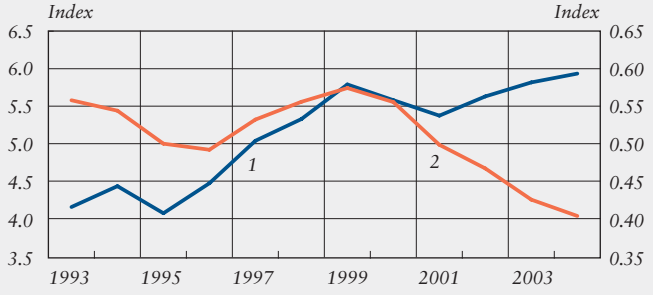
which indicates the level of debt caused by housing purchases, has clearly declined in recent years (Chart 7). This indicates that the annual financing costs (the sum of interest expenses and capital instalments) from the acquisition of one square metre of living space have become significantly less relative to the disposable income of the median household. This is due to both lower interest rates and longer repayment periods.

Indeed, the increase in housing prices in recent years can be largely attributed to the combination of growing household incomes, lower interest rates and longer repayment periods. Although there may have been cases at regional or local level where prices have departed from the level defined by pricing fundamentals, there is nothing to indicate the existence of a general housing price bubble, ie a self-fuelling upward spiral of price expectations.

There is a degree of uncertainty surrounding the future trend in housing prices. On one hand, the expected gradual rise in market interest rates could cause pressures for a fall in prices. On the other hand, household incomes are expected to continue their stable growth, and the present strong competition between providers of housing loans will continue. The price trajectory in the immediate future will be determined by a combination of all these factors. A significant decline in housing prices is, however, unlikely.

Chart 7.

Housing affordability indices*



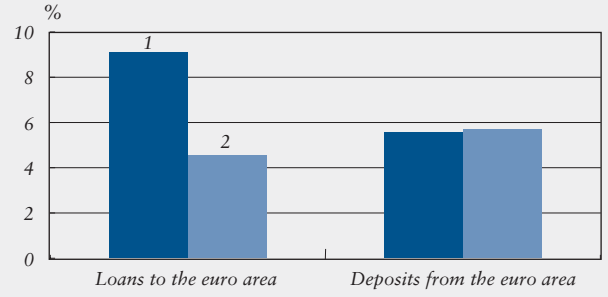
1. Broad housing affordability index (left-hand scale)
2. Median household debt burden index (right-hand scale)
Sources: Statistics Finland and Bank of Finland.

**The broad housing affordability index is calculated by dividing the housing price index by households' disposable income. The median household debt burden index provides a fuller description of the financial burden on the median household from the purchase of one square metre of housing on 80% debt financing. It is produced by dividing the sum of post-tax interest expenditure and capital instalments on a housing loan by the income of a median household.*

Interest expenditure is calculated by applying to the debt arising from the purchase of one square metre of housing the average rate of interest on new loans minus a deduction for interest expenses for the appropriate rate of withholding tax. The capital instalment is estimated by dividing the debt arising from the purchase of one square metre of housing by a housing loan maturity of 11 years until 1998, growing steadily thereafter to 16 years by 2004.

Chart 8.

Annual growth in stock of loans and deposits in Finland and the euroa area



1. Finland
2. Euro area
Source: European Central Bank.

Bank loans and deposits

During 2004, deposits grew by approximately 4.5% overall, and loans by approximately 9.1%.[3] Viewed by sector, public sector deposits grew 9%,

[3] The review of loans and deposits relates to Finnish financial institutions' loans to and deposits from the euro area. The borrowers and depositors are mainly Finnish residents.

while loans fell by 6%. This was due to temporary factors. The end of the year saw the issue of a large number of treasury bills. This shows up as a reduction in loans from financial institutions and a temporary increase in central government cash reserves.

In the other sectors – including households and non-financial corporations – growth in deposits was 5%, and growth in loans 9%. Most of this growth in loans was due to growth in the demand for housing loans (see Box 2).

The stock of deposits in Finland grew almost as quickly as the average for the euro area (Chart 8). In contrast, the stock of loans was almost 4 percentage points above the euro area average and also well above the median for countries in the euro area. Finland's position relative to other countries is explained by the fact that, in addition to household loans, there was also fairly rapid growth in corporate loans in 2004. In euro area comparison, the position of Finnish companies and their outlook for the future were fairly bright in 2004, and they were therefore well placed to bear loans.

Deposits as a proportion of the total balance sheet of financial institutions contracted from 61% to 57%, and loans from 42% to 41%. To some extent, financial institutions funded the faster growth in their loan stock by issuing more debt instruments. Of the counteritems to deposits and loans, there was particularly strong growth in foreign assets and liabilities. There was also an increase in other claims and liabilities of financial institutions, due in part to an increase in derivatives exposures.

The stock of deposits is expected to continue to grow during the forecast period. Moreover, there is no sign of a deceleration in the growth of alternative investment objects, such as mutual funds and savings and pension insurance. The growing popularity of alternative investment objects means growth in the stock of deposits will remain fairly subdued, despite the expected favourable development of household and corporate finances. Historical experience suggests a possible small increase in interest rates would have little impact on deposits.

There is some degree of uncertainty surrounding developments on the loans market. If interest rates were to rise, this would subdue credit demand in the household sector. On the other hand, competition for housing loan customers remains strong. Further recovery can be expected in the demand for corporate loans. Results from the bank barometer of the Finnish Bankers' Association suggest growth in the stock of corporate loans over the next 12 months.

Box 2.

Housing loans

The stock of housing loans in Finland continued to grow strongly in 2004, at an annual rate of more than 15%. In fact, it has increased by over 10% annually since the start of the present decade. This is not exceptional from an international perspective: the growth in the housing loan stock has for long clearly exceeded that of household income in most industrial countries.[1]

A comparison between euro area countries reveals the Finnish trend has been fairly close to the median development in the euro area (Chart A). Of euro area countries, housing loan stock growth last year was under 10% only in Germany and Portugal, where the economic slowdown has been exceptionally strong. In Germany, housing prices have not risen for ten years.

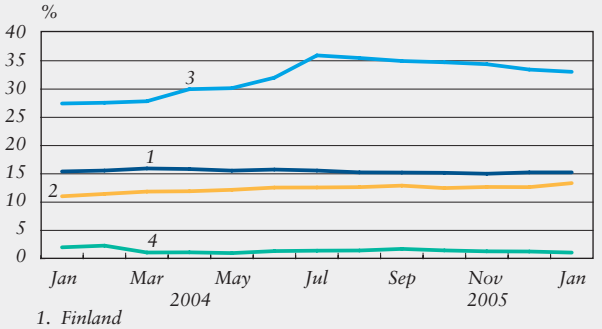
According to estimates by the Bank for International Settlements, the strong growth in lending observed in a number of countries is attributable to low interest rates coupled with structural changes in the financial markets. These factors also affect Finland.

Interest rates on new housing loans in Finland averaged 3.14% at the end of 2004, an exceptionally low level both internationally and historically. The low level of interest rates has had a clear impact on demand for loans. Interest rates on loans have declined in recent years both as a result of the fall in reference rates and due to a narrowing of banks' interest rate margins.

Growth in the stock of loans has also been fostered by a change in the structure of the loan market, with a lengthening in the average loan maturity. Lengthening maturities mean a decrease in annual repayments, and this is reflected in accelerated growth in the stock of loans. A rough calculation shows that the lengthening of loan maturities and the consequent decrease in repayments accounted for about 2 percentage points of the

Chart A.

Annual growth of housing loan stock in the euro area

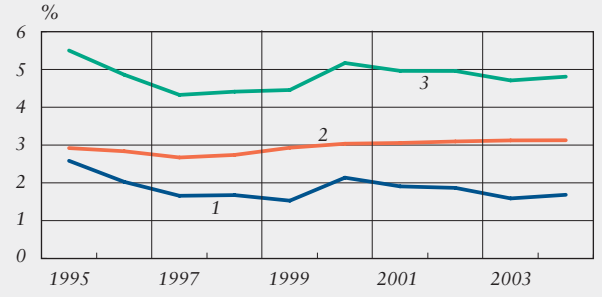


1. *Finland*
2. *Euro area median*
3. *Euro area maximum*
4. *Euro area minimum*

Source: European Central Bank.

Chart B.

Housing debt burden indices



1. *Interest payments/income*
2. *Capital instalments*/income*
3. *Interest payments and capital instalments/income*

** Bank of Finland estimate.*

Sources: Statistics Finland and Bank of Finland.

[1] *BIS Quarterly Review March 2004 – International banking and financial market developments. Bank for International Settlements.*

annual growth rate of the housing loan stock in 2004.

Indebtedness increases households' sensitivity to interest rate changes. The most commonly used reference rate for housing loans in Finland is the 12-month Euribor. High indebtedness also raises concerns over some households' ability to manage their debt burden.

Calculations indicate that, although the housing loan stock has risen rapidly, the household sector's debt burden related to the servicing of housing loans – the sum of planned repayments and interest payments relative to disposable income – has remained fairly stable (Chart B). Decreased lending rates, longer loan maturities and higher household income have compensated for the effects the strong growth in the housing loan stock would otherwise have had on the average household's debt servicing expenses.

Although the housing loan debt burden of the average household has thus not increased, some households are nevertheless deeply indebted.[2] For these households, a rise in interest rates or unemployment could lead to major and long-lasting financial problems.

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[2] *The distribution of household debt was discussed in more detail in Bank of Finland Bulletin 3/2004 (Box 2).*

Supply

Output

Total output at the end of 2004 was well above the Bank of Finland's forecast of last summer (Bulletin 3/2004), as the national accounts data have since been adjusted upwards. In 2003, GDP grew 2.4%, almost half a percentage point more than forecast, and in 2004 growth accelerated to 3.7%, which is well above the estimate in the September forecast. Manufacturing output in 2004 was up by a good 5%, being boosted particularly by the electrical engineering and electronics sector, which recorded a leap of as much as 13% from the previous year in its volume index. Transport and communications also recorded brisk growth in 2004. In contrast, growth was slower in housing construction.

GDP in January to June 2004 was approximately 2% up on the second half of 2003, and growth continued at the same pace through the second half of the year. Admittedly, growth in industrial output slowed towards the end of the year, when a stronger dollar and weaker export prices impeded output growth in the forest industries, for example.

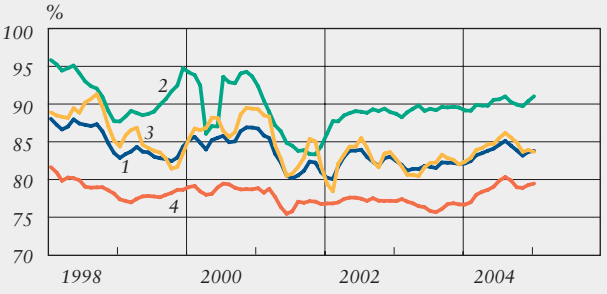
Capacity utilisation rates have already been rising for a couple of years now, although there was a slight corrective adjustment at the end of 2004 (Charts 9 and 10). Despite some decline, capacity utilisation in the forest industries has remained above 90%, while in the metal industry it rose last year to almost 85%, and in the rest of industry to almost 80%.

Capacity utilisation rates reflect cyclical fluctuations in economic activity as companies adjust their capital utilisation to changes in demand. Although the capacity utilisation rate in manufacturing industry has begun to rise again in recent months, this would seem to reflect rather a flattening out in economic growth than a new acceleration.

Expectations of industrial output have weakened in the early months of the year compared with the end of 2004, according to the latest business tendency survey by the Confederation of Finnish Industries. However, the survey evidence indicates that companies in industry expect their

Chart 9.

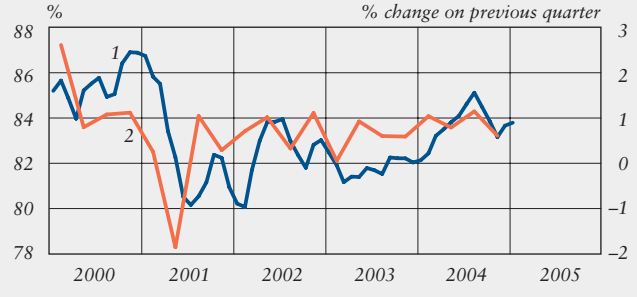
Capacity utilisation rate*



1. Manufacturing
2. Forest industries
3. Metal industry
4. Other industry
** Seasonally adjusted 3-month moving average.*
Source: Statistics Finland.

Chart 10.

Capacity utilisation rate and GDP



1. Capacity utilisation rate, manufacturing (left-hand scale)*
2. GDP at market prices (right-hand scale)
** Seasonally adjusted 3-month moving average.*
Sources: Statistics Finland and Bank of Finland.

product prices to strengthen over the next few months. In housing construction, too, the production outlook for the near future has normalised, while the service sector, too, does not expect a significant increase in output in the first half of this year.

All in all, the forecast for GDP growth in 2005 is 3%. In 2006 and 2007, growth will even out at just under 3% as it adjusts closer to long-term trend growth.

Capacity constraints in both labour supply and domestic output will begin to gradually hinder growth in the Finnish economy in the next few years. In the labour market, capacity constraints will begin to be felt due to problems with matching supply and demand, and also as a result of population ageing. Moreover, during the forecast period, unemployment will come down close to the estimated level of structural unemployment.

The slowing pace of growth in the productive capital stock coupled with a gradual contraction in labour supply will make more rapid development of labour-saving and capital-saving technologies essential if domestic output is to be able to match growth in demand. In the forecast, strong domestic demand is reflected already in import growth and a contraction in the current account surplus.

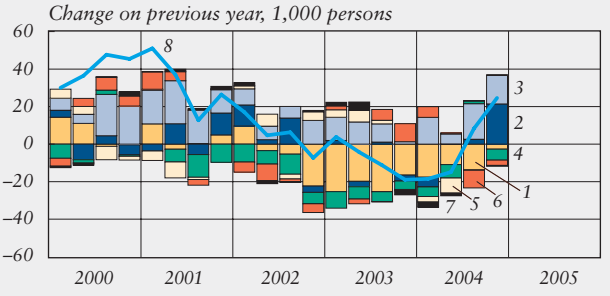
Employment and labour supply

During the second half of 2004 the labour market trend was slightly better than expected. The average unemployment rate in 2004 was under 9%, while the employment rate climbed above 67%. Employment varied from sector to sector (Chart 11). Industrial employment declined, service sector employment grew, while construction sector employment was more or less unchanged. Public sector employment grew by around 8,000 employees in the years 2002–2004, while over the same period the private sector shed just over 16,000 jobs.

Employment prospects have varied from sector to sector (Chart 12). In 2004, the employment outlook in

Chart 11.

Number of employed by sector

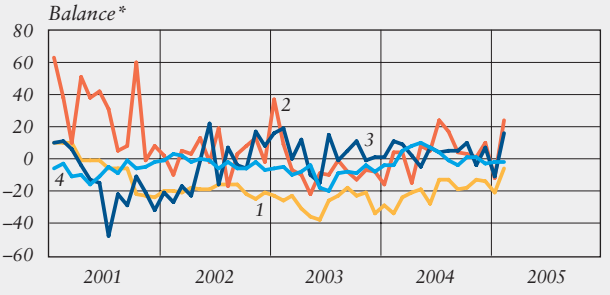


1. Industry
2. Trade
3. Other public services
4. Agriculture and forestry
5. Construction
6. Transport
7. Unknown
8. Total employed

Source: Statistics Finland.

Chart 12.

Employment expectations



1. Industry
2. Services
3. Construction
4. Retail sector

* Seasonally adjusted.

Source: European Commission.

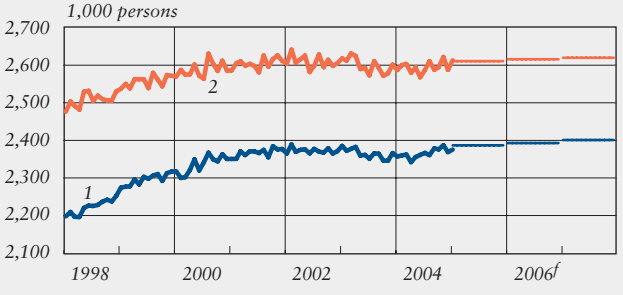
industry remained negative despite the brisk growth in output. In contrast, the employment outlook in retailing has remained fairly stable over the past six months, and the early months of 2005 have been very positive in both construction and services. Recent developments could suggest that industrial companies in particular viewed the cyclical upturn as short term, and therefore adjusted their labour input primarily by increasing efficiency. In the longer term, however, once corporate earning capacity and competitiveness have improved, the pendulum could well swing back in the opposite direction.

Consumers' view of the labour market has become exceptionally optimistic. According to Statistics Finland's consumer barometer, by February 2005 consumers no longer believed unemployment would get any worse. Respondents' belief that they themselves were potentially threatened by unemployment had also receded further since the previous survey.

The labour force is expected to grow in 2005–2007, but only very slowly (Chart 13). The employment rate at present is above the average for the EU 15, and the forecast is for it to rise to 67.4% this year and 67.6% in 2006. This slight rise in the average employment rate is explained by an end to the downward trend in private sector employment, coupled with approximately 1% annual growth in public sector employment during the forecast period.

Chart 13.

Labour force and number of employed



1. *Number of employed*
2. *Labour force*

Sources: Statistics Finland and Bank of Finland.

Productivity and capital

Economic growth can be based on increased input of labour and capital or higher productivity – or both. Productivity, in turn, can be boosted by training or by providing additional physical capital. Changes in technology – the development of new products, services and production methods or the adoption of already existing technology – can also boost productivity. Information and communication technology (ICT) is an example of a technology in general use that can at its best have an extensive impact on efficiency both in the home and at work, and hence on the productivity of the economy as a whole.

In Finland, due to population ageing, economic growth can no longer be based as much as in the past on growth in labour input; instead, it must be based on productivity growth and the provision of additional physical capital through investment. Because much of the structural change brought by the ICT revolution still lies ahead in Finland, the productivity benefits of information technology (IT) will also be more important in the future. In the next few years, international

competition will lead to IT production being transferred to low-wage countries. Future productivity benefits will therefore have to be derived more from the exploitation of IT rather than on the production of IT equipment. Financial administration and human resources management, customer relations and the control of production processes in a number of sectors can all benefit from efficiency benefits derived from the application of information technology. The benefits of IT are particularly salient in those service sectors in which information plays a major role.

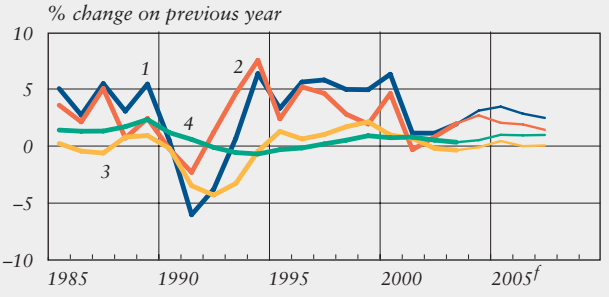
There is now a need for the effective exploitation of IT in the management of production chains fragmented by globalisation. In the public sector, too, productivity can be considerably improved with the help of IT. One example could be the more effective integration of information systems in the different branches of government.

The importance to corporate investment decisions of the ongoing international competition in productivity has become increasingly clear across all sectors, including the home market. Although productivity growth at the level of the economy as a whole enhances competitiveness at national level, national competitiveness and corporate competitiveness are two different things. As companies can take their competitive advantage with them when changing the country in which they are located, productivity in the domestic market can have an important influence on where companies locate, and therefore on the possibilities for raising living standards.

Chart 14 divides private sector output growth into changes in labour and capital input and growth in total factor productivity. The chart shows that the economic growth of recent years has been dependent primarily on growth in total factor productivity. Labour input, ie the number of employed, remained almost unchanged in 2003 and 2004, but there should be a slight increase during the forecast period. At the same time, capital input is expected to continue its marginal growth. Although a pick-up in investment activity is forecast, the contribution of capital input to economic growth will remain negligible in the immediate years ahead.

Chart 14.

Output and production inputs in the private sector



1. *Output*
2. *Total factor productivity*
3. *Labour input*
4. *Capital input*

Sources: Statistics Finland and Bank of Finland.

Table 1.

Labour productivity in the private sector

% change on previous year

	2002	2003	2004f	2005f	2006f	2007f
Labour productivity	1.5	2.7	3.3	2.6	2.9	2.4
Capital intensity	0.7	0.7	0.6	0.5	1.0	0.9
Total factor productivity	0.8	2.0	2.7	2.0	1.9	1.4

f = forecast

Sources: Statistics Finland and Bank of Finland.

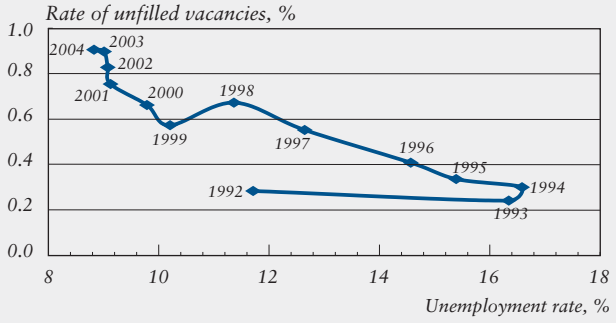
The private sector output to capital stock ratio – ie the average productivity of capital – grew dramatically during the second half of the 1990s. On one hand, fixed investment has focused partly on intensifying the utilisation of the existing capital stock. On the other hand, this also reflects an improvement in the quality of the capital stock, an improvement that has come about through changes in the structure of production. Because improvement in the quality of the capital stock is not measured in the national accounts, it is visible instead as growth in total factor productivity.

In the private sector, 2004 saw a cyclical increase in the pace of growth in labour productivity to 3.3% (the equivalent figure for the economy as a whole being 3.6%). In 2005–2007, the pace of growth is expected to flatten out somewhat.

For the forecast period as a whole, it is estimated that private sector productivity growth will reach just around 2.5% (Table 1). A moderate rise in public sector labour productivity is forecast, echoing the pattern of recent years. Despite collective efforts to raise productivity, there has been little growth in labour productivity in the public sector in recent years. In the immediate years ahead there will continue to be only sluggish growth in this area. To date, the collective efforts within the sector to raise productivity have not made any significant impact.[1]

Chart 15.

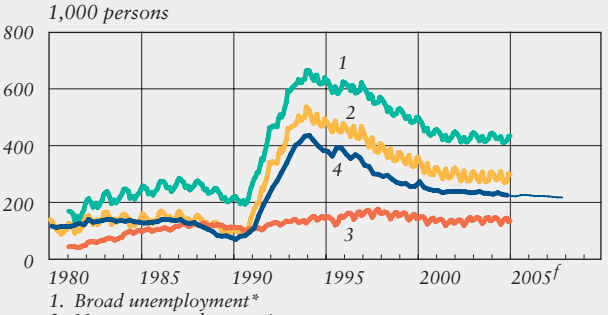
Beveridge curve, 1992–2004



Sources: Ministry of Labour and Statistics Finland.

Chart 16.

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.

A tight labour market

The Finnish unemployment rate has declined only marginally since 2001. In February 2005, according to Statistics Finland, there were 237,000 unemployed in Finland (9.2% of the labour force), ie 8,000 more than a year earlier. Statistics Finland's corresponding seasonally adjusted unemployment rate for February was 9.0%.

Unemployment can be cyclical or structural. Favourable economic conditions will reduce cyclical unem-

[1]See Helvi Kinnunen's article 'Public service productivity, the labour market and Finland's public finances' on page 79 below.

ployment but have no impact on structural unemployment, even if the economy is simultaneously suffering a labour shortage. Chart 15 illustrates structural unemployment with the Beveridge curve, which shows the relationship between unfilled vacancies and unemployment. The further the curve is from the origin, the greater is the mismatch between the labour force and unfilled vacancies regionally, occupationally, etc. Unemployment should normally fall as the number of unfilled vacancies grows. Although the Beveridge curve is not an entirely unproblematic way of showing the match between labour supply and demand, it is nevertheless indicative of the trend in cyclical and structural unemployment.

Over the years 1994–1998 the economic conditions were favourable and structural unemployment remained almost unchanged, as the number of unfilled vacancies grew at the same time as unemployment was falling. The problem of labour market mismatch was less severe in 1999–2001, as at this time there was a lower level of unemployment relative to the number of unfilled vacancies. Since 2001, structural unemployment has once again become more severe, as the decline in the unemployment rate has come to an almost total halt, even though there has been a marked increase in the ratio of unfilled vacancies to the total labour force. In 2004, there were more new unfilled vacancies in industry and the construction sector than in other sectors, although it was specifically in these sectors that the employment trend was weakest. This could be due partly to inadequacies in skills and training, but also to regional mismatches due to labour force immobility, demographic factors or problems with labour supply incentives, for example.

All in all, the unfavourable trend in population age structure allied to the problems of labour market mismatch will hamper positive labour market development in the next few years. The impact of demographic factors will become increasingly apparent over the next few years in labour supply, as the cohorts entering the labour market will be small relative to those leaving it. Towards the end of the forecast period this will also create upward pressures on real wages.

The number of unemployed should fall slightly during 2005–2007, with the unemployment rate also coming down, to 8.4% (Chart 16). The fall in the unemployment rate will tighten the labour market to some extent, but a more significant problem will be the poor match between the unemployed and unfilled vacancies. Without more effort to increase the efficiency of the labour market, it is estimated that the rising educational and skills level of the labour force will be insufficient to compensate for the problems of matching labour supply and demand caused by population ageing and labour force immobility.

Box 3.

Terms of trade and income formation

In public debate, deterioration in the terms of trade – ie the decline in export prices relative to import prices – has in recent years often been posited as a weakness in the Finnish economy, and their improvement as a strength. However, such a black-and-white interpretation can be misleading, because the impact of changes in the terms of trade depends on the factors underlying these changes.

Fluctuations in international prices – particularly the world market price of crude oil – have always been an important factor behind changes in the terms of trade. In the 1980s and 1990s, the terms of trade were also affected by exchange rate changes and trade with Russia. Since 1995, the terms of trade have been heavily dependent on changes in Finland's production structure, and particularly on the growing importance of the electronics industry. The decline in the terms of trade with falling export prices in the electronics industry has, however, not been an indicator of slow economic growth. On the contrary, real GDP has grown rapidly with the sharp increase in electronics output as a result of improved productivity. On the other hand, a fall in the prices of electronics exports means that real GDP growth is an even more inaccurate measure of the standard of living and rising incomes in Finland.

Current GDP is often used as a rough indicator of real income formation. However, if there are significant or trend changes in the terms of trade, real GDP growth can give an inaccurate picture of real income formation. GDP volume underestimates purchasing power when the terms of trade are improving. For example, when import prices fall, a smaller volume of exports is needed to pay for a set volume of imports, which means that more purchasing power can be allocated for domestic demand. Similarly, when deterioration in the terms of trade is caused by falling export prices, real GDP growth overestimates real purchasing power (see Chart).

In the long term, the terms-of-trade effect has been cumulatively negative: ie the pace of growth in terms of trade-adjusted GDP, which is the measure of real total income development, has been slightly slower than that of the actual volume of GDP[1] (see Table). From 1975 until the mid-1980s, the real standard of living grew at a slower pace than volume growth in GDP. After that, until the mid-1990s, the terms of trade supported purchasing power in cumulative terms. Thereafter, the real purchasing power of GDP has grown significantly more slowly than real GDP.

In the past 10 years, the unfavourable trend in foreign trade prices has slowed growth in the standard of living by approximately 5 percentage points. The terms of trade had a particularly negative impact on the real purchasing power of GDP in the early years of the

[1] *The terms-of-trade effect is calculated by deducting export and import volumes from deflated net exports. The index is calculated as follows:*

$$T = \frac{X - M}{P} - \left[\frac{X}{P_X} - \frac{M}{P_M}\right].$$

When measured by the demand component of the balance of resources and expenditure, the formula means that total domestic demand is adjusted with the term $\frac{X - M}{P}$*, in which exports and imports have been deflated with the same price index. Statistics Finland uses a price index weighted by the value of exports and imports as the deflator of net exports (P). The OECD uses the import price index as the deflator in its calculations.*

Table.

Cumulative percentage change in real GDP and purchasing-power-adjusted real GDP

	1976–2004	*1976–1985*	*1986–1995*	*1996–2004*
Real GDP	*72.0*	*31.4*	*8.6*	*28.8*
Terms-of-trade effect	*–4.0*	*–1.5*	*1.5*	*–4.6*
Purchasing power minus real GDP	*67.9*	*30.0*	*10.1*	*24.2*

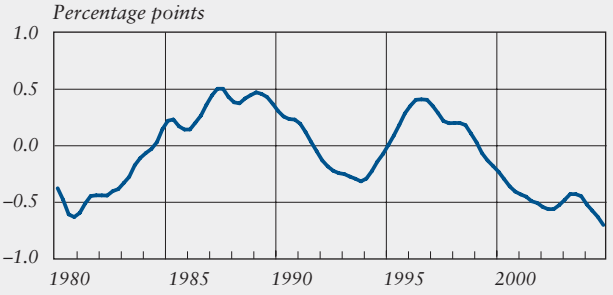
Sources: Statistics Finland and Bank of Finland.

present decade. In 2002–2004, the decline in the terms of trade slowed GDP growth – a measure of real purchasing power – cumulatively by almost 3 percentage points. In terms of the annual rate of growth, this means that, over the past three years, the deterioration in the terms of trade has already cut annual growth in the real purchasing power of GDP by approximately 0.7 percentage points. During the forecast period, the terms of trade will continue to deteriorate.

Given that the economy and its long-term development prospects are usually assessed on the basis of real GDP growth, ignoring the terms of trade can sustain overly optimistic expectations of income formation and purchasing power in the economy. This can hamper the formulation of fiscal policy and assessments regarding the financing of pensions. Ignoring the terms of trade can also result in excessive private sector indebtedness as a result of unrealistic income expectations.

Chart.

Terms-of-trade effect*



3-year moving average
**The difference between real purchasing power of GDP and real GDP growth.*
Sources: Statistics Finland and Bank of Finland.

Demand

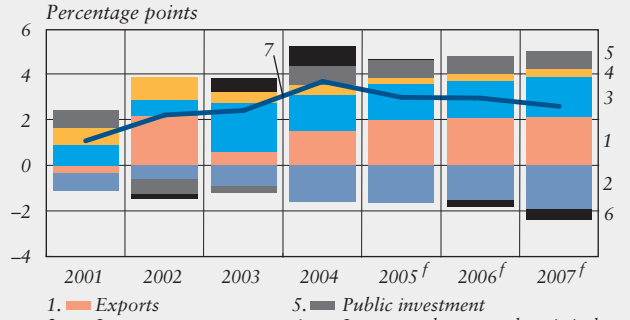
Consumption

The clear change in the structure of demand that took place in 2004 will continue throughout the forecast period. The positive growth impact of domestic demand, consumption and investment will strengthen, and the impact of net exports will decline (Chart 17). Private consumption and investment will be the driving forces of demand in the immediate future, while increased imports will cut the growth contribution of net exports. The growth contribution of inventories will turn negative during the forecast period. Economic growth will continue to be brisk, but the pace of growth will ease towards the end of the forecast period.

Retail growth continued at a brisk pace in 2004, reflecting the rapid growth in private consumption. Sales grew almost 4½%. This figure would have been even higher but for motor vehicle sales, which remained unchanged, as most of the increased demand caused by the reduction in car tax had already been met. Even so, car sales remained high.

Chart 17.

Growth impact of components of aggregate demand*



** Impact on GDP growth, % of previous year's GDP.*
Sources: Statistics Finland and Bank of Finland.

Private consumption has continued to grow strongly, with the pace of growth in 2004 above 3%. The increase in private consumption was supported by a positive trend in household incomes, with national aggregate wages up by as much as 4.5%. A rise in real disposable incomes was supported by tax cuts and very low inflation. The expected rise in nominal interest rates did not materialise, and there was no significant change in unemployment risk. During the forecast period, growth in total household assets will support private consumption. The situation is not expected to change in any fundamental way during 2005, with estimated consumption growth at almost the same pace as towards the end of last year.

Strong consumption in the months ahead is also suggested by the recent data on consumer confidence. According to the consumer confidence indicator published by Statistics Finland, consumer confidence in their own finances has remained strong, despite the fact there has been no real change in their views on the development of the economy as a whole. Consumers' positive view of their own finances gains support from the very moderate expected trend in real interest rates during the forecast period. Compared with consumers in the rest of the euro area, consumer confidence in Finland has been strong for almost ten years now (Chart 18). However, a weakening of household confidence – due, for example, to greater uncertainty over the economy – would result immediately in slower growth in private consumption (see the risk assessment in the final chapter of the forecast).

Private consumption has grown fairly rapidly and evenly in recent years. While the investment ratio has remained unchanged, since the start of the present decade private consumption has steadily increased its share of GDP (Chart 19).

The near future does not seem to hold any significant changes in the position of Finnish households. Household taxation will be gradually tightened due to stricter taxation of voluntary pension savings and the taxing of dividend income. Moreover, local government income tax will rise. On the other hand, the taxation of earned income will ease somewhat during the forecast period due to the tax cuts decided last autumn.

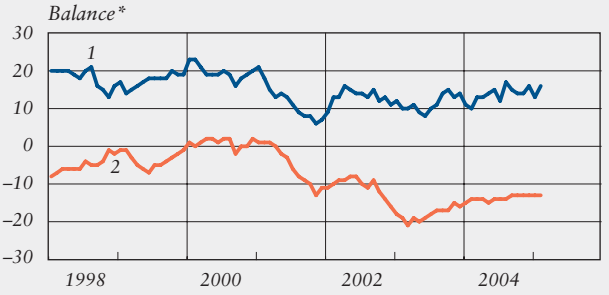
The forecast envisages growth in private consumption of over 3% per annum during the period 2005–2007, and a further increase in the GDP share of private consumption.

General government

General government finances will be stable during the forecast period (Table 2). The

Chart 18.

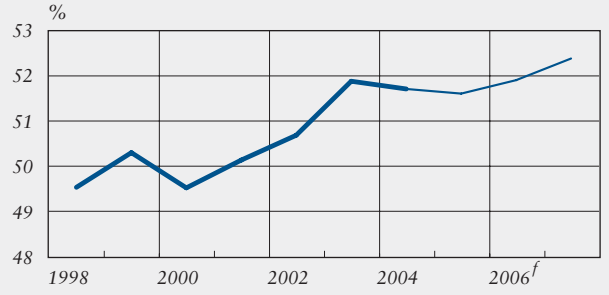
Consumer confidence indicator



1. Finland
2. Euro area
** Seasonally adjusted.*
Source: European Commission.

Chart 19.

GDP share of private consumption



Sources: Statistics Finland and Bank of Finland.

Table 2.

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

	2002	2003	2004	2005f	2006f	2007f
General government revenue	54.2	53.3	52.5	52.1	51.8	51.5
General government expenditure	50.0	50.9	50.7	49.9	49.7	49.5
General government primary expenditure	47.8	49.0	48.8	48.3	48.0	47.8
General government interest expenditure	2.2	2.0	1.9	1.7	1.7	1.6
General government net lending	**4.3**	**2.3**	**1.9**	**2.2**	**2.1**	**2.1**
Central government	1.4	0.3	0.1	–0.2	–0.4	–0.4
Local government	–0.2	–0.5	–0.7	–0.4	–0.2	–0.2
Social security funds	3.0	2.5	2.4	2.8	2.7	2.7
General government primary balance	6.5	4.3	3.8	3.9	3.8	3.7
General government debt	**42.5**	**45.3**	**45.1**	**43.9**	**43.2**	**42.4**
Central government debt	42.2	44.2	42.6	41.1	40.2	39.4
Tax ratio	45.6	44.6	44.0	43.8	43.4	43.1

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

combined fiscal surplus of central government, local government and the social security funds will remain a good 2% of GDP at the same time as revenue, expenditure and debt all contract relative to GDP. There will be a moderate annual decline in the total tax ratio. Government measures will be slightly supportive of growth throughout the forecast period.

Central government finances will move into deficit this year, and the planned tax cuts will keep the fiscal position of central government slightly in deficit in 2006–2007 as well. The forecast takes account of all the changes in the tax base for 2005, 2006 and 2007 included in the 2005 Budget and the general incomes policy settlement agreed in November 2004. The forecast does not include an estimate of the support for low-paid employment to be implemented in 2006, as the form of implementation has not yet been decided. Strong growth in central government transfers to local government will reduce the local government fiscal deficit. The growth in tax revenues alone would not suffice to reduce the deficit. The surplus in the social security funds will remain a good 2½% of GDP.

The general government fiscal surplus will rest entirely on the surpluses in the employment pension funds for central government, local government and the private sector. Without their contribution, the general government fiscal position would be just under 1% in deficit relative to GDP during the forecast period.

Gross central government debt will grow slightly during the forecast period, as annual central government budget deficits will have to be covered with additional debt. Revenue from the sale of assets will, however, slow growth in the debt this year. Gross general government debt will also continue to grow because local government finances will remain in deficit and the employment pension funds are not expected to increase their investments in government securities. On the contrary, they have in recent years sought to run down these investments, which has increased the level of general government EMU debt. The GDP ratio of both central and general government debt will, however, decline during the forecast period.

General government revenue relative to GDP will decline during the forecast period. The tax ratio will decline by approximately 1 percentage point due to the changes in taxation to be carried out during the forecast period. Although the decisions on taxation would appear to give some slight degree of support to economic growth during the forecast period, it is too early to judge whether the sort of decisions already implemented have achieved the desired results in supporting sustainable growth in competence, entrepreneurship and employment. The overall tax burden will be reduced, but Finland's position relative to other members of the EU will remain more or less unchanged. Low earners are taxed in Finland at the same rate as the EU average, but the tax progression remains steep and the taxation of high earners is much harsher in Finland than the EU average.

General government expenditure relative to GDP will also decline during

the forecast period. Nominal growth in the current primary expenditure[1] of general government will average almost 4% per annum, and investment expenditure approximately 3% per annum. Interest expenditure, meanwhile, will remain almost unchanged during the forecast period. The growth in current primary expenditure will be sustained by a steady increase in the sums paid out in employment pension and in employee numbers and earnings in the public sector. On the other hand, unemployment expenditure will remain almost unchanged.

The reformed spending limits procedure has led to effective control of central government spending and made it possible to cut taxes without endangering the objective of medium-term balance in central government finances. There nevertheless remains room for further improvement in the control of spending. One unfortunate reminder of this was the review of the division of expenditure on local government functions covered by central government transfers, which surprisingly produced additional transfers to local government of approximately EUR 500 million. An attempt has been made to reform the procedures and legislation in this area, but so far without visible result.

The above-mentioned review together with other proposed increases in expenditure means that the adjusted expenditure in the Budgets for 2006 and 2007 will remove almost all scope for additional expenditure under supplementary budgets. Indeed, it is highly likely that towards the end of the Government's present four-year term central government on-budget expenditure will grow faster than the spending limits permit.

Such an acceleration in expenditure growth would weaken the sustainability of general government finances, and indeed the long-term financing of general government expenditure does not seem sustainable.[2] Improving the sustainability of general government finances will require more efficient production of public services. Raising the productivity of public service provision has been adopted as one of the key strategic priorities for the public sector. However, it is as yet unclear what progress has been made. It would appear that, rather than improving, productivity in the provision of basic public services has actually declined in recent years.[3] On this evidence it would be dangerous to construct sustainability strategies for general government finances solely on the faith that the problem will be dealt with by higher productivity. A more secure approach would be to limit growth in public expenditure and avoid new projects that would expand the responsibilities of the public sector.

[1] Current primary expenditure includes expenditure other than interest and investment expenditure and capital transfers; it indicates the annual expenditure involved in carrying out the responsibilities of general government.

[2] See Helvi Kinnunen's article 'Expenditure pressures on public finances: how much can we afford?' Bank of Finland Bulletin 3/2004.

[3] See Helvi Kinnunen's article 'Public services productivity, the labour market and Finland's public finances' on page 79 below.

Investment

There was a notable pick-up in investment activity last year, and investment growth is also expected to continue during the forecast period. In 2004, private investment grew 6%, in contrast to declining investment in 2002 and 2003. The investment ratio for the economy as a whole was also up slightly on the previous year (Chart 20). In 2004, the GDP ratio of investment was 18.6%. Investment growth in the next few years is expected to lead to a slight increase in the investment ratio, while expenditure on outward investment will remain unchanged.

Investment growth in industry was motivated more by a need to maintain existing production capacity than to increase output per se. Thus, last year did not signify the start of an 'investment boom' among industrial companies, although barometer survey evidence, among other sources, does suggest some degree of willingness to invest.

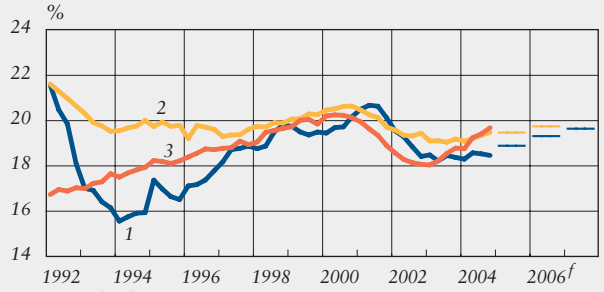
Investment has been primarily income-financed. According to a joint survey by the Ministry of Trade and Industry, the Bank of Finland and the Confederation of Finnish Industries, the use of outside financing has been negligible. The same is suggested by banking data.

According to an investment survey published by the Confederation of Finnish Industries in January, the value of industrial investment will grow by around 7% in 2005. The share attributable to expansion is growing slightly. The survey puts it at equal to a third of all investment, ie of the same order as replacement investment.

According to Statistics Finland's quarterly accounts data, housing investment has grown steadily since the beginning of 2002 (Chart 21). A report published in January by a Ministry of Finance working group on the construction sector suggests continued growth in the sector in 2005. However, the pace of growth is expected to ease, due to a shortage of building land. Among other things, this reflects the slowness of the planning process. In the Helsinki area in particular, new housing is

Chart 20.

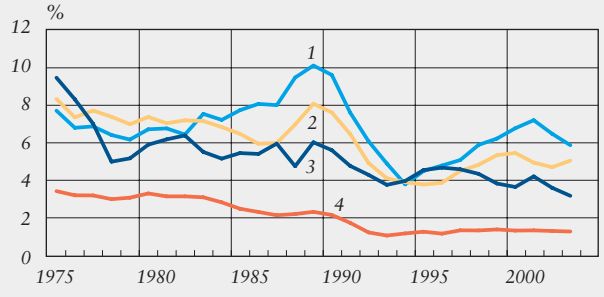
Investment ratio*



1. Finland
*2. EU 15**
3. United States
** Ratios calculated from nominal figures.*
*** European Commission forecast.*
Sources: Statistics Finland, Eurostat, Bank of Finland and European Commission.

Chart 21.

Investment ratio by sector*



1. Private services excl. housing construction
2. Housing construction
3. Total industry
4. Other private sectors
** Ratios calculated from nominal figures.*
Source: Statistics Finland.

located further and further away from sources of employment.

However, the recent trend in the investment ratio contains within it different sectoral developments. Since the mid-1990s, the aggregate investment ratio has been depressed slightly by industry, but boosted by services and housing investment. Admittedly, the weak trend in 2002 and 2003 is visible in both industry and services.

Industry's share of private investment has fallen to almost 20%, while services had climbed to 40% by the start of the present decade. This corresponds to the situation at the end of the 1980s (Chart 22).

If the current restructuring of the economy continues and industry invests abroad, close to expanding markets, industry's share of domestic investment could contract still further. Such outward investment would, however, not detract from investment in Finland. The key issue for the future is what the trend will be in other private investment, particularly in the service sector. The latter is of major importance, particularly to employment, as some jobs in industry could be transferred abroad to low-wage economies.

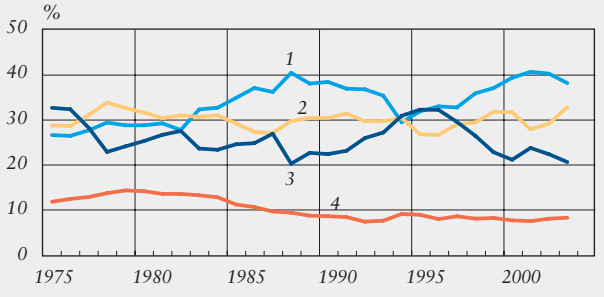
Changes in taxation have also had an impact on the level and direction of investment. The 1993 reform of corporate taxation lowered the corporation tax rate from over 40% to 25%, cut tax depreciations on investment, and also reduced other means of lowering the final sum of taxable income. The reform removed the need to use investment as a tool of tax planning, and corporate balance sheets began to improve, as did capital utilisation.

The declining investment ratio in many sectors is also partly explained by the fact that the form of investment has changed, with companies putting more emphasis on research and development. According to Statistics Finland, over EUR 5 billion was spent on R&D in 2003, equivalent to 3.5% of GDP. This means that in 2003 Finland was Europe's second most research-intensive country, after Sweden. However, it is important to note that the electronics industry accounted for 56% of total corporate R&D investment in 2003. Moreover, during the present decade there has been scarcely any further growth in R&D expenditure, and advance data on 2004 suggests both R&D expenditure per se and its share of GDP have begun to decline.

Despite the scale of investment, the macroeconomic impact of research and development has not been as significant as was perhaps expected. There are also considerable differences between sectors both in innovation activities and in the introduction of new technologies. One

Chart 22.

Breakdown of private investment*



1. *Private services excl. housing construction*
2. *Housing construction*
3. *Total industry*
4. *Other private sectors*

* *Shares calculated from nominal figures.*

Source: Statistics Finland.

possible reason for this could relate to the level of intrasectoral competition. A lack of intrasectoral competition could be reflected in both a low level of innovation activity and a reluctance to adopt new technology developed in other sectors.

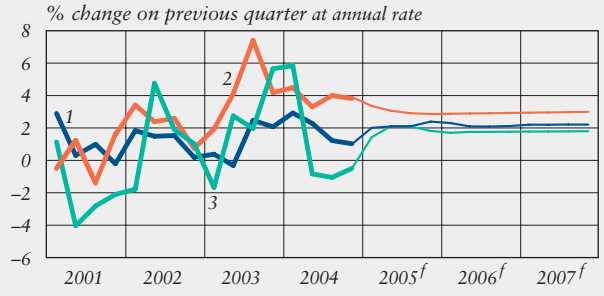
Despite a slight easing of economic growth, investment growth will still gain support from low interest rates and steady growth in demand. Of key importance to how investments develop in practice will be the return that can be expected on investment in Finland. At the beginning of this year the corporation tax rate was lowered from 29% to 26%. Together with the abolition of wealth tax in 2006, this could encourage a willingness to invest, as it will increase the level of after-tax return on capital. It is also possible that the removal of the uncertainty surrounding capital taxation could specifically encourage investment in expansion. On the other hand, the raising of the dividend tax base for some groups of owners will have the opposite effect.

In industry, the process of internationalisation will continue and the role of research and product development become even more important. Investment in service production, if it were to grow, could replace investment in traditional sectors. The development of private service production will be assisted by outsourcing in both public and private sectors. Investment in industry is also expected to grow fairly quickly during the forecast period. As an example of individual investments, the planned new nuclear power plant, designed to cater to the energy needs of industry, will be built during the forecast period. Apart from this, there will be no major new projects this year.

The Bank of Finland forecasts annual growth of 5% in fixed investment in productive capacity (includes both industry and services). The pace of growth in housing investment will ease, but it will still be faster than GDP growth. Public investment will contract in 2004. Over the forecast period as a whole, public investment will grow slightly, but much more slowly than in the early years of the decade. Overall, the investment ratio will rise approximately 1 percentage point by the end of 2007.

Chart 23.

GDP



1. EU 15
2. United States
3. Japan
Sources: Eurostat, Bureau of Economic Analysis and Economic and Social Research Institute.

The world economy and foreign demand

The world economy began 2004 in a situation of strong and geographically broadly based growth. During the spring and early summer, however, the pace of growth began to slow in all the major economic regions (Chart 23). During the course of the year, the pace of world growth in total output eased from a full 5% to approximately 4%. Growth for the year as a whole was a

good 4½%, one of the fastest rates of growth in recent decades.

The easing of world growth in 2004 was no surprise, as the US and Japanese economies, among others, had at times been growing exceptionally strongly. One reason for the slower growth was the dramatic rise in the price of oil and many other commodities. The impact of higher oil prices was perhaps more clearly felt only in the second half of the year, as the strongest price rises came during the summer and autumn. Other factors tending to slow growth in output included the tightening of economic policy in China and a cyclical easing in demand for certain electronics products, the effects of the latter being particularly apparent in Asia.

In the latter part of 2004, the world economy is estimated to have continued to grow at an average rate of approximately 4%, ie more or less in line with the Bank of Finland's forecast in summer (Bulletin 3/2004). The trend was, however, uneven. In the United States and China, growth picked up again towards the end of the year. The strength of private consumption in the United States was particularly surprising. In total, US growth at the end of the year was slightly faster than forecast in the autumn. In contrast, in parts of Europe, and particularly in Japan, economic activity was sluggish towards the end of the year.

These differences in the pace of growth at the end of 2004 reflect in part the effects of changes in exchange rates. For many countries in the euro area, as for Japan, growth had previously been largely export-driven. The appreciation of the euro and the yen – together with the slowdown in world trade – subsequently left growth dependent on weak domestic demand. In the event, growth in the EU, and particularly in Japan, was slower than estimated in the autumn forecast. In contrast, China benefited from the depreciation of its currency along with the dollar.

The Bank of Finland expects world growth to continue through 2005–2007 at an average rate of around 4%. Growth will be subdued during the forecast period by the high price of oil, the gradual redressing of the imbalances in the US economy and the reduction of support from monetary and fiscal policy in many countries. The apparently even pace of growth in the forecast does, however, contain a number of different trends. Structural problems are still an influential factor both in many EU countries and in Japan. On the other hand, economic opening and output growth are continuing at a brisk pace in both China and India, and the effects of this will be felt not just in Asia, but also more generally in the world economy.

The US growth rate is expected to gradually slow from the recent approximately 4% to just under 3% (Table 3)

Table 3.

International growth rates, %

GDP	*2003*	*2004*	*2005f*	*2006f*	*2007f*
United States	*3.0*	*4.4*	*3.4*	*2.9*	*2.9*
EU 15	*0.8*	*2.1*	*1.8*	*2.2*	*2.2*
Japan	*1.4*	*2.6*	*0.8*	*1.8*	*1.8*
World	***3.8***	***4.6***	***4.0***	***4.0***	***3.9***
Imports	***2003***	***2004***	***2005f***	***2006f***	***2007f***
United States	*4.4*	*9.9*	*5.7*	*4.0*	*4.1*
EU 15	*1.9*	*5.8*	*5.8*	*6.5*	*6.2*
Japan	*3.8*	*9.2*	*7.4*	*6.0*	*5.7*
World	***5.3***	***8.7***	***7.5***	***7.3***	***7.1***
Finland's export markets	***5.4***	***8.3***	***7.8***	***7.4***	***7.2***

f = forecast
Source: Bank of Finland.

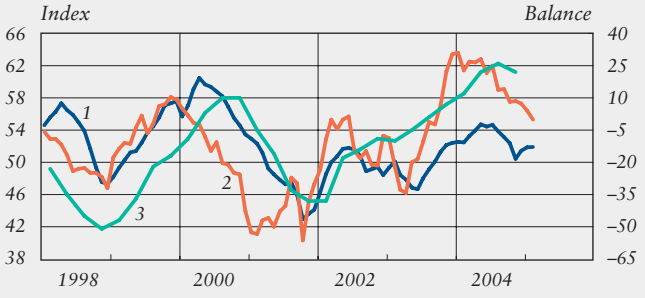
during the forecast period as the impact of recent tax cuts fades and the rise in the policy rate returns monetary policy to a more neutral stance. In addition, the high rate of household indebtedness will reduce consumption. As growth slows, the GDP share of private consumption will in fact contract, while the share of exports and investment will grow. Exports will be supported by the dollar depreciation that has already occurred. Progress during the forecast period in redressing both the imbalance in general government finances and the considerable current account deficit will be slow.

In 2005, growth in the EU 15 will be approximately ½ a percentage point slower than the previous year. This is largely due to the weak economic performance of the euro area during the second half of 2004, as a result of which the carry-over effect of growth will be less than expected. Growth is forecast to recover in late 2005 and early 2006, when private consumption and investment will pick up in many countries. Especially in the euro area, the continued relaxed financial conditions will aid the gradual release of pent-up investment demand, while growth in real incomes will support consumption demand. In 2006–2007, growth will reach a good 2%, ie close to the estimated potential pace of output growth. Compared with the previous forecast, growth in the forecast period will be more dependent on domestic demand and less dependent on exports, which is largely a consequence of the appreciation of the euro. Industrial confidence in the euro area declined in the first half of 2004, but recovered slightly towards the end of the year (Chart 24).

Economic growth in the countries of Asia is forecast to accelerate again during the first half of 2005 following the slower growth in the second half of last year. In 2006 and 2007, regional growth will remain fairly fast, close to the average for recent years. There will, however, be considerable differences in the pace of growth in different countries in the region. In China, per annum output growth is forecast to continue at around 8% in the immediate years ahead, which will also feed growth in the rest of Asia. Chinese growth will in turn benefit from the continued buoyancy of direct investment. Output in Japan and the other countries in the region is expected to recover gradually as export demand picks up. Japanese growth will reach almost 2% by the end of the forecast period, while at the same time growth in the rest of Asia will be almost 7%. Although Japanese growth in the immediate years ahead will be slower than in 2004, set against Japan's recent history it will be quite satisfactory

Chart 24.

Industrial confidence



1. Euro area, Purchasing Managers' Index (left-hand scale)
2. United States, Purchasing Managers' Index (left-hand scale)
3. Japan, Tankan Index, large industrial enterprices (right-hand scale)*
** The Tankan Index was restructured in December 2003.*
Sources: Reuters, Institute for Supply Management and Bloomberg.

and indicates a partial amelioration of the underlying problems in the country's economy. The prospects for domestic demand in Japan are actually fairly good at present, as the situation of exporters has improved, banks have less non-performing loans and the employment situation has also improved. However, the already large general government debt is still growing rapidly.

The pace of growth in world trade in 2004 was intermittently very rapid, with China and other emerging economies leading the way. However, both the beginning and the end of the year saw a marked slowing in the pace of trade growth. It is forecast to take off again during the course of 2005. Overall world trade should grow by a good 7% per annum during the forecast period. Trade between the countries of Asia remains the most dynamic component of world trade. Trade growth will also be supported by the continuing strong flow of direct investment from the industrial nations to the emerging economies. Although this direct investment may to some extent supplant the industrial nations' own exports, it will also generate new trade, as the production facilities established in the emerging economies will often produce intermediate products to serve the needs of the industrial nations' own production facilities. This reflects the ongoing change in the international division of labour in accordance with the principle of comparative advantage.

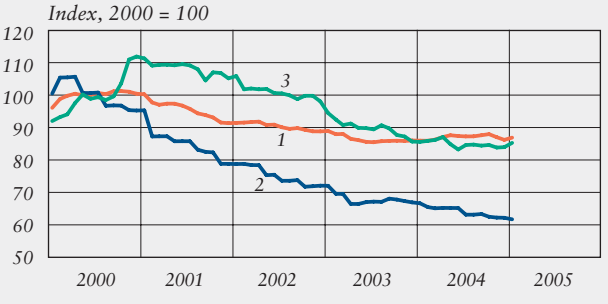
Export markets and export prices

World trade, and hence Finland's export markets, grew extremely rapidly last year, although the pace of growth did ease slightly towards the end of the year. The rising price of oil and other commodities and the upward trajectory of share prices would suggest market growth is once again gathering momentum. Demand in Finland's main markets is forecast to remain relatively strong throughout the forecast period. Growth will be quickest outside the euro area. Only some 30% of Finnish exports go to other countries in the euro area.

The long downward trend in Finnish export prices would appear to have bottomed out in the middle of 2003 (Chart 25). Since then, export prices have remained more or less stable. In spring 2004, they began to climb gradually, primarily due to the metal and chemical industries. This, in turn, was based on the increase in the price of oil and other commodities. Meanwhile, the decline in export prices for paper and board products came to a halt in the middle of last year. In contrast, export prices in the electronics sector have continued to decline.

Chart 25.

Export prices



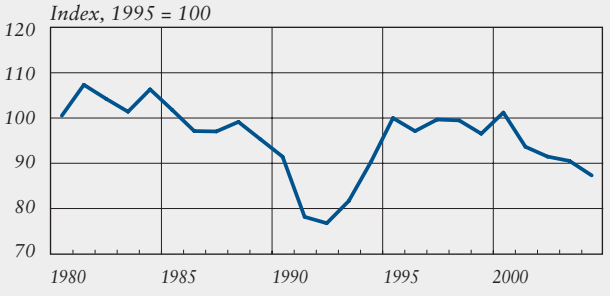
1. *Total index*
2. *Electronics and electrical products*
3. *Paper and board products*

Source: Statistics Finland.

During the present year, Finland's export prices will be on average almost 1% above the level of 2004. Rising prices for raw materials and semi-manufactured goods such as steel and paper will more than compensate for the declining prices of mobile phones and other electronics products. Strong competition means there will only be a very moderate rise in the prices of finished industrial products. Increased supply on the commodities markets will eventually cut the rising trend in prices, and real commodity prices will begin to decline during the second half of the forecast period. Thus, 2006 will see an easing in the pace of rise in the price of forest industry products and fabricated metals, and the overall prices of Finnish exports will already be a shade less on average than this year. In 2007, export prices will decline by 1% on average, pulled down by prices in the electronics sector. All in all, the trend in Finnish export prices during the forecast period will be weaker than the average trend in competing countries.

Chart 26.

Market share of Finnish exports*



** Value of Finnish exports / value of exports from euro area countries. The figure for 2004 is the January–November average.*
Sources: Eurostat and Finnish Customs.

Foreign trade

The trend in Finnish exports during the present upswing in the world economy has been very unusual. The global recovery since the second half of 2003 was not initially reflected at all in Finnish exports. It was not until the second half of last year that export growth began to pick up. In 2004, the volume of Finnish exports of goods and services grew 3½%. At the same time the growth in Finland's export markets was a good 8%. In addition to euro appreciation, Finnish exports have also been hampered by weak demand within the euro area. This has been reflected in many sectors, and particularly the forest industries. A strong increase in exports to Russia and China since 2003 has been insufficient to compensate for lack of demand in the euro area.

The value of goods exports grew last year for the first time since 2000, as growth in export volumes has not for a long time been able to compensate for the decline in export prices. Even last year, export prices rose by only around ½%. It is clear that Finnish output in recent years has been insufficiently targeted towards those sectors where world demand has grown most quickly. For example, the world market for electronics products grew fairly slowly until spring last year. Germany, for example, appears more successful in this respect. The value of Finnish exports has in fact developed more weakly than the euro area average (Chart 26).

Viewed by sector, there have been difficulties particularly in the forest industries, shipbuilding and other parts

of the metal industry. Shipbuilding has, however, recently seen an improvement, with an expanding order book. The forest industries have suffered especially from weak price development. This could be a consequence of the struggle for market share, but it is also possible that the sector worldwide has inadvertently precipitated a fall in prices by increasing supply.

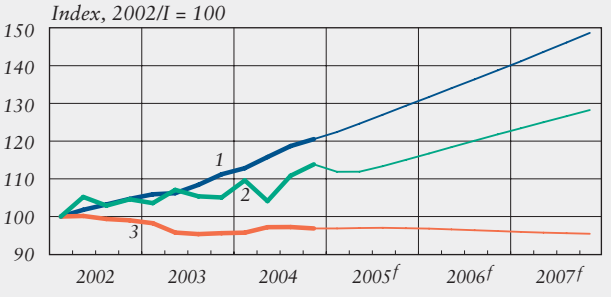
In the first half of this year, exports look set to be down on the end of last year, when a lot of large orders were completed. Growth in world trade has also been more modest in the early part of the year, although export growth should pick up again by the summer. Over the forecast period as a whole, annual growth in the volume of goods exports is estimated at just 4.5%, at a time when Finland's export markets will be growing at a rate of over 7%. Although export prices will still rise this year due to the forest industry and, especially, fabricated metals, the sustained downward trend in the price of electronics exports will mean a decline in average export prices already next year. The estimated peaking of commodity prices at the end of 2006 will then lead to a considerable decline in export prices.

With both export volumes and export prices in Finland developing more weakly than the average in competing countries, the trend in the value of goods exports will continue to be considerably weaker than other countries during the forecast period (Chart 27). Thus, the problems with Finland's production structure and real export competitiveness are expected to continue in the coming few years. Some companies, for instance in the forest industries, will be able to maintain profitability by increasing productivity in order to compensate for weak prices. In contrast, for many traditional export companies the growth in the world economy does not seem to offer any opportunities, and their profitability is also likely to remain weak. Admittedly, the weak export performance can to some extent be explained by the expansion in the foreign operations of a few major corporations.

The very modest growth in Finnish exports since the start of the present decade may also be due in part to the erosion of real competitiveness. With the exception of the electronics sector, there has been little input in fixed investment or the development of competitive products. Preliminary data even suggests a contraction in non-electronics R&D expenditure last year. Finland has a number of highly successful companies operating in the vanguard of their own particular

Chart 27.

Goods exports, export markets and export prices



1. Finland's export markets
2. Export volume
3. Export prices
Sources: Statistics Finland and Bank of Finland.

sectors. These are not, however, sufficient to maintain the level of income generation in the national economy. It may even be that the toughest challenges globalisation poses to the adaptability of Finland's exporters still lie ahead.

Current account

Finland's current account has been in surplus for many years. During the past couple of years, however, the surplus has begun to shrink fairly rapidly. One explanation of this is the growth in investment that has occurred during this period.

The current account trajectory can also be examined by comparing import and export trends. The surplus peaked (at EUR 10.5 billion) in December 2002. By October 2004, the 12-month cumulative surplus had shrunk to EUR 5 billion (Chart 28). At the end of the year the surplus grew again as a result of the completion of the large export orders referred to above.

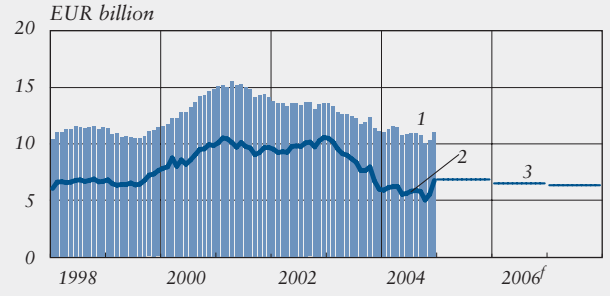
Another explanation for the shrinking current account surplus is the marked growth in imports. Growth in goods imports has been relatively rapid since the middle of 2003, while goods exports have been stuttering for a while now. Of course, the current account shrinkage has also been influenced by the rising price of oil and other commodities. The current account will continue to shrink during the forecast period as the value of imports grows faster than the value of exports (Chart 29).

The Bank of Finland's assessment is that Finland's current account surplus will shrink to below 4% of GDP by the end of the forecast period. This is due to the combined effect of two factors: on one hand, domestic demand (ie investment and private consumption) will grow fairly rapidly, while, on the other hand, there will be a decline in the GDP share of net exports as a result of the rapid growth in imports. The growth in imports suggests that the Finnish economy is facing imminent supply constraints.

As a result of the long period of current account surplus, Finland has gradually become a net creditor relative

Chart 28.

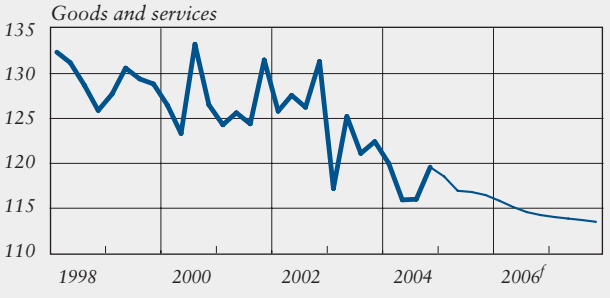
Trade account and current account



1. Trade account, goods
2. Current account
3. Bank of Finland forecast
Source: Bank of Finland.

Chart 29.

Value of exports relative to value of imports



Source: Bank of Finland.

to other countries, if equity items are excluded. Admittedly, the sum of interest-bearing net foreign assets is still only a few billion euro, which corresponds to just a few per cent of GDP.

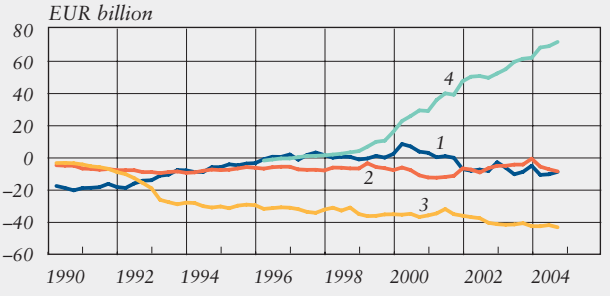
All in all, Finland's international investment position remains negative in the amount of approximately EUR 20 billion, or 15% of GDP. This negative position is already due entirely to portfolio investment in shares. Turning to direct investment, Finland's relatively weak international position as an investment target is reflected in the fact that Finnish residents have direct investments abroad totalling around EUR 70 billion, while direct foreign investment in Finland is just over half this figure, at around EUR 40 billion. This ratio has remained fairly stable in recent years. Net direct investment abroad by Finnish residents now totals approximately 20% of GDP. The investment ratio for portfolio investment in shares is the opposite, but this is due almost entirely to the extensive foreign ownership of shares in Nokia. Foreign ownership of Finnish shares corresponds to almost 50% of Finland's GDP, while Finnish residents hold only half this amount in foreign shares. The stock-exchange value of Nokia's shares totals around 40% of Finland's GDP, and of this sum almost 90% is in foreign ownership.

Finland's most important capital export in recent years has not, however, been direct corporate investment, but investment abroad by the employment pension funds (Chart 30). This has even exceeded the current account surplus, which means that in other respects the balance of payments figures reflect a slight inflow of capital. In increasing their investment abroad, the employment pension funds have sold government bonds, which means large amounts of government bonds have passed into foreign hands. Around 2/3 of Finnish government bonds are now held abroad, corresponding to approximately 25% of GDP.

Other financial institutions, primarily mutual funds, have also raised their level of foreign investment. However, the growth in foreign gross items has come to a great extent from the expansion of banks' foreign assets and liabilities. Banks' net international investment position is generally flexible in that it balances the financial account items in the balance of payments figures. Over the past couple of years, the position of Finnish banks has remained such that they have net foreign liabilities of around EUR 5–10 billion. Since the introduction of the euro, the Bank of Finland has scarcely altered the level of its own net foreign assets.

Chart 30.

Finland's net international investment position by sector

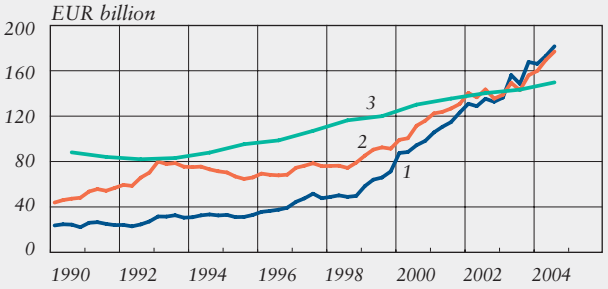


1. *Banks*
2. *Non-financial corporations excl. equity items*
3. *Central government*
4. *Employment pension funds and other financial institutions*

Source: Bank of Finland.

Chart 31.

Finland's foreign assets and liabilities (gross excl. equity items, and GDP value)



1. Assets
2. Liabilities
3. GDP at annual rate
Sources: Statistics Finland and Bank of Finland.

In addition to the current account surplus, the improving figures on Finland's international investment position have benefited in recent years from the drop in value of equity investment liabilities. In contrast, the impact of euro appreciation on the value of foreign assets and liabilities is insignificant, as Finland's foreign assets and liabilities are largely euro-denominated. Moreover, net foreign assets/liabilities are nowadays fairly small. Gross foreign assets and liabilities have continued to grow strongly, and both are now already around a quarter larger than annual GDP (Chart 31).

The income received by Finnish residents from their investments abroad is generally slightly less than the income foreign investors receive from their investments in Finland. However, the net payments on interest-bearing foreign debt are already very small in comparison with when they were at their height around ten years ago, when almost 5% of GDP went on interest payments abroad. The income account is nowadays dominated by the very large dividends paid to nonresident shareholders by a handful of highly profitable large corporations.

Box 4.

Higher productivity through investment

The Bank of Finland has drawn attention to the low investment-to-GDP ratio of Finland compared with the other old EU countries. This continues to be a topical concern, although Finland's current investment ratio is not exceptionally low compared with Sweden, Germany, the United Kingdom or the United States (Table). Of the EU countries, Greece, Spain, Ireland and Portugal all have a much higher investment ratio than Finland. These countries, however, rank among the emerging economies, which are also important beneficiaries of EU current transfers and therefore not fully comparable with Finland for an examination of the investment-to-GDP ratio.

A higher domestic investment ratio could mean faster productivity and income growth, and hence a more balanced economy in the future. This is because the introduction of new productivity-enhancing technologies often calls for investment in capital stock that uses these technologies. Accordingly, there is a threat that the current paucity of investment will be reflected in slow adoption and dissemination of new technologies, which will in turn hamper productivity growth.

A decline in the ratio of gross fixed investment to GDP has been typical of almost all economic sectors (Chart 21 on page 34). In sectors other than services, investment has been declining since the 1970s. In private services, overheating at the end of the 1980s and recovery from the deep recession of the early 1990s led to a strengthening of the investment ratio after the mid-1990s.

Of the EU 15 countries, the average investment ratio for the period 1981–1990 was exceptionally high in both Finland and Portugal (Table). Since the 1990s, Finland's investment ratio has declined to a level approaching the EU 15 average.

There are many reasons for this decline in the investment ratio. These relate to the liberalisation of capital markets, corporate ownership restructuring, capital taxation and changes in the production structure of the economy. Investment abroad has been pursued primarily by forest industry, technology and chemical companies operating in international markets. Outward investment peaked in 2000–2001, when R&D investment abroad equalled corresponding investment in the domestic market. One third of jobs in industry are currently delocated abroad.

Economic liberalisation and the implementation of fiscal reforms has weakened the interdependency between income financing and domestic investment. In an open world economy, investment flows are determined by the best earnings prospects. In addition, required returns on investment have

Table.

Gross fixed investment as a percentage of GDP at current prices

	Average 1981–1990	*Average 1991–2000*	*Average 2001–2004*
Belgium	*19.1*	*20.4*	*19.5*
Germany	*20.9*	*22.3*	*18.5*
Greece	*22.9*	*20.8*	*24.7*
Spain	*22.7*	*22.8*	*25.6*
France	*21.6*	*19.4*	*19.6*
Ireland	*20.2*	*19.5*	*23.7*
Italy	*22.2*	*19.0*	*19.5*
Luxembourg	*21.4*	*22.5*	*21.1*
Netherlands	*21.3*	*21.3*	*20.7*
Austria	*22.6*	*22.5*	*21.4*
Portugal	*27.2*	*24.7*	*24.3*
Finland	*26.9*	*18.9*	*19.0*
Denmark	*19.7*	*18.9*	*20.1*
United Kingdom	*18.7*	*16.7*	*16.6*
Sweden	*20.9*	*17.0*	*16.3*
EU 15	*21.1*	*20.3*	*19.4*
United States	*18.8*	*17.9*	*18.4*

Source: European Commission.

increased, especially in the case of large companies whose shareholder base is often composed of international investors. Market proximity has also become an increasingly important determinant of investment location, as have cost levels in industry, and in part also in the service sector.

Private investment and investment in research and product development have tended to become concentrated in just a few sectors. Against this backdrop, productivity growth has been very modest in many sectors. Thus, there remains a need for an increase in both fixed investment and investment in R&D, even if there can be no return to the overinvestment of the 1980s. Public investment could also be targeted so as to foster productivity growth.

A lack of entrepreneurial activity has surfaced as one of the factors constraining domestic investment. Risk aversion and a reluctance to pursue growth are clearly problems that may still be part of the legacy from the last recession. Another constraint on the willingness to pursue growth and new entrepreneurial activity may be the difficulty of access to risk financing. Equity financing is difficult for many small and medium-sized companies, particularly in a critical period when the capital market institutions are undergoing major changes.

Box 5.

Finnish exports to Russia continue to grow

The rapid growth of the Russian economy since the start of the present decade has also resulted in strong growth in imports. In 2004, the volume of goods imports grew by a fifth, and the value of imports by EUR 76 billion (USD 95 billion) according to preliminary data. The increase in import demand was in part supported by the strengthening of the rouble. Growth was fuelled both by a rapid increase in investment and by domestic consumer demand, and this was reflected in the composition of imports.

Russia one of Finland's main market areas

Since the start of the decade, Russia has rapidly increased its share of Finnish exports. In 2004, Russia, with a market share of 9%, became Finland's third most important market after Sweden and Germany. Finnish exports to Russia amounted to over EUR 4 billion, a 25% increase on the previous year. Exports grew in all product groups except foods.

The Russian consumer boom was reflected in Finnish exports of consumer goods and consumer durables. Mobile phones further increased their share of total exports. Mobile phone exports have, in fact, grown rapidly since the start of the decade. In 2004, they grew by over 50%, and their share of total exports from Finland to Russia reached approximately 15%. The surprise of the year was car exports, which grew by almost 500%. (In the chart, this is reflected in the considerable increase in the share of consumer durables.) Car exports concern cars that have first been imported to Finland and then

re-exported to Russia. Exports in the TCF sector began to grow in 2004, after two years of no growth.

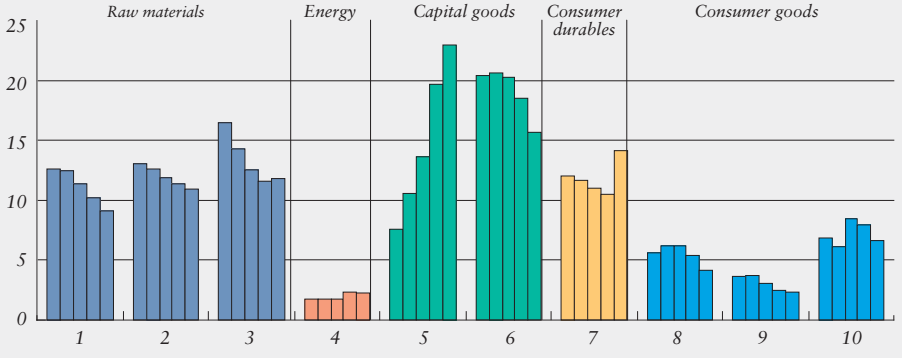
In capital goods, there was rapid growth not only in exports of mobile phones and ancillary equipment, but also in exports of eg office equipment and computers as well as forestry and agricultural machinery. Raw material exports increased by approximately 15%, headed by paper, plastics, rubber, and paints and varnishes.

Despite its small size, Finland is a significant player in the Russian market. According to Russian customs statistics, last year Finland was the eighth largest non-CIS importer of Russian products. Russia itself imported goods from the EU area mainly from Germany, Italy and France, with Finland in fourth place before Poland. Imports from Finland accounted for slightly more than 3% of Russia's total registered goods imports. Finland has maintained its share of just over 3% for several years.

Transit transport to Russia significant

Road transit transport continued the rapid growth that began in 2000. The estimated value of road freight increased in 2004 by 10%, to reach approximately EUR 19 billion, and the volume was up 17%. However, the pace of growth slowed considerably towards the end of the year. The structure of transport changed: high-value goods transports decreased, whereas bulk goods transports continued to increase. There was also strong growth in the transit transport of cars. Finland has traditionally been considered competitive particularly in high-value goods transport, and this is reflected in the fact that the volume of goods transported through Finland to Russia corresponds to approximately a quarter of the total value of Russia's goods imports.

Chart.
Structure of Finnish exports to Russia in 2002–2004, %



1. *Wood and paper*
2. *Chemicals*
3. *Other raw materials*
4. *Energy*
5. *Telephones*
6. *Other capital goods*
7. *Consumer durables*
8. *Foods*
9. *TCF (textiles, clothing, leather and footwear)*
10. *Other consumer goods*

Source: National Board of Customs.

Costs and prices

Consumer prices

Finland's consumer price inflation has slowed considerably in recent months. As measured by the harmonised index of consumer prices (HICP)[1], inflation in February was 0.0%, or a full half a percentage point slower than in October 2004. Thus, the direction of inflation has once again become negative. The main factor contributing to the lower inflation of recent months has been the trend in energy prices, primarily vehicle fuels and heating oil. Communications and textile prices also fell during the course of last autumn. As measured by the national consumer price index (CPI), inflation has remained slightly positive. In February it stood at 0.2%.

Close to zero inflation in 2004

Finnish consumer price inflation in 2004 was the lowest in the EU 15[2]. For 2004 as a whole, HICP inflation in Finland averaged just 0.1%, whereas average inflation in the EU 15 was considerably higher, at 2.1% (Chart 32). Inflation in the euro area was also considerably higher than Finnish inflation. It, too, reached 2.1% in 2004, being pushed up by two main factors: the dramatic rise in the world market price of crude oil and increases in indirect taxes and administered prices in several euro area countries during the course of the year.

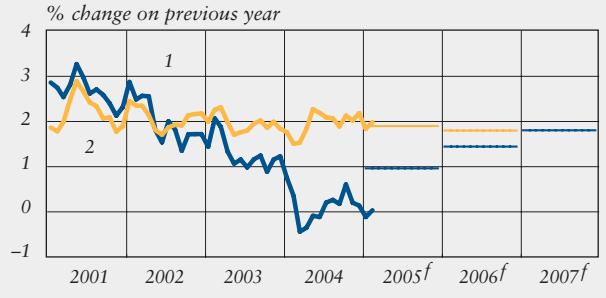
Finland's low inflation was due above all to the reduction in excise duty on alcoholic beverages in March 2004 and increased competition in communications and retailing. Moreover, the sizeable drop in import prices – excluding energy and commodity prices – slowed the pace of consumer price rises, particularly in industrial goods.

In 2004, the key factor pushing inflation was the rise in energy prices, and particularly the price of petrol. Energy prices fluctuated a great deal during 2004, following the example of world market prices for crude oil (Chart 33). While the 12-month change in the price of energy products was still –4% in February 2004, by October it was already almost 12%. Euro appreciation and the fall in the world market price of crude oil at the end of 2004 put a considerable brake on the rise in consumer prices for energy. In February 2005, inflation in energy products was a full 4%.

Inflation in non-energy industrial goods was subdued in 2004, with an average price decline of 0.2%. This was

Chart 32.

Harmonised index of consumer prices



1. *Finland*
2. *EU 15**

** Forecast: European Commission, autumn 2004.*
Sources: Statistics Finland, Eurostat, Bank of Finland and European Commission.

[1] The HICP is composed of five main categories, each of which influences the overall index according to its own weighting. These are (weightings in brackets): services (41%), non-energy industrial goods (30%), processed foods (16%), energy (7%) and unprocessed foods (6%).

[2] The EU 15 includes the euro area countries plus Denmark, Sweden and the United Kingdom.

mainly due to the decline in import prices for consumer goods during the course of the year. Increased competition in retailing also had a moderating effect on inflation in industrial goods. Since September 2004, inflation in industrial goods has been very close to zero, and in February 2005 it reached –0.1%. Prices of electronics equipment, in particular, continued to decline last year.

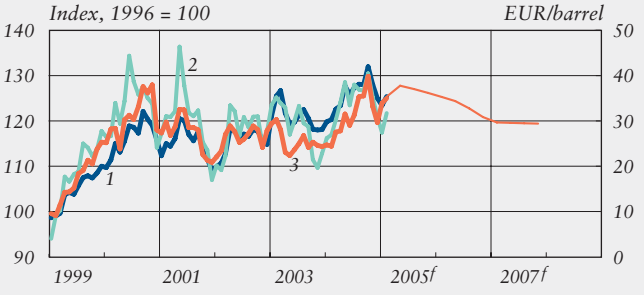
In 2003, inflation in services was still running at 2.1%, but it slowed to 1.3% in 2004. Services are the most important category of the HICP, with a weighting of just over 40%. Increased competition in several service sectors lay behind the subdued figures for services inflation last year. Phone call prices were down by an average 8–9% as a result of tougher competition between operators. Telephone equipment[3] prices were also down, by an average of around 23%, and this depressed services inflation, particularly in late spring 2004[4].

The reduction in excise duty on alcoholic beverages was reflected in a drop in inflation on processed foods of a full 5 percentage points in March 2004. The prices of processed foods also fell again at the end of 2004 as a result of increased competition in daily consumer goods. Food price increases have in previous years been fairly regular, but, more recently, the seasonal fluctuations generally associated with food prices would seem to have been absent, apart from those at the turn of the year.

The inflation expectations of Finnish consumers rose slightly during the course of 2004 (Chart 34). According to Statistics Finland's consumer confidence indicator, inflation expectations rose from 1.6% in January 2004 to 1.9% by the beginning of December. The rapid increase in crude oil and hence petrol prices in 2004 also

Chart 33.

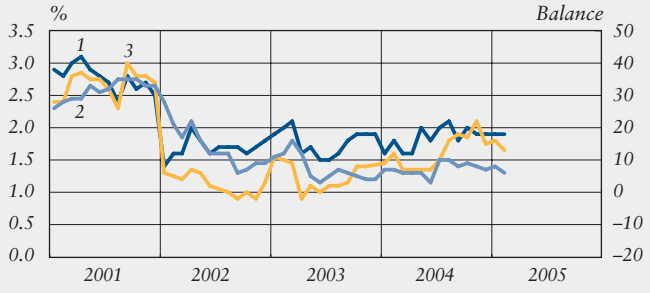
Energy prices



1. Consumer prices for energy in Finland (left-hand scale)
2. Price of petrol (95 octane) in Finland (left-hand scale)
3. World market price of crude oil (right-hand scale)
Sources: Statistics Finland, Bloomberg and Finnish Oil and Gas Federation.

Chart 34.

Consumers' inflation expectations



1. Consumer barometer: estimated change in Finnish consumer prices over the next 12 months (left-hand scale)
2. Consumers' inflation expectations for the next 12 months, Finland (right-hand scale)
3. Consumers' inflation expectations for the next 12 months, euro area (right-hand scale)
Sources: Statistics Finland and European Commission.

[3] The European Union's statistical authority, Eurostat includes telephone equipment under one of the HICP's sub-indices for services.

[4] In February 2005, services inflation slowed further, to 0.9%.

had some impact on household inflation expectations. In February 2005, households believed the pace of inflation a year hence would be around 1.9%. A European Commission survey indicates no significant difference between Finland and the rest of the euro area in respect of consumers' inflation expectations.

Clothes prices in Finland and the euro area

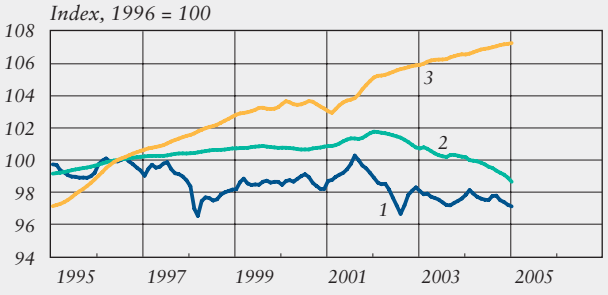
The contribution of clothes to the price fluctuations of industrial goods has grown ever larger in recent years. The strongly seasonal nature of the clothes industry and cut-price sales periodically cause considerable changes in the rate of inflation in industrial goods. For example, from December 2004 to January 2005 HICP consumer prices fell by an average 0.5%, most of which was caused by seasonal reductions in clothes prices. The present weighting of clothes within the category of industrial goods is slightly over 13%, and in the HICP index as a whole, 4%. Thus, as a single product item, clothes' share of consumption expenditure is considerable.

Increased competition is being felt in textile retailing. The arrival of new chain stores on the Finnish market in recent years, particularly from Sweden, has increased the incidence of cut-price sales and led to a considerable overall reduction in clothes prices. Clothes prices have also fallen in Germany, the largest economy in the euro area, although less than in Finland (Chart 35). Across the euro area as a whole, however, clothes prices have actually risen fairly steadily in recent years. The seasonal fluctuation in clothes sales is much greater in Finland than in Germany, for example, or on average in the euro area.

There has been a considerable fall in the prices of textile imports into Finland in recent years as a result of globalisation and the appreciation of the euro. Clothes are manufactured almost without exception in low-cost countries, as there is very little automation in the manufacturing of textiles. The removal of import controls on Chinese textiles at the beginning of 2005 could further depress clothes prices in Finland, as elsewhere.

Chart 35.

Clothes prices* (HICP sub-indices)



1. Finland
2. Germany
3. Euro area
* Seasonally adjusted.
Source: Eurostat.

Labour costs

According to Statistics Finland's index of wage and salary earnings, aggregate wages in Finland rose an average of 3.4% during 2004 (Chart 36). The pace of increase was fastest among central government employees, while wages and salaries in local government also rose faster than average earnings. In the private sector, and industry in particular,

the rise in earnings lagged far behind earnings development across the entire public sector. The very low inflation meant that real earnings growth in the Finnish economy as a whole last year was the fastest since 1996.

Towards the end of 2004, earnings growth eased slightly, to stand at 3.2% per annum during the last quarter of the year. There was a more marked deceleration in real earnings growth as a consequence of the slight acceleration in inflation. Households' real disposable income grew 4.6% in 2004 as a whole. The intra-annual trend is largely explainable by the timing of negotiated wage increases for the first quarter of the year. Wage drift once again stood at around 1 percentage point throughout the year. It is interesting that the development of wage drift has already for many years been completely unrelated to the phase of the business cycle.

Incomes policy settlement comes into effect

The comprehensive incomes policy settlement signed in December 2004 covers an exceptionally long period. It came into effect on 16 February 2005 and will end on 30 September 2007. It covers more than 90% of wage earners in Finland. In addition to several small unions, one or two large unions are also not covered by the terms of the settlement. These include the Finnish Paper Workers' Union, with a membership of approximately 30,000 employees; the Finnish Construction Trade Union, with 35, 000 members; and senior salaried staff in the technology industries, of whom there are around 50,000.

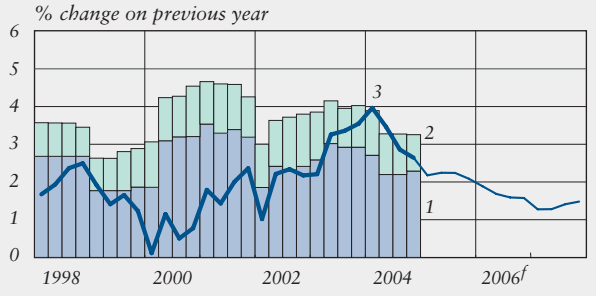
The Bank of Finland estimates that the increases implemented at the start of March 2005 will see wages and salaries rise by an average 2.5% in 2005, while the increases scheduled for the start of June 2006 will mean an average increase of 2.1% in 2006. Pay increases in 2007 will most probably be very small. Due to the structure of the settlement, the increases in wages and salaries will be slightly different in different sectors. The Confederation of Finnish Industries estimates the impact of the increases negotiated for March 2005 as 2.5–3.0%, depending on the sector, and the June 2006 increases as 1.8–2.3%.

Labour costs rise faster than in the euro area

Finnish labour costs have for several years been rising faster than the euro area average. The cost to an employer in Finland of one hour of work was 3.7% higher in the period July–September 2004 than a year earlier. This exceeded the euro area average by more than

Chart 36.

Total national earnings



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

Sources: Statistics Finland and Bank of Finland.

1½ percentage points. The pace of increase was fastest in the financial, real estate and other service sectors, and slowest in trade, hotel and restaurant services and transport. Over half the rise in costs was due to negotiated increases in wages and salaries. Wage drift and structural factors accounted for just under 40%.

As well as the impact of negotiated increases in wages and salaries, the trend in labour costs in 2005 will also be affected by wage drift and structural changes. There is no immediate prospect of any significant changes to employers' social security contributions this year.

The Bank of Finland estimates that the level of nominal earnings in the Finnish economy as a whole and employee compensation per employee will, as in recent years, continue to grow fairly rapidly throughout the forecast period. Of labour costs, the increase in wages and social security contributions will also be faster during the forecast period than the average for the EU 15 (Table 4). Population ageing and the consequent reduction in labour supply will gradually begin to generate pressures for higher labour costs. Similarly, the tightening of the labour market due to the falling unemployment rate and problems of mismatch of labour supply and demand will also tend to push up real wages towards the end of the forecast period.

Thus, Finnish labour costs are not going to come down significantly relative to the euro area as a whole. This will not pose a problem for those sectors where labour productivity is also growing faster than the European average. The problem will be those sectors where labour productivity is lagging behind the trend in labour costs.

Table 4.

Unit labour costs in Finland and EU countries, total economy

% change on previous year	*2003*	*2004*	*2005f*	*2006f*	*2007f*
Finland					
Unit labour costs	*0.2*	*0.3*	*2.1*	*0.8*	*1.0*
Wages and social security contributions[1]	*2.6*	*3.9*	*3.9*	*3.5*	*3.3*
Productivity[2]	*2.4*	*3.5*	*1.8*	*2.7*	*2.2*
*EU 15**					
Unit labour costs	*2.3*	*1.0*	*1.5*	*1.6*	
Wages and social security contributions[1]	*2.9*	*2.8*	*3.0*	*3.0*	
Productivity[2]	*0.6*	*1.9*	*1.4*	*1.5*	

[1] Per wage-earner
[2] Per employed person
** European Commission forecast, autumn 2004.*
f = forecast
Sources: European Commission, Statistics Finland and Bank of Finland.

Import prices

The rise in import prices for goods and services from the previous year accelerated to 2.8% in 2004 (Chart 37). This was due to the rapid rise in world market prices for energy and other commodities. The forecast for this year, however, is for import prices to rise much more slowly than last year. The flattening trajectory of crude oil price rises will considerably moderate growth in import prices during the forecast period. The rise in the price of industrial raw materials is also expected to ease compared with last year. In 2005, import prices for goods and services will rise 1.6%, and in 2007, 2.2%. In 2007, the overall rise in import prices will be close to zero, at 0.3%.

In 2004, import prices began a fairly dramatic rise after a couple of quiet years. While in 2003 prices actually fell by around 0.6%, last year they rose by 3.7%. This was due to the

substantial rise in the world market prices for commodities (Chart 38). The rise in import prices peaked in October 2004, when they were up a good 7% on the previous year. At the very end of the year, receding commodity prices together with euro appreciation produced a marked decline in import prices.

Big differences in price trends

Viewed by sub-index, there were big differences in import price trends in 2004. The import prices for energy and for industrial raw materials and capital goods all rose strongly until the autumn, while consumer goods prices for the most part fell. Import prices for consumer durables have fallen almost uninterruptedly since 2000 (Chart 39). The pace of this downward trajectory accelerated at the end of last year, when the import prices for consumer durables fell by 2.4% in the space of a single month. The main cause of this was a particularly strong fall in import prices for radios, televisions and telecommunications equipment. The import prices for these products have declined dramatically in recent years.

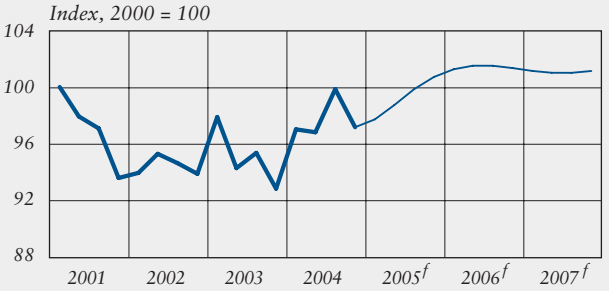
The import prices for other consumer goods apart from durables have also been falling. This has been caused primarily by cheaper prices for textiles and textile products, ie clothes. At the end of 2004, the downward trend was also magnified by a fall in the price of medicines and other comparable products.

Import prices for services have risen

Import prices for services have risen considerably during the past two years

Chart 37.

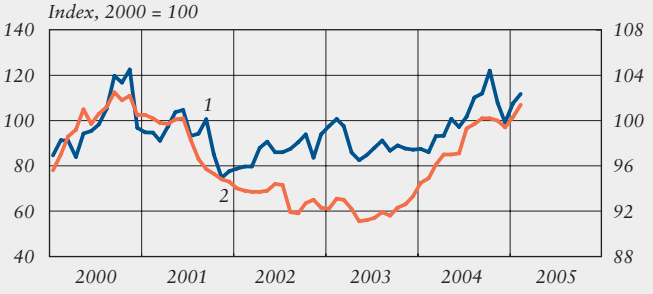
Import prices for goods and services



Sources: Statistics Finland and Bank of Finland.

Chart 38.

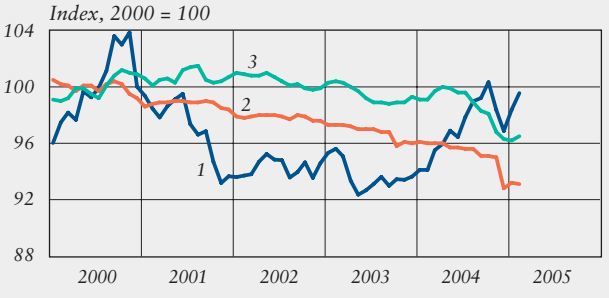
Commodity and import prices



1. Energy products (left-hand scale)
2. Raw materials and producer goods (right-hand scale)
Source: Statistics Finland.

Chart 39.

Import prices



1. Total index
2. Consumer durables
3. Other consumer goods
Source: Statistics Finland.

(Chart 40). At the start of 2004, prices leapt around 15%, largely on account of higher freight charges. These are a key component of service import prices. The rise in service import prices has tailed off, at the same time as freight charges have declined slightly.

Differing trends in consumer prices and import prices for consumer goods

Producer prices, and especially import prices, often indicate the present and future trend of consumer price inflation. Since the start of the present decade, however, import prices in Finland have developed very differently from consumer goods inflation. There has been a marked fall in the import prices for consumer goods – due, for instance, to the appreciation of the euro – although their consumer prices have as a rule risen in recent years.

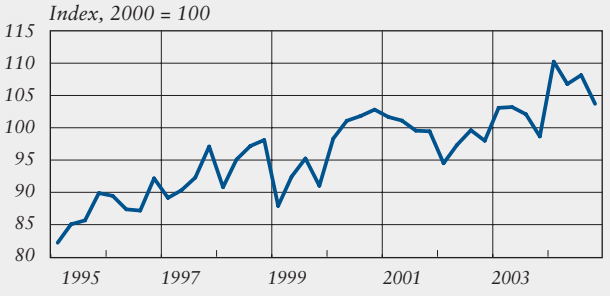
The differing trends in import prices and consumer prices in recent years could have a number of causes. One probable cause is the dramatic drop in the import prices for certain product groups – primarily electronic and electrotechnical equipment plus textiles and clothes – and their different weightings in the indices measuring consumer prices and import prices for consumer goods. These different weightings reflect factors such as the differing status of domestic output in the various categories of consumer goods. Admittedly, the wholesale price index – which indicates purchase prices inclusive of tax for goods destined for use in Finland, and also includes domestically produced goods – has developed in a very similar manner to the import price index (Chart 41).

Moreover, different trends in productivity development between goods production, distribution and trade may have led to import and consumer prices parting company with each other. Rising costs in distribution and trade (particularly wages and salaries) have perhaps to some extent been passed on to consumer prices.

The import price index also differs from the consumer price index in that it does not contain indirect taxes.

Chart 40.

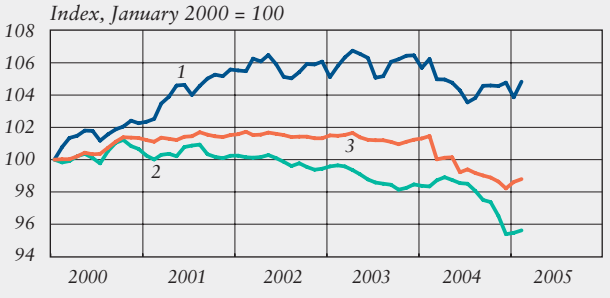
Price of service imports*



** Seasonally adjusted.*
Source: Statistics Finland.

Chart 41.

Goods price indices



1. HICP excl. energy and services
2. Import price index, consumer goods
3. Wholesale price index, consumer goods
Source: Statistics Finland.

However, the indirect taxation of consumer goods has not changed in recent years in a way that would explain the different trends of these indices. If anything, the opposite is true.

Profit growth in wholesaling and retailing and its distribution between different trade sectors and companies is harder to explain. The recent significant increase in competition in the retail sector together with the share of profits in the national accounts remaining almost unchanged would, however, suggest that the difference between consumer price inflation and wholesale price inflation is not a consequence of changes in trade profit margins.

Domestic producer prices

A 1.1% fall in the deflator[5] measuring the price trend in private sector output in 2003 became a 1.3% rise in 2004. The main cause of this is the accelerated growth in aggregate wages (more rapid rise in real labour costs) plus the bottoming out of the fall in unit labour costs (Chart 42). In addition, the rapid rise in import prices for commodities and increase in the capacity utilisation rate in 2004 boosted the price trend in private sector output. Admittedly, aspects of the Finnish economy in recent years have also served to ease the pressures pushing up producer prices. In particular, increased competition and the consequent narrowing of price margins has recently slowed the rise in producer prices.

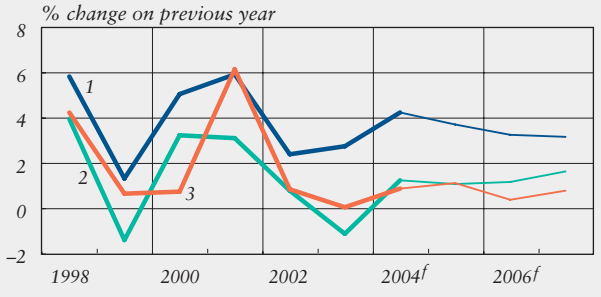
The rise in private sector output prices this year will be just around 1%, rising thereafter to 1.2% in 2006 and 1.6% in 2007. Unit labour costs will rise slightly, with continued relatively fast growth in aggregate wages and a slowing down in productivity growth. Behind these figures we can discern the strong influence of the electronics industry, and they do not fully reflect cost and productivity trends in the other sectors of the economy. Thus, the estimate for private sector producer prices is that they will rise at an accelerating pace during the forecast period. On the other hand, it is assumed that price margins will contract slightly, and this will continue to ease the upward pressures on producer prices.

Moderate rise in road haulage producer prices

Road haulage is a key component of the producer price index for services that Statistics Finland began to publish on a quarterly basis in autumn 2004. A rise in road haulage costs is reflected in

Chart 42.

Private sector domestic producer prices



1. *Aggregate wages per employed person*
2. *Output prices (value-added deflator)*
3. *Unit labour costs*

Sources: Statistics Finland and Bank of Finland.

[5] In the National Accounts, value added is divided into volume and price components. The price component is referred to as the deflator. The price of private sector output includes services as well as goods.

the long term in other domestic prices, and particularly consumer prices.

A significant portion of road haulage costs go on fuel. The dramatic rise in the world market price for crude oil has also affected road haulage costs through higher prices for fuel. At least so far, there has only been a moderate rise in road haulage costs. The upward pressures on prices are presumably being moderated by the present relatively stiff competition in the transport sector. In 2004, road haulage producer prices rose by only 0.7% on the previous year. Admittedly, there was a substantial increase in the pace of price rises during the course of 2004, and in the last quarter the rise on the same period the previous year was already 2.1%. It is highly likely that prices will continue to rise in the near future, too – especially while crude oil prices continue at their present high level – as hauliers gradually pass their higher costs on into prices.

Box 6.

Direct impact of commodity price fluctuations on domestic producer and consumer prices

The robust growth of the global economy, and particularly increased demand in China, caused an increase in crude oil and other commodity prices in 2003 and 2004. These price changes are gradually filtering through to Finnish producer and consumer prices as well. In fact, in some cases this has already occurred.

Changes in commodity prices have traditionally filtered through to Finnish consumer and producer prices with varying lengths of delay. Changes in crude oil prices are quickly reflected in consumer prices for vehicle and heating fuels in particular. In the short term, changes in other commodity prices usually filter through to domestic consumer prices to only a fairly limited extent. For example, a rise in world market prices for metals is reflected in the consumer prices for final products only after a considerable delay. On the other hand, a rise in the price of crude oil also has an indirect long-term impact on consumer prices. In the long term, increases in crude oil prices are reflected in eg the prices of plastic products, where crude oil is used as a raw material. Moreover, oil price increases can also be reflected more generally in product prices through increases in transportation and heating costs.

Are crude oil price increases and decreases passed on in the same way?

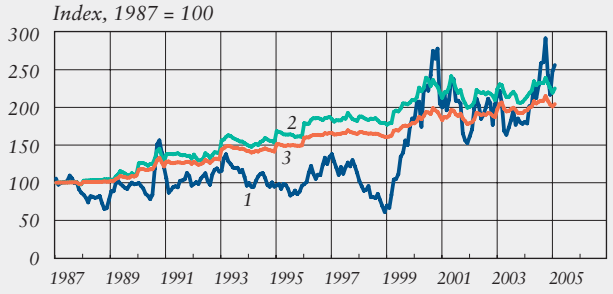
Consumer prices for petrol and diesel fuel have in recent years correlated fairly closely with changes in crude oil prices. The price of diesel also correlates nowadays with the world market price for heating oil, which usually rises during cold periods and falls during warmer periods. The trends in petrol and diesel fuel prices have differed somewhat from time to time. For example, at the turn of the year 2004–2005, consumer prices for diesel increased despite a fall in the world market price for oil.

Statistical analysis shows that crude oil prices have not always filtered through to domestic consumer prices for vehicle fuels in a symmetrical manner (Chart A). In the 1990s, for example, decreases in the world market price of crude oil were not passed on to consumer prices for vehicle fuels to the same extent as increases. This was mainly due to the relatively high taxes on vehicle fuels, which were increased several times during the course of the decade. Crude oil prices were on average at the same level throughout the early and late 1990s, whereas consumer prices rose considerably as a result of tax increases. In the present decade, taxes have so far remained almost unchanged, as a result of which the price of vehicle fuels (including tax) has correlated symmetrically with crude oil prices.

Thus, the picture of asymmetric development in the 1990s changes when taxes are removed from the equation. Excluding tax, changes in the price of petrol, in particular, and partly also in the price of diesel, have both in the 1990s and since the beginning of the present decade correlated closely with increases and decreases in the world market price for crude oil (Chart B).

Chart A.

Fuel prices



1. *World market price of crude oil in euro*
2. *Petrol and diesel*
3. *HICP, energy*

Sources: Statistics Finland and Bloomberg.

Impact of crude oil price changes varies

Statistical analysis shows that a 10% increase in the price of crude oil will in the short term (within approximately a month) result in a 5% increase in the price of petrol (excl. tax). The long-term impact does not essentially differ from the short-term impact. The full weight of crude oil price changes is thus quickly reflected in consumer prices for petrol (excl. tax), whereas changes in the price of diesel fuel take place within a longer time frame. In the short term, diesel fuel prices increase by a little under 3%, but in the longer term by approximately 6%. In both cases, the long-term flexibilities are clearly below 1, reflecting the fact that consumer prices (excl. tax) include not only commodity prices but also other costs, such as refining and distribution costs, profit margins, etc.

A study on how crude oil price changes filter through to prices of vehicle fuels (including tax) shows that the impact (flexibilities) is smaller because taxation has a considerable levelling effect on the changes in consumer prices. A 10% increase in the price of crude oil would result in an approximately 1.7% increase in vehicle fuel prices. The price of the HICP category 'energy' would, in turn, increase by 1%, as the weight of vehicle fuels in the energy price index is almost 2/3. These results are more or less in line with recent actual changes in crude oil and energy prices. The short-term impact on the overall HICP would be approximately 0.1 percentage points, and the long-term impact almost 0.2 percentage points.

Statistical analyses further show that the impact of crude oil price changes on vehicle fuel prices (excl. tax) has changed to some extent during the past 15 years. The impact has been somewhat greater so far this decade than in the 1990s. This would suggest improved competition in the distribution of vehicle fuels over the past 8 years. This is also evidenced by the increased market share of small distribution chains in the late 1990s and the first years of the present decade.

Impact of other commodity prices

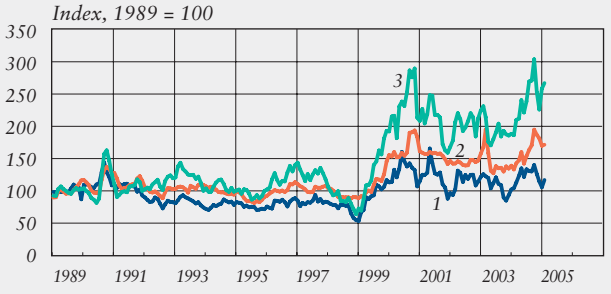
The impact of other commodity prices (excl. energy) can be assessed by comparing them with producer prices[1], and particularly import prices. Import prices are divided into sub-categories[2] according to purpose. One of these is 'raw materials and producer goods', the weight of which is approximately 40% in the overall import price index. This sub-component accounts for a large share of Finnish imports, as it includes not only commodities ('raw materials') but also such producer goods as integrated circuits. On the other hand, the import price indices do not include taxes and services.

[1] *Import price indices are a component of producer prices. Other producer prices include the industrial producer price index, the export prices index, the wholesale prices index, and the basic prices index for the domestic market.*

[2] *The sub-categories of the import price index (2000 = 100) are as follows (by weight and purpose): energy (12%), raw materials and producer goods (40%), capital goods (29%), consumer durables (7%) and consumer non-durables (12%).*

Chart B.

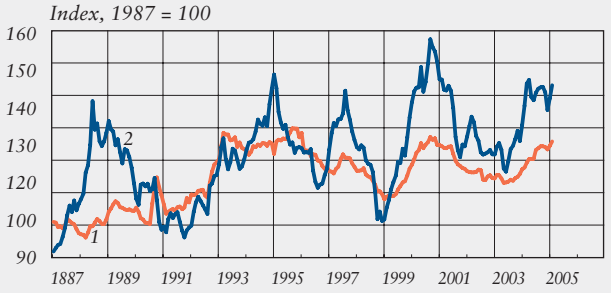
Fuel prices excluding tax



1. Price of petrol in cents, excl. tax
2. Price of diesel in cents, excl. tax
3. World market price of crude oil in euro
Sources: Finnish Oil and Gas Federation and Bloomberg.

Chart C.

Commodity prices



1. Import price index, commodities and capital goods
2. HWWA index in euro, industrial commodities excl. energy
Sources: Statistics Finland and HWWA.

During the past 15 years, the import prices of 'raw materials and producer goods' have not fluctuated as strongly as the world market price of commodities (measured by the HWWA index excluding energy). This is mainly due to the fact that the HWWA index does not include the price of producer goods such as integrated circuits. Moreover, the weightings of the import price index sub-categories differ from those of the HWWA index. Despite this, the price trends have been broadly similar.

Statistical analysis shows that a 10% increase in the world market price of commodities will in the short term result in a good 1% increase in the price of 'raw materials and producer goods'. The long-term increase will be almost 4%. The impact on the overall import price index is smaller in the long term, at approximately 1.2 percentage points.

The direct impact of changes in the world market price of raw materials (excl. energy) on import prices can be estimated by statistical analysis, whereas the indirect effect of these changes on eg domestic consumer prices – particularly for industrial products – is statistically small and hence also more difficult to detect. Assessing indirect effects by statistical analysis is also difficult, even though it is in fact common knowledge that a change in the world market price of raw materials will eventually result in changes in domestic consumer prices through eg changes in international export prices.

Forecast summary and risk assessment

International economy

The Bank of Finland forecast is for continued growth in the world economy through 2005–2007 at an average rate of around 4% per annum. Although the pace of growth will be slower than last year, it will still be faster than long-term trend growth. The apparently even pace of growth in the forecast does, however, contain within it a number of different trends. The forecast for US growth is that over the course of the forecast period it will gradually slow from its recent rate of around 4% to just under 3%. At the same time, some degree of recovery in growth is expected in many parts of the EU 15 and Japan, among other areas. In both cases, however, the pace of growth by the end of the forecast period will be only around 2%.

World growth will be subdued during the forecast period by the high price of oil, the gradual redressing of the imbalances in the US economy and the reduction of support from monetary and fiscal policy in many countries. Structural problems are still an important factor both in many EU countries and in Japan. On the other hand, economic opening and output growth are continuing at a brisk pace in both China and India, and the effects of this will be felt not just in Asia, but also more generally in the world economy.

The growth risks in the forecast for the international economy are estimated to be more or less in balance. The sources of risk are largely the same as in the Bank of Finland's previous macroeconomic forecast published last summer (Bulletin 3/2004). They relate to the way in which the imbalances in the global economy are redressed, the manageability of Chinese growth, the price of oil and the effects of the relaxed monetary policy of recent years.

Although the increasing level of US foreign debt will be redressed to some extent during the forecast period, the reduction of the current account deficit is expected to be fairly slow. Thus, the United States will still need a large amount of foreign finance, and this will sustain the current tensions on the financial and exchange markets. The clear risk is that the dollar will weaken further during the forecast period. This would probably involve a rise in long-term US interest rates. Reduced interest in the United States on the part of foreign investors could also be reflected as a fall in share prices on US stock markets.

A further substantial depreciation in the external value of the dollar and a rise in interest rates would have serious implications for the world economy. Particularly vulnerable would be the euro area, Canada and other countries whose currencies have already gained as the dollar has declined. Japan, too, is vulnerable, due to the persistent problems with its economic fundamentals. In China and other countries whose currencies have been pegged to the dollar, further depreciation of the US currency could in the longer term mean an increase in problems of internal balance, with a further relaxation in monetary policy.

The need for a redress of global imbalances is not solely a risk factor relating to weaker than forecast

growth. From the perspective of the world economy as a whole, better than forecast development is possible if properly coordinated economic policy measures are taken to correct the present situation. Above all, these would be determined action to reduce the US general government deficit, removal of policy restrictions preventing currency appreciation in China and certain other countries of Asia, and progress in structural reforms in the euro area. Such policy changes would accelerate the correction of global imbalances and bring greater balance to the structure of world growth, as there would be stronger output growth in eg the euro area, and more balanced growth in China.

China would benefit from more balanced growth, as there remains a risk of the Chinese economy overheating. While the steps taken so far by the Chinese authorities have mainly put a brake on investment growth, their overall impact has been limited. There are currently signs of a price bubble, particularly in the real estate sector.

The oil market remains unstable. After the drop at the end of 2004, the price of crude oil has once again risen in the early months of 2005. As unused production capacity remains limited, supply-side disturbances could still push the price up even further. A further serious rise in oil prices would subdue growth in oil-importing countries, as it would weaken real household income development and push up costs in the corporate sector. Based on the experience of 2004, the most vulnerable countries would be those where growth in domestic demand is already modest for other reasons.

The relaxed monetary policy of recent years and the consequent brisk growth in global liquidity have provided a favourable climate for companies to correct the structure of their balance sheets. This is particularly so in the United States. The other side of improved balance sheets has been the sluggishness of traditional investments in machinery and equipment in many industrial nations. The forecast estimates a moderate recovery in corporate investment over the next few years, as the financial climate will remain relaxed despite an assumed tightening of monetary policy. There could, however, be stronger than forecast growth in investment. The long-standing sluggishness of investment activity could mean the accumulation of unmet investment needs. A strong recovery in investment in industrial countries would bolster world growth and probably also push up commodity prices. This would be even more likely if investment activity in China also remains brisk. Stronger growth and higher commodity prices could rapidly filter through into inflation expectations. Thus, over the longer term, an investment boom could considerably increase global inflation risks and hence push up long-term interest rates if the stance of monetary policy is not returned to neutral quickly enough.

Inflation

Inflation is influenced in the short term by extraordinary factors that can cause considerable changes in the assessed trend in price rises. Such factors are often temporary in their impact, and even their indirect effects are marginal. They include government measures such as changes in indirect taxation. The inflation impact of tax changes is by its very nature a one-off effect.

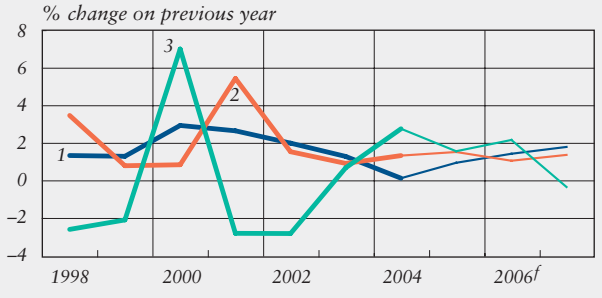
Over the longer term, domestic cost factors, and particularly labour costs, can have a major impact on price trends. Changes in the international environment also filter through to both short-term and long-term domestic inflation in a variety of ways both direct and indirect. One factor that has a considerable impact on domestic prices is the degree of competition in the economy, as competitive changes affect companies' price margins. It is, however, hard to assess the precise impact of greater competition on future prices in individual sectors.

One key factor behind the moderate inflation of recent years has been the rapid productivity growth in the private sector, as a result of which the rise in unit labour costs has been relatively slow. Unit labour costs are forecast to rise 1–1.5% annually in the forecast period, while productivity will grow around 2% per annum. However, this largely reflects cost and productivity development in the electronics industry, and cannot be generalised to apply to the economy as a whole. For this reason, inflationary pressures are expected to increase slightly towards the end of the forecast period.

Another key factor affecting inflation is the international environment. Changes in the international environment affect domestic price development via import prices. The global operating environment of many companies and stiffer competition in the world economy will moderate the rise in international export prices in the years ahead. A gradual flattening out of the rising world market prices for oil and other commodities is also forecast. In addition, the assumed exchange rate stability will reduce future upward pressures on import prices. Thus, the international environment will not significantly increase inflationary pressures in the immediate years ahead.

Chart 43.

Finnish inflation trend



1. *Harmonised index of consumer prices*
2. *Unit labour costs*
3. *Import prices*

Sources: Statistics Finland and Bank of Finland.

Short-term inflation forecast

Inflation will continue to be subdued, despite the fact that the economy is approaching supply constraints. HICP inflation will accelerate to an estimated 1% in 2005 (Chart 43). There will be a considerable acceleration in the pace of inflation in March 2005, when the impact of lower excise duties for

alcoholic beverages is no longer included in the calculation of annual inflation. The impact of this change will be approximately 0.8 percentage points.

Pay rises in line with the autumn general incomes policy settlement are not expected to feed inflation in 2005. Wages and salaries are the largest cost factor, particularly in service sectors. Service price inflation will be moderated in the future by increased competition in telecommunications. An amendment to the Telecommunications Market Act opens up competition in the prices of telephone calls from fixed lines to mobile phones. This will cause a considerable drop in the overall prices of phone calls.

Price inflation in industrial goods in the near future will continue to be moderated by increasingly stiff competition and the considerable fall in import prices for consumer goods in 2004. Admittedly, the latter are forecast to begin to rise before the end of the present year as the increasing world market prices for commodities gradually filter through to international export prices. The high price of energy in 2004 will significantly slow the pace of inflation in this year through the base effect. Inflation in energy prices should ease significantly during the course of 2005.

Inflation to remain sluggish in the coming years

Inflation is also expected to remain moderate in 2006 and 2007. However, the pace of inflation will begin to accelerate as indirect costs gradually filter through into the prices of final products. The dramatic rise in world market prices for commodities will begin to boost the pace of inflation in international export prices. Moreover, there is no prospect of any new taxation initiatives that could slow the pace of inflation. On the other hand, stiffer competition in a number of sectors will continue to significantly moderate inflation during the forecast period.

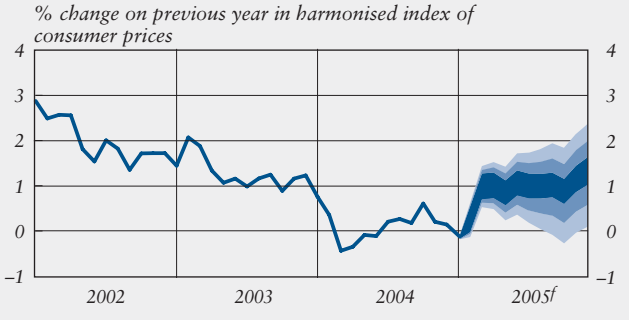
Inflation according to the harmonised index of consumer prices (HICP inflation) will accelerate to 1.4% in 2006 and 1.8% in 2007. The acceleration in inflation according to the national consumer price index (CPI inflation) will be slightly faster, due to the increase in the capital costs of owner-occupied housing. CPI inflation will accelerate to 1.6% in 2006 and 1.9% in 2007.

Inflation risks balanced

In the forecast, the short-term inflation risks are weighted towards slightly slower than forecast inflation (Chart 44). Energy prices are attended by risks in both directions, whereas the risks attending the price trend in services and processed

Chart 44.

Short-term inflation forecast



Sources: Statistics Finland and Bank of Finland.

foods are primarily in the direction of slower inflation.

The uncertainty over energy prices relates in large measure to the world market price for crude oil, which can fluctuate either up or down, depending on the outlook for supply and demand. Changes in the price of crude oil are quickly reflected in energy prices (vehicle fuels and heating oil). There is also increased uncertainty over electricity prices. The trading in carbon dioxide emissions that began at the turn of the year could already raise producer prices for electricity before the end of 2005. On the other hand, producer prices for electricity in Finland have declined recently, and this increases the pressures on electricity companies to also reduce prices to the consumer.

The risk of slower than forecast inflation for service prices relates primarily to a further tightening of competition in telecommunications services. It is possible that prices could come down more than has been assumed in the forecast. Stiffening competition can also be expected in daily consumer goods retailing. This is suggested by recent price reductions and attempts to increase their future market share by chain stores in the sector. The stiffer competition could be reflected particularly in slower than forecast inflation in processed foods.

Over the longer term, the risks to the inflation forecast include the uncertainty surrounding productivity development. A faster than expected deterioration in productivity could increase inflationary pressures more than forecast through a significant rise in unit labour costs. Tightening labour market conditions towards the end of the forecast period could also cause cost pressures that would eventually filter through into prices. The background to this lies in problems with the availability of skilled labour and increased problems of mismatch in labour supply and demand. A decline in the unemployment rate towards 8% at the end of the forecast period corresponds to the present estimate of the level of structural unemployment in Finland.

Finland's growth outlook

Finland's gross domestic product grew 3.7% in 2004, or a good 0.5 percentage points more than forecast by the Bank of Finland in autumn 2004.[1] Finnish growth was much faster than the euro area average. Consumption and exports developed as expected, but growth of almost 6% in private investment was faster than forecast. The employment rate, at 67.2%, developed as expected.

The Bank of Finland forecast is for continued fairly brisk economic growth in the immediate years ahead. GDP growth will be around 3% in both 2005 and 2006. The estimate for 2007 is for growth to ease to a good 2.5%. Growth will be based on strong domestic demand, with investment, consumption and imports all increasing their share of GDP.

[1] Growth was 3.7% without the working day adjustment. Seasonally adjusted and working day adjusted, last year's GDP growth was 3.4%. During 2006, Statistics Finland will go over to the use of chain indices in the national accounts. As a result, statistical updates will probably lead to a reduction in the previously reported figures for GDP growth in recent years.

Annual growth in consumption will be around 3%. As in recent years, consumption will be supported by continued stable income development, low interest rates and continued strong consumer confidence. There is, however, a risk of weaker than forecast consumption. An alternative scenario presented below (see page 70, 'Increased economic uncertainty') considers the possibility of weaker than expected consumer confidence in the performance of the economy, whereupon private consumption growth at the start of the forecast period would be much slower.

Investment growth will slow slightly in 2006–2007, with slower growth particularly in housing construction. However, the investment ratio overall will rise by around 1 percentage point during the forecast period. The beginning of a rise in the investment ratio is good news. Productivity development has been very sluggish in a number of sectors for many years, which is a clear sign of inadequate investment. There is therefore a need for a volume increase in both fixed investment and research and development expenditure, although there can be no return to the overinvestment of the 1980s. In the final analysis, more important than the volume of investment is its targeting in a way that supports productivity growth in the economy as a whole and a more flexible and balanced production structure.

Finnish exports did not begin to benefit from the present growth in the world market until the second half of 2004. Besides the production structure of Finland's export industry, exports have also been hampered by euro appreciation and the weak economic performance of the euro area. Export growth is expected to slow slightly in the early part of this year, but to pick up again by the summer. The export growth forecast for 2005 as a whole is 4.6%, from which level it is expected to accelerate further in the next two years. Growth in Finland's export markets will be a full 7% per annum.

The forecast is for a decline in the current account surplus to below 4% of GDP towards the end of the forecast period. This will be due to two factors: domestic demand (ie investment and consumption) will grow fairly quickly, and the share of net exports will decline, particularly due to the growth in imports.

Although export prices will rise this year due to rising prices for forest industry products and especially fabricated metals, the sustained downward trend in export prices in the electronics industry will make the overall trend in export prices negative already by next year. The anticipated end of the rise in commodity prices at the end of 2006 will then result in a considerable decline in export prices.

With both export volumes and export prices developing more weakly in Finland than on average in competing countries, the trend in the value of goods exports will also be considerably weaker than in other countries during the forecast period. Thus, the problems with Finland's production structure and real export competitiveness are expected to

Table 5.

Forecast summary

Supply and demand 2003–2007 (2000 prices)

	2003	*2004*	*2005f*	*2006f*	*2007f*
% change on previous year					
Gross domestic product	*2.4*	*3.7*	*3.0*	*2.9*	*2.6*
Imports	*2.7*	*4.8*	*4.8*	*4.5*	*5.5*
Exports	*1.4*	*3.5*	*4.6*	*4.8*	*4.8*
Private consumption	*4.4*	*3.2*	*3.2*	*3.2*	*3.4*
Public consumption	*1.2*	*2.1*	*1.1*	*1.5*	*1.6*
Private fixed investment	*–3.0*	*5.7*	*4.7*	*4.7*	*4.5*
Public investment	*6.8*	*–1.1*	*1.3*	*0.6*	*1.0*
Inventory change + stat. discrepancy,					
% of previous year's total demand	*0.4*	*0.6*	*0.0*	*–0.2*	*–0.3*
Total demand	*2.5*	*3.9*	*3.5*	*3.3*	*3.3*
Final domestic demand	*3.0*	*4.2*	*2.9*	*2.7*	*2.6*

Key economic indicators

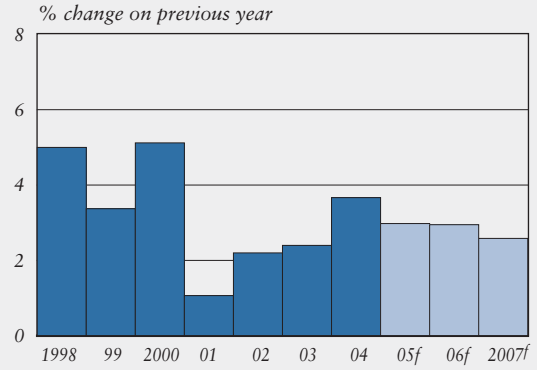
	2003	*2004*	*2005f*	*2006f*	*2007f*
% change on previous year					
Harmonised index of consumer prices	*1.3*	*0.1*	*1.0*	*1.4*	*1.8*
Consumer price index	*0.9*	*0.2*	*1.1*	*1.6*	*1.9*
Wage and salary earnings	*4.0*	*3.4*	*3.3*	*3.3*	*3.3*
Labour productivity	*2.1*	*2.9*	*2.2*	*2.2*	*1.9*
Unit labour costs	*0.9*	*1.3*	*1.5*	*1.1*	*1.4*
Number of employed	*–0.3*	*0.0*	*0.9*	*0.3*	*0.3*
Employment rate, 15–64-year-olds, %	*67.3*	*67.2*	*67.5*	*67.8*	*67.7*
Unemployment rate, %	*9.0*	*8.8*	*8.6*	*8.5*	*8.4*
Export prices of goods and services	*–3.0*	*1.0*	*1.2*	*–0.1*	*–0.7*
Terms of trade (goods and services)	*–3.7*	*–1.7*	*–0.4*	*–2.2*	*–0.4*
% of GDP, national accounts					
Ratio of taxes to GDP	*44.6*	*44.0*	*43.8*	*43.4*	*43.1*
General government net lending	*2.3*	*1.9*	*2.2*	*2.1*	*2.1*
General government debt (EMU definition)	*45.3*	*45.1*	*43.9*	*43.2*	*42.4*
Goods and services account	*6.6*	*5.6*	*5.5*	*4.9*	*4.6*
Current account	*4.2*	*4.5*	*4.4*	*4.0*	*3.7*

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

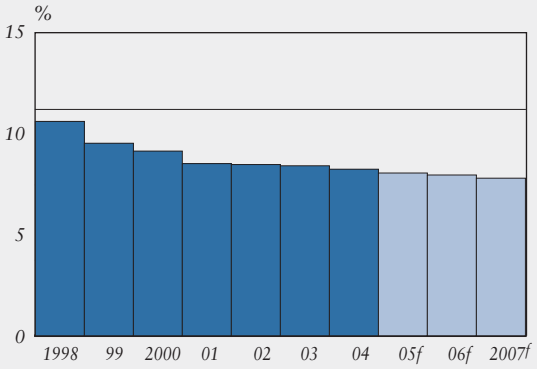
Chart 45 .

Key economic indicators

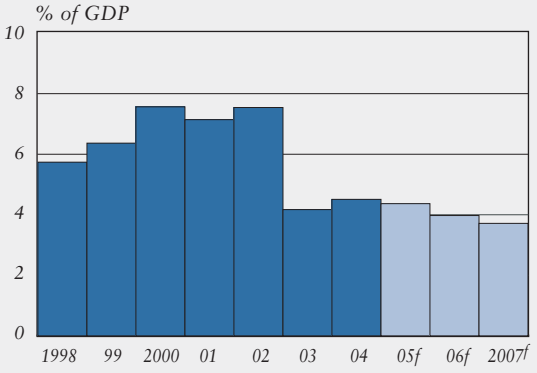
Gross domestic product



Unemployment rate

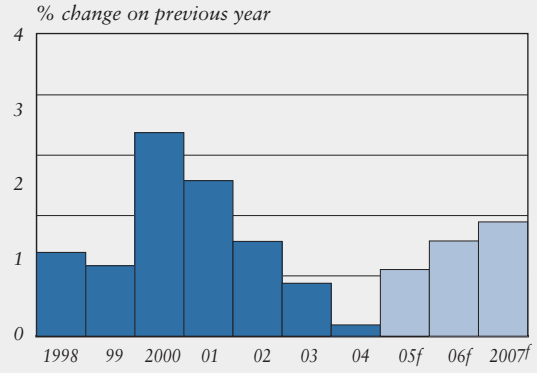


Current account

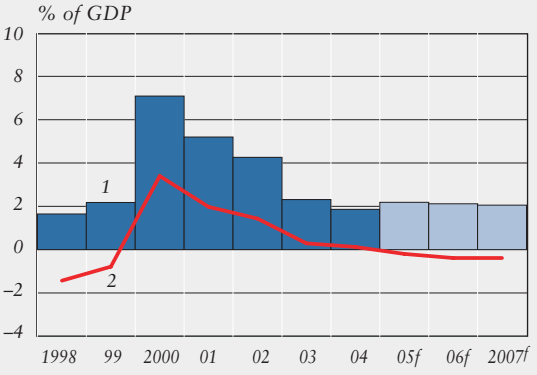


Inflation

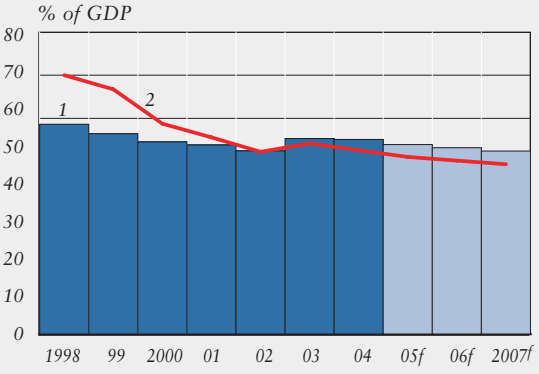
Consumer price index



General government fiscal position



General government debt



1. *General government*
2. *Central government*

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

continue in the immediate years ahead. With the exception of electronics, there has been little in the way of fixed investment or investment in developing competitive products. Without sufficient investment there is a danger that Finland's traditional export sectors will face increasingly severe problems from new competitors and there will be insufficient diversification in the structure of exports.

The falling trend of recent years in the number of employed will be reversed during the forecast period as both the public and the private sector expand their workforce. The decline in industrial employment has slowed as a result of good profitability and productivity growth in a number of sectors. This positive trend is expected to continue during the forecast period.

Unemployment will come down to 8.4% by 2007. The limits of labour supply will begin to be felt during the forecast period as the unemployment figures approach the level of structural unemployment. Population ageing will begin to dampen the supply of labour. Together with the problem of matching supply and demand, this will cause labour shortages in some sectors, particularly towards the end of the forecast period.

Private sector productivity growth is estimated to be around 2.5%. As in recent years, only a slight improvement is forecast for labour productivity in the public sector. In the immediate years ahead, productivity growth in private sector output will depend almost entirely on growth in total factor productivity.

General government finances will be stable in the forecast period (Table 5). The combined surplus of central government, local government and the social security funds will remain a good 2% of GDP at the same time as both income and expenditure contract relative to GDP. There will also be a contraction in general government debt relative to GDP. There will be a moderate annual decline in the total tax ratio. Government measures will be slightly supportive of growth throughout the forecast period.

Central government expenditure has increased to such an extent that the spending limits for central government finances no longer provide any scope for additional expenditure under supplementary budgets. Indeed, it is highly likely that towards the end of the Government's present four-year term central government on-budget expenditure will grow faster than the spending limits permit.

Such a short-term acceleration in expenditure growth would weaken the sustainability of general government finances. Indeed, the long-term financing of general government expenditure does not seem to be sustainably based. Improving the sustainability of general government finances will require more efficient production of public services. However, rather than improving, productivity in the provision of basic public services would appear to have actually declined in recent years. Thus, it would be dangerous to construct sustainability strategies for general government finances solely on the belief that the problem will be solved by an

increase in productivity. A surer approach would be to limit growth in public expenditure and avoid new projects that would expand the responsibilities of the public sector.

Risk assessment: slower than forecast international inflation

The forecast contains the assumption that the pace of rise in export prices among Finland's competitors will accelerate from around 1% in 2004 (measured in national currencies) to 1.5%. This assumption is based on the view that last year's rise in the price of oil and other commodities will gradually filter through to the prices of other goods, and that the decelerating pace of increase in nominal wages in many European countries will not be passed on in full to export prices, but will instead enhance corporate profitability via larger price margins.

It is also possible that the 'China phenomenon', in which companies in the traditional industrial economies transfer their mass production to China, will continue at a faster pace than has been assumed. Moreover, fairly lacklustre growth in domestic demand allied to government measures to increase competition in European countries could mean that companies are unable to sustain their product price margins to the extent assumed. This would mean a deceleration in foreign inflation. In the absence of a strong and permanent change in exchange rates, this would also be reflected fairly quickly in domestic prices in different countries, providing scope for more relaxed monetary policy.

In connection with the forecast, this sort of alternative scenario has been analysed using the Bank of Finland's macroeconomic model 'Aino'. For purposes of the calculation it is assumed that the annual pace of increase in competitors' export prices will decelerate during the forecast period by ½ a percentage point to 1%. It is further assumed that monetary policy in different countries responds to the slower inflation so as to produce a decline in short-term market interest rates and a downward adjustment in expectations of future short-term rates of 0.25 percentage points. As a consequence, key exchange rates are assumed not to move relative to the baseline path in the forecast. International trade is also assumed to be unaffected.

The slower than forecast pace of increase in competing countries' export prices combined with the monetary policy response would affect the Finnish economy via import prices and the price competitiveness of exports. As the pace of international inflation slows, the pace of increase in import prices would also slow. This would be in part a delayed reaction. A slower pace of increase in import prices than that estimated in the forecast would also be reflected as a slower pace of increase in final product (consumption, investment and export) prices. Domestic inflation would therefore also be lower. Because interest rates in the context of monetary union are set for the euro area as a whole, they would come down the assumed amount, ie 0.25 percentage points. This is more or less the same as the deceleration in consumer price

inflation. Thus, there would be no essential change in real interest rates for the consumer, and hence no change in consumption-savings behaviour either. Indeed, in this alternative scenario, private consumption would grow at the same pace as in the forecast's baseline scenario.

The pace of increase in export prices would slow to an extent that reflects the proportionate contribution of imported intermediate products to export production. As competitors' export prices would fall more than this, and exchange rates would remain unchanged, relative price competitiveness would be weakened. As a consequence, export growth in the alternative scenario would be slightly slower than in the forecast. The slower pace of export growth would also be reflected in a reduction in the need for investment that the fall in the prices of capital goods would not be fully able to compensate for. The combined effect of this would be a lower level of imports than in the baseline scenario. The goods and services account and the current account would, however, be almost the same as the baseline. Employment development and the unemployment rate would be almost as in the baseline scenario, because total domestic demand would not differ from the forecast baseline.

Thus, the alternative calculation would seem to suggest that slower international inflation would not be a particular problem for the Finnish economy if accompanied by a simultaneous and general fall in interest rates.

Table 6.

Increased uncertainty: key figures

Deviation from forecast

	2005	*2006*	*2007*
Private consumption, %	*–0.4*	*–0.1*	*0.1*
Private investment, %	*–1.2*	*–0.4*	*0.3*
Private sector output prices, %	*–0.1*	*–0.1*	*–0.1*
Unemployment rate, %	*0.2*	*0.2*	*0.1*
Current account, % of GDP	*0.1*	*0.2*	*0.1*

Source: Bank of Finland.

Increased economic uncertainty

The baseline forecast scenario is based on the assumption that household confidence will remain strong beyond the forecast period. The result is that consumption and investment growth and hence growth in total domestic demand will continue at a brisk pace. The alternative scenario below analyses what the implications for the economy would be if consumer confidence were slightly undermined. The assumption is of a permanent increase in the equity risk premium of 0.1 percentage points relative to the baseline path. The equity risk premium describes the extra return investors require when investing in a risky investment instead of one with a guaranteed yield.

Deteriorating confidence would have a clear impact on private consumption and private investment (Table 6). Along with the related increase in uncertainty, it would also lead to a higher required return on investment. As the increased uncertainty is assumed to be permanent, and household and corporate behaviour strongly anticipatory, there would be an immediate slowing in the pace of investment growth. Increased uncertainty would make households unsure over their

future income development and more careful in their decisions on consumption. Therefore, at the start of the forecast period there would also be an immediate slowdown in the pace of growth in private consumption relative to the baseline scenario. Consequently, there would be an almost ½ a percentage point deceleration in total domestic demand in the first year of the forecast period.

The slowdown in the pace of import growth would be slightly less, as export growth would remain unchanged. Weaker domestic demand would be reflected in a slower pace of inflation and lower wage demands. Slower employment growth would mean an approximately 0.2 percentage point increase in the unemployment rate. Slower import growth coupled with unchanged export growth would also mean an increase in the surpluses on the goods and services account and the current account.

This calculation demonstrates that the much stronger household confidence in the future in Finland compared with the rest of the euro area is a significant contributor to strong and stable growth in consumption.

Increasing competition on the product and labour markets

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In this article, we use the Aino model to examine the impact on the economy of increased competition on the product and labour markets. The degree of competition is assumed to increase in such a way that companies' price margins decline by 2 percentage points, and wage margins by 5 percentage points. Competition is expected to increase slowly so that 80% of the change has taken place within five years. These reforms to the product and labour markets will produce a permanent increase in consumption and the number of employed. Thus, standards of living will rise. Although the long-term ratio of general government debt to GDP is kept at its initial level in the calculation, the reforms will provide scope for reducing the income tax rate and pension contributions by a total of 1.5 percentage points. The calculations are not sensitive to the speed at which the general government deficit is reduced. The scale of impact is barely, if at all, dependent on the wage elasticity of labour demand or households' reactions to temporary changes in income. If, however, the sensitivity of households' labour supply to wages and consumption were greater than in the base assessment, the impact of the reforms would be significantly stronger.

Competition provides room for manoeuvre in general government finances

The sustainability of general government finances will face considerable challenges in the coming decades due to the increasing pension and social security expenditure associated with population ageing. Action has already been taken, and other measures planned for improving the situation by raising the employment rate, cutting taxes and boosting economic growth. Below, we examine the impact the measures aimed at increasing competition on the product and labour markets have on key macroeconomic variables.

Increased competition reduces the pricing power of monopolies and results in lower prices, increased production and growing demand for production inputs. These kinds of effect are witnessed on both the product and labour markets. Recent research findings also show that increased competition encourages companies to innovate, and can in this way boost productivity and economic growth even more. Assessing the direct relationship between productivity growth and competition is difficult, and therefore this channel of impact has not been taken into account in the calculations reported here. The assessment of the positive impact of increased competition is therefore cautious.

The calculations in this article have been prepared using Aino, the Bank of Finland's new dynamic general equilibrium model for describing the average behaviour of economic agents in the Finnish economy. It is a key tool in preparing the Bank of Finland's economic forecasts. The model assumes that competition on the product market is imperfect, and therefore producers have pricing power over their final products. Competition is similarly imperfect on the labour market, as

trade unions are able to influence wage settlements. Both parties attempt to limit their production within the limits of a defined degree of competition in order to make as big a profit as possible or to ensure the most favourable wage development, taking into consideration the impact of prices and wages on demand for commodities and labour.

There is little data on the degree of competition on the Finnish product and labour markets. According to an OECD report, some obstacles to competition on the Finnish product market were dismantled rapidly in the early 1990s, but since then the pace of change has slowed. The report lists a number of remaining obstacles to competition. In this article, the degree of competition on the product and labour markets has been selected so that, with all other key variables fixed, the model can simulate recent economic trends with adequate accuracy.

The calculations assume an increase in competition on the product market such that price margins will decline by 2 percentage points in the long term. Such a decline in price margins also implies a long-term fall in producer prices of 2 percentage points from their initial level. The model is based on the assumption that 80% of the fall in prices will take place within 5 years. Similarly, competition on the labour market is assumed to increase so that wage margins will decline by 5 percentage points in the long term.

Macroeconomic impact

Imperfect competition on the product market will result in a macroeconomic equilibrium in which companies produce less but at a higher price relative to the competitive equilibrium. Similarly, imperfect competition on the labour market will lead to a labour market equilibrium in which labour supply is smaller and wages are higher. Higher wages mean higher costs for companies relative to the competitive equilibrium. Because companies pass the increased costs on to prices, imperfect competition on the labour market will also result in higher prices relative to the competitive equilibrium.

In the long term, increased competition on the product and labour markets can thus be expected to result in output growth and a fall in prices. If the increased output is produced on the domestic market, the growth in demand will eventually encourage companies to increase investment. This will expand the capital stock of the economy. If the pace of development in labour-saving technology is assumed not to change, the increased output would also require an increase in labour input. This, combined with the fall in prices, would eventually result in an increase in real wages and household income levels. Growth in the capital stock and labour input would eventually allow growth in the output potential of the economy.

In the long term, the scale of macroeconomic impact depends fundamentally on the elasticity of real wages, labour supply and prices. In the short and medium term, the adjustment of household consumption is fundamentally dependent on households' willingness to smooth their consumption over time. The wealth

effect also has an indirect impact on consumption. In particular, a temporary decline in corporate profits due to increased competition on the product market is likely to cut consumption in the short and medium term. Moreover, when fiscal policy is taken into account, the short-term and medium-term response can fundamentally depend on the speed of the fiscal policy response.

Labour market reforms

Aino is well suited for making the kind of calculations presented above. Below, we examine, with the help of model calculations, the possible short-term, medium-term, and long-term impacts on key economic variables of increased competition on the labour market. The model calculations assume that the economy is initially in its long-term equilibrium. Increased competition on the labour market is taken into account by letting the wage margin decline permanently by 5 percentage points. The initial wage margin is assumed to be 25%, in which case it is assumed to decline by 4% in the long term. It is also assumed that 80% of the permanent decline in the wage margin will be achieved within 5 years, and that the economic agents have perfect foresight.

The key results of the calculations are presented as percentage or percentage point deviations from the initial level (Table 1).

Model simulations show that a 5 percentage point decline in the wage margin could increase private consumption, investment and production by a good 1%. The real exchange rate would depreciate 0.7% due to the fall in domestic prices. A minor drop in real wages and growth in production would eventually result in an approximately 1% increase in employment. Increased consumption and production would allow a cut of approximately 1 percentage point in total in the tax rate on wages and salaries and employee pension contributions. All in all, however, it should be noted that the long-term impact will be quite minor in this calculation.

Table 1.

Labout market impact of increased competition after a given period

	2 years	*5 years*	*10 years*	*Long-term impact*	*% of total impact in 5 years*
Private production, %	*0.2*	*0.5*	*0.8*	*1.2*	*41.0*
Private consumption, %	*0.0*	*0.1*	*0.3*	*1.2*	*8.7*
Private investment, %	*0.5*	*0.8*	*1.0*	*1.1*	*76.5*
Employment, %	*0.3*	*0.6*	*0.8*	*1.0*	*55.7*
Real wages, %	*–0.2*	*–0.5*	*–0.8*	*–0.2*	*184.8*
Tax rate on wages and salaries. percentage points	*0.0*	*0.0*	*–0.1*	*–0.7*	*12.0*
Employee pension contribution rate. percentage points	*0.0*	*0.0*	*0.0*	*–0.2*	
Wage margin, %	*–1.8*	*–3.2*	*–3.9*	*–4.0*	*80.0*
Real exchange rate, %	*0.2*	*0.5*	*0.7*	*0.7*	*0.4*
Wellbeing[1], %				*0.5*	

[1] The growth in households' wellbeing is estimated in consumption equivalent units, ie the degree of consumption growth relative to the initial level required to produce the same growth in benefits as in the calculation.
Source: Bank of Finland.

The examination of short-term and medium-term adjustment shows that investment responds quite quickly, whereas consumption responds very slowly. This is primarily due to the assumption that consumption responds fairly slowly to changes in disposable income.

Simultaneous labour and product market reforms

Labour and product market reforms can also take place simultaneously. For example, an increase in international competition on the product market can create pressures to reform the labour market as well.

The Bank of Finland Bulletin 3/2004 presented preliminary calculations using Aino on the impact of increased competition on the product market alone. In the calculations below, we examine the macroeconomic impact of increased competition on both the labour and the product market. The calculation assumes that competition on the product market will increase so as to produce a 2 percentage point decline in the price margin in the long term. As was the case with the wage margin, 80% of the total impact will be achieved within 5 years.

In general, it turns out that increased competition on the product market has a stronger impact on the economy than an increase in labour market competition. When the economy has adjusted to the new equilibrium, it can be seen that private production will increase by approximately 3%. This increase is fuelled by a 2.5% increase in private consumption. In the long term, this is reflected in growth of just under 2% in employment and a good 3.5% increase in investment. Real wages will rise by a little less than 3%, and the real exchange rate will depreciate as result of falling domestic prices. It should also be noted that exports will grow in relation to imports. This is due to the improved competitiveness of the economy. Eventually, increased competition on the product and labour markets could in the long

Table 2.

Product and labour market impact of increased competition after a given period

	2 years	*5 years*	*10 years*	*Long-term impact*	*% of total impact in 5 years*
Private production, %	*0.5*	*1.4*	*2.0*	*2.9*	*46.3*
Private consumption, %	*–0.7*	*–0.2*	*0.2*	*2.5*	*–27.3*
Private investment, %	*2.8*	*3.8*	*4.0*	*3.7*	*104.8*
Employment, %	*0.5*	*1.1*	*1.4*	*1.7*	*67.0*
Real wages, %	*0.4*	*1.1*	*1.7*	*2.8*	*37.8*
Tax rate on wages and salaries, percentage points	*0.1*	*0.2*	*0.2*	*–0.7*	*12.0*
Employee pension contribution rate, percentage points	*0.0*	*0.0*	*–0.2*	*–0.7*	
Wage margin, %	*–0.8*	*–3.2*	*–3.9*	*–4.0*	*80.0*
Price margin, %	*–0.8*	*–1.5*	*–1.8*	*–1.9*	*80.0*
Real exchange rate, %	*0.6*	*1.2*	*1.7*	*1.6*	*77.0*
Wellbeing[1], %				*1.2*	

[1] The growth in households' wellbeing is estimated in consumption equivalent units, ie the degree of consumption growth relative to the initial level required to produce the same growth in benefits as in the calculation.
Source: Bank of Finland.

term result in an approximately 1.5 percentage point fall in income taxes. This is scarcely sufficient to solve the problems associated with an ageing population, but it does represent a move in the right direction. In the long term, increased competition in the economy would provide room for manoeuvre in fiscal policy.

Sensitivity analysis

Results can naturally be sensitive to the parameter choices made in the model. The results presented above are based partly on estimated and partly on calibrated preference and structural parameters of the Aino model. The estimated and calibrated parameters are attended by a degree of uncertainty that should be systematically taken into account when analysing the macroeconomic impacts. At this stage, however, the sensitivity analysis involves by necessity the examination of only a few key parameters. These affect the response of consumption in relation to disposable income, the rate of substitution between labour and capital and between consumption and leisure, and the sensitivity of the response of fiscal policy to changes in the general government deficit.

The sensitivity analysis shows that the results change very little if we change the parameters relating to the response of consumption relative to disposable income, or the rate of substitution between labour and capital. By contrast, the parameter that affects the rate of substitution between consumption and leisure has a major impact. This is because the rate of substitution between labour and leisure has a considerable impact on the Frisch elasticity of labour. If the rate of substitution between labour and leisure is reduced to 0.8, employees' Frisch elasticity will increase to 0.23, in contrast to a level of 0.15 in a standard simulation. As a consequence, the long-term impact of increased competition will be approximately 30% greater than shown in Table 2.

Finally, a sensitivity analysis has been performed by accelerating the adjustment of fiscal policy. This results in a faster response of the tax rate to the general government deficit. Accelerating the response of fiscal policy does not, however, significantly alter the adjustment mechanism of the economy in this calculation.

Public services productivity, the labour market and public finances in Finland

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Demographic ageing is reducing Finland's future labour force resources, and an increasing proportion of this diminishing labour force will shift to the production of basic public services. This poses problems for economic growth and the financing of services.

Improving efficiency in the production of public services has been presented in Finland as one solution to the preservation of the welfare state as the population ages. A comprehensive programme to boost public sector productivity is currently under way in an attempt to find ways to increase efficiency in order to ensure that a basic level of services can be maintained amidst growing demand pressures and increasing financial constraints. The programme will run for the duration of the present Government's four-year term (2003–2007), with the objective of boosting public sector productivity by improving working practices and structures and making use of new technologies, including the introduction of electronic services and paperless document management, among other innovations.

However, improving productivity in public services is a problematic issue. The incentives are unclear, and there is no immediately obvious way to measure productivity.

This article discusses problems surrounding the productivity of public services and assesses the impact of productivity changes on the long-term outlook for general government finances. We begin by examining the resources involved in the production and provision of basic services and review estimates of productivity development in Finland's public services. After this, long-term calculations are used to elaborate the implications of productivity changes for the sustainability of general government finances in Finland.

Public services employment

The production of basic public services (education, health care and social services) in Finland in 2003 employed about 380,000 persons, primarily in local government. Of these, 130,000–140,000 persons each were employed in education and health care services. Social services employed about 110,000 persons.

There was a rapid rise in the numbers employed in basic service production towards the end of the 1970s and through the 1980s: between 1975 and 1985 the numbers more than doubled (Table 1). During the recession years of the early 1990s the number of basic service employees fell, while in the

Table 1.

Employment in basic public services, 1975–2003

1,000 persons	*1975*	*1980*	*1985*	*1990*	*1995*	*2000*	*2001*	*2002*	*2003*
Total	*205.3*	*266.1*	*318.9*	*364.5*	*344.4*	*362.8*	*370.4*	*377.9*	*380.8*
% of persons employed in total economy	*9.2*	*11.4*	*13.1*	*14.6*	*16.4*	*15.5*	*15.6*	*15.9*	*16.1*
Education	*83.0*	*97.7*	*107.9*	*119.6*	*118.9*	*126.3*	*128.0*	*130.7*	*132.8*
Health care	*80.1*	*103.2*	*124.1*	*135.0*	*124.9*	*130.0*	*132.8*	*135.8*	*137.4*
Social services	*42.2*	*65.2*	*86.9*	*109.9*	*100.6*	*106.5*	*109.6*	*111.4*	*110.6*

Source: Statistics Finland.

early years of the present decade there has been an increase of 3000–8000 jobs per annum.

Relative to the total numbers employed in the economy as a whole, the ratio of basic service employees was highest during the recession years, since when the ratio has decreased somewhat in the context of an overall improvement in employment, and has now stabilised at around 16%. If the number employed in basic services produced by non-profit institutions – about 100,000 persons – is taken into consideration, basic services that are publicly produced or dependent on public financing currently employ one fifth of the employed labour force.

Demographic ageing will increase the need for basic services further still. Assuming no change in the structure of service production and no increase in productivity, about 55,000 new employees will be required in the production of public services over the next three decades (Table 2). When the working-age population declines, about 20% of the labour force will be employed in producing public services. This would be the case despite the assumption in our long-term calculation of a slight rise in the employment rate and a decline in unemployment to around 6%.[1]

Estimates of productivity development in public services

Since public goods and services have no market price, the value of public outputs to customers cannot be defined directly. Hence, productivity cannot be measured in terms of the relation between output and inputs, as it can in other cases. Instead, estimates of productivity have been made by comparing the volume of various activities against real inputs.[2] The main problem in these estimates is that the volume variable of activities is fairly heterogeneous even within a single field and quality changes cannot be taken into account even at the most general level. For instance, health care productivity declines if treatments become more complex or the patient-base ages.

[1] For the long-term calculation, see Kinnunen and Tuovinen (2004).

[2] Aaltonen et al (2004); Junnila (ed.) (2004). In addition, overall productivity in local government has been studied in a productivity report by Statistics Finland ('Tuottavuuskatsaus', 2003) and in the Finnish Government's report on the management and state of central government finances ('Hallituksen kertomus valtiovarain hoidosta ja tilasta', 2004, annexes available in English).

Table 2.

Employment in basic public services, 2003–2050

1.000 persons	*2003*	*2010*	*2020*	*2030*	*2040*	*2050*
Total	*380.8*	*399.5*	*394.0*	*429.7*	*435.5*	*434.9*
% of persons employed in total economy	*16.1*	*16.8*	*16.8*	*19.2*	*20.0*	*21.0*
Education	*132.8*	*140.0*	*112.2*	*116.8*	*114.1*	*119.0*
Health care	*137.4*	*144.7*	*158.3*	*173.6*	*175.8*	*172.3*
Social services	*110.6*	*114.8*	*123.5*	*139.3*	*145.6*	*143.6*
Children	*60.8*	*58.2*	*56.9*	*54.6*	*51.5*	*49.9*
The elderly	*38.7*	*45.5*	*56.3*	*74.8*	*84.5*	*84.6*
Others	*11.1*	*11.1*	*10.4*	*9.8*	*9.6*	*9.2*

Sources: Statistics Finland and Bank of Finland.

There is therefore considerable uncertainty relating to productivity estimates based on this method of calculation. It is difficult to assess if an observed decline in productivity reflects a genuine fall in efficiency. Be that as it may, estimates of productivity development are in any case fairly bleak. Productivity in health centres and overall productivity in local government have declined annually since 1998 (Table 3).

Various efficiency indicators have also been used to measure the potential for increasing public sector efficiency.[3] These indicate an increase in productivity, for instance in health care, since the mid-1990s. Nevertheless, the differences in efficiency between different production units are considerable. When the efficiency indicator used is relative, ie it measures how the productivity of various production units differs from that of the most efficient unit, it does not necessarily correlate with the average productivity development for the sector as a whole.

On the other hand, international comparisons suggest that the Finnish public sector is relatively efficient. According to evaluations based on outcome, customer satisfaction can be achieved, eg in health care, at a relatively low cost.[4] Educational achievement in Finland is also good, although educational costs are relatively small compared with those in other countries. On the other hand, the Finnish health care system is inefficient internationally when measured on the basis of the overall health of the population and the availability of health care services.[5]

In practice, macro-level analyses are generally based on the presumption that public sector productivity does not change. This builds on national accounts practices, according to which the value of public output is determined on the basis of inputs, ie compensation of employees and intermediate consumption. Since, in public sector production, inputs are mainly labour force inputs, public sector operating costs tend to rise in long-term estimates faster than the costs in other economic sectors if there are no permanent wage

[3] Hjerppe et al (eds.) (2003).

[4] Ministry of Finance (2002).

[5] European Commission (2004).

Table 3.

Productivity of public services

% change on previous year	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
Total factor productivity, central government		*0.7*	*–0.7*	*2.8*	*–1.4*	*–2.1*
Labour productivity, central government	*3.3*	*–1.5*	*–1.1*	*0.3*	*–0.2*	*0.2*
Total factor productivity, local government	*–2.2*	*–1.4*	*–1.8*	*–2.5*	*–3.2*	
Education	*–3.3*	*–1.1*	*–1.3*	*–1.5*	*–3.4*	
Libraries	*2*	*–0.3*	*–0.5*	*–0.5*	*0.3*	
Social services	*–1.1*	*–1.9*	*–2.7*	*–4.5*	*–3.2*	
Health centres	*–0.2*	*–2.4*	*–0.9*	*–3.4*	*–3.7*	*–3*
Specialised medical care				*–2.2*	*0.1*	*–0.3*
Institutional care for the elderly				*–6.4*	*–0.5*	*–0.5*

Sources: Statistics Finland, Government Institute for Economic Research (VATT) and National Research and Development Centre for Welfare and Health (Stakes).

differentials between the public and the private sector. The faster productivity increases in market production, the more expensive public services become in relative terms. This phenomenon is known as Baumol's disease and has been a considerable factor in the past.[6]

Service productivity and the outlook for the public sector

The impact of productivity development in public service production on the demand for labour and the sustainability of general government finances can be assessed using a long-term calculation. The calculation used here is based on the assumption that the service demand per customer remains unchanged within each age cohort and the relative costs of different services are determined on the basis of the age cohort unit costs of central government transfers to local government. This enables the calculation of developments in basic services at constant prices, which in turn determines the demand for labour, assuming that production techniques remain unchanged.[7]

In this calculation, productivity growth means that a given volume of services can be produced with smaller labour and intermediate product inputs. Alternatively, productivity growth could of course also mean that more services, measured at constant prices, can be produced with given inputs.

If productivity were to continue to decline, as has been the case in recent years, the prices of public services would rise accordingly and labour demand would increase compared with the baseline scenario in which productivity is assumed to remain unchanged. In contrast, if productivity could be improved, which is the Government's objective, this would have important implications for the labour market and the outlook for general government finances.

The implications of these changes in productivity can be illustrated by a simulation in which the current productivity trends in service production are assumed to continue and labour productivity is assumed to decrease annually by 1% in 2006–2015. As a result, the prospects for general government finances would be much weaker than in the baseline scenario. The decline in productivity would

[6] Viren (1998).
[7] Kinnunen and Tuovinen (2004).

Table 4.

Impact of a change in productivity on number of basic service employees and general government budgetary position*

Change compared with baseline scenario	*2010*	*2020*	*2030*	*2040*	*2050*
Basic service employees, 1,000 persons	*19.6*	*39.4*	*39.4*	*39.4*	*39.4*
Basic services, % of GDP	*0.7*	*1.4*	*1.5*	*1.4*	*1.4*
General government budgetary position, % of GDP	*–0.8*	*–2.0*	*–2.8*	*–3.7*	*–4.6*
General government budgetary position in baseline scenario	*2.0*	*1.6*	*–0.4*	*–0.2*	*–0.3*

** Productivity decreases by 1 % annually in 2006–2015.*
Sources: Statistics Finland and Bank of Finland.

accelerate the rise in basic service prices[8], which in turn would increase the GDP ratio of basic services by 1.4 percentage points in the long term. This would push general government finances into deficit, and debt-deficit dynamics would increase the effect to almost 5% of GDP in the long term. Lower labour productivity would also mean that, compared with the baseline scenario, about 40,000 additional employees would be needed in the production of basic services (Table 4).

Productivity growth of a similar magnitude has a symmetrical effect in the calculation. If productivity were to grow by 1%, the need for additional labour would vanish almost completely and general government finances would record a sizeable surplus. This is, however, based on the assumption that wages would not respond to the growth in productivity.

Will Baumol's disease get worse?

Productivity development in public services is a key factor for the future financing of welfare services. If productivity growth were to lead to permanent cost savings, there would even be room for tax cuts without endangering fiscal stability, despite the rise in the dependency ratio. Therefore, the Government's objective of increasing productivity is well founded. It is also a natural objective, as there is great potential for productivity growth in the public sector. This is due to the fact that there are still substantial differences in productivity within different production units that cannot be explained by customer base or other similar external factors.

Concrete steps by the Government to increase the efficiency of the public sector have so far been insignificant. For instance, there has been little progress in building incentives into the system of central government transfers to local government. Under the current system of revising the division of costs, central government in practice compensates growth in local government costs even where this exceeds the cost trend in the rest of the economy. As a result, the system of central government transfers to local government closely resembles the old payment-based system.

Signs of very poor productivity development for several years now give reason to fear the present negative trend could continue. The incentives for cost savings are unclear. In addition, competition is virtually lacking from most activities. On the other hand, the most significant cost savings will probably come from more efficient organisation of services, a point that was highlighted in the Government's productivity programme.

As regards the labour market, the change in the age structure of the population gives cause for concern. As an increasing proportion of the diminishing labour force shifts into the production of basic services, resources will be taken away from competitive activities, which will in turn weaken the productivity of the economy as a whole.

[8] The rise in prices would accelerate annually by about 0.7 percentage points in 2006–2015 compared with the baseline scenario, which corresponds to the share of labour input in the price component.

When the labour market is tight, it cannot be presumed, as some estimates do[9], that a rise in the number of service production employees would be reflected in increased overall employment and hence higher tax receipts. On the contrary, it can be expected that labour market pressures will be reflected in a relative rise in local government wages and salaries.

In addition to replacing retiring employees – about 130,000 persons in 2005–2012 – local government will have to hire more employees in net terms because of population ageing, even in the absence of weaker productivity growth. This will tend to raise the GDP ratio of public services further still. Since the share of basic services in the overall economy will in any case increase as the population ages, the risks of Baumol's disease getting worse will also become greater.

[9] Parkkinen (2004). See also the preface to the journal Yhteiskuntapolitiikka 5/2005, 'Eläkepommia ei tule' (in Finnish only).

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Taxation and employment – international comparisons

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The effect of taxation on employment is an important issue in Finland as in other European countries where taxes are relatively high and raising the employment rate is a key objective of economic policy. In this article we examine the relationship between labour input and taxation on the basis of international data. The purpose is to shed light on how much a general easing of taxation would increase the supply of labour and thus raise the employment rate.

Recent discussions on taxation and employment have noted the differences between Europe and the USA. The number of hours worked relative to the working-age population is substantially lower in Europe. This is only partly due to Europe's lower average employment rate. Another factor is that in several European countries the hours worked per employed person are much lower than in the USA. From the perspective of economic policy, it is important to know whether Europeans' low working hours (eg relative to the USA or Japan) can be explained by high taxation in European countries, by their higher valuation of leisure time, or by other structural factors.

Several well-known economists have recently taken part in these discussions. For example, Edward Prescott, a Nobel laureate in economics (2004), published an article[1] in which he shows that the difference in hours worked per working-age person between the large countries of Europe and the USA is explained surprisingly well by taxation alone.

A recent article by Olivier Blanchard[2] deals with the relationship between taxation and employment along with many other crucial European policy issues. His conclusion is that, although taxation has an impact, Europeans' preferences are also an important factor. Blanchard claims that Europeans value leisure time more and so are inclined to work less than Americans, even if given the same wage and tax conditions. In support of this contention, Blanchard points out that Prescott's result requires an elasticity of labour supply with respect to after-tax real earnings that is clearly much higher than what economists are accustomed to thinking. While Prescott admits this, he feels that the international comparisons that he presents show that labour supply is surprisingly responsive to taxation, and he bases his own economic policy recommendations on this finding. Clearly, the question of European preferences and the degree of labour supply elasticity is ultimately an empirical issue, which can only be resolved through sufficient statistical research.

Prescott does not provide formal statistical evidence in his article. Instead, his results derive from a theoretical model that describes household behaviour. He shows that the model can be calibrated to explain much of the cross-country differences in the quantity of labour supplied solely in terms of taxation. In response to the argument that Europeans' preferences might differ from those of Americans,

[1] Prescott (2004).

[2] Blanchard (2004).

Prescott points out that the labour supply gap between Europe and the USA came into being only after the 1970s, as taxation was notably tightened in Europe. If Europeans simply enjoy leisure more than Americans, Prescott asks, why did we not see the difference in the 1970s?

We now turn to our own statistical analysis of the effect of taxation on labour supply. We use comparable OECD data that include hours worked, size of labour force and tax/GDP ratios in the countries studied. Besides the large countries studied by Prescott, our data also cover several of the smaller industrial countries, including the Nordic countries.

Our findings are clear: the relationship between labour supply and tax ratio is strongly negative and highly significant statistically. This suggests that an easing of taxation provides a strong incentive for an increase in the labour supply. Generally speaking, however, the effects of taxation do not appear to be quite as pronounced as Prescott obtains. In the simple framework of the present study, which considers the average tax ratio only, the employment effect is not strong enough to imply full self-financing for a tax cut. For a country like Finland, a lowering of the aggregate tax ratio seems to generate self-financing of about 50%. But we could well surmise that the result would be better if the tax changes were concentrated on those parts of the tax system where effective marginal tax rates are highest and the incentive effects therefore strongest.

Huge differences in working hours

The data for this article cover 18 countries, including all those studied by Prescott except for Italy. In addition, we include the Nordic countries, except for Iceland, as well as an additional group of industrial countries.[3] Italy is excluded here because it appears that, in a statistical sense, the labour market there reacts too differently to taxation compared with the other countries studied. Although Prescott also makes note of this, it is not a problem for him since his calibration approach does not employ statistical methods.

The population's labour supply is measured in terms of average number of hours worked per week by people of working age (15–64).[4] Taxation is measured by the aggregate tax ratio, ie the ratio to GDP of all direct and indirect taxes, including social security contributions paid by employers and employees.[5] Observations were obtained for average hours worked per week and each country's tax ratio. These were expressed as averages by country for two periods, 1970–1974 and 1993–1996, as in Prescott's study. Period averages are used in order to obviate cyclical effects.

The results for 1993–1996 are presented in the chart, which displays

[3] Included in the sample for 1993–1996 (as in Prescott's article): the Netherlands, Belgium, Spain, Ireland, the United Kingdom, Austria, Japan, Canada, Norway, Portugal, France, Sweden, Germany, Finland, Switzerland, Denmark, New Zealand and the United States. Of these countries, the available data on hours worked during 1970–1974 covered Canada, the United Kingdom, Japan, Norway, France, Sweden, Germany, Finland and the United States.

[4] Data from OECD, Statistics, Labour, Labour Force Statistics.

[5] OECD (2004).

the magnitudes of differences between countries in hours worked. Generally speaking, it seems that the most work is done in Japan and the Anglo-Saxon countries, followed by the Nordic countries, and the least in continental Europe. To be sure, there are some exceptions to these generalisations.

Analysis of the effects of taxation of course requires sufficiently accurate measurement of the tax burden. However, there are some problems connected with quantification of a representative tax rate. First, the incentive effects of taxation depend not only on average, but also more importantly on marginal, tax rates. For this study, comparable data on marginal tax rates were not available, so we had to assume that differences in average tax rates also describe differences in marginal rates.[6]

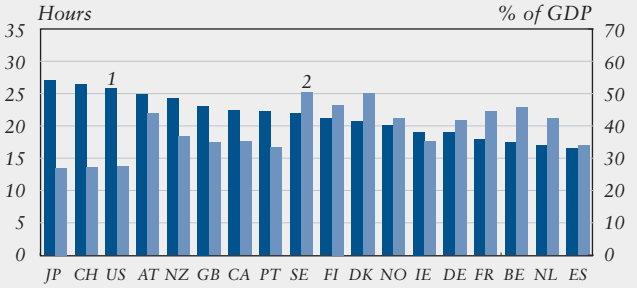
Even more serious problems arise in quantifying effective tax ratios because social benefits are tied to income. Some social benefits are inversely related to a person's income, which increases the effective marginal tax rate and the negative incentive effects of the tax and benefit system.

Another problem in measuring the tax ratio, with the opposite effect, is that pension benefits depend positively on labour income. This is an extremely timely issue because of the ageing problem faced by most industrial countries. The more closely the present value of a person's future pension benefits depends on his own pension contributions, the more closely these contributions represent forced saving rather than taxes. However, in calculating the tax ratio, mandatory pension contributions are treated as taxes. This would not be a big problem for estimation purposes if the degrees of correspondence, or actuarial fairness, between employees' pension contributions and benefits were roughly the same in the different countries. But the differences could be significant. Therefore, comparisons of the actuarial fairness of the pensions system would be particularly important in any follow-up study, especially since increasing the correspondence of contributions and benefits at the micro level is one way of reducing effective labour tax rates while keeping revenues accruing to the social security system constant or even increasing them.

We should, of course, not underestimate the seriousness of the measurement problems noted above.

Chart.

Average hours worked per week and tax ratio, 1993–1996



1. Weekly working hours (left-hand scale)
2. Tax ratio (right-hand scale)
Source: OECD.

[6] In his study, Prescott used a slightly more sophisticated but still very rough approximation. It is based on the idea that the more income-tax oriented a country's tax system, the greater the excess of marginal over average tax rate and the greater the disincentive effect.

However, it has been shown that the various measures of the severity of the tax burden are highly correlated with each other in international data, so that, in applied work, the method used to measure tax severity is not as critical as might appear from a theoretical perspective.[7]

Statistical results

To study the effect of the tax ratio on hours worked relative to working-age population, we estimated the following regression equation using the least squares method on all 27 observations:

HRS/POP =
32.0 – 0.255*TAX RATIO
(2.7) (0.070)
R^2 = 0.34, SEE = 2.76

The standard errors of the regression coefficients are shown below them in parentheses. Clearly, these results are statistically highly significant. To interpret the coefficients, note that the variable HRS/POP is the average hours worked per week per working-age person. The tax ratio is expressed in per cent. The variables' actual and fitted values are given in Table 1.

The estimation results show that the relationship between labour supply and tax ratio is strongly negative and highly significant statistically. The coefficient of determination (R2 statistic) indicates that differences in the tax rate alone explain about a third of the total variation of the labour supply in our sample. According to the model, a 1 percentage point reduction in the tax ratio will increase average hours worked per week by about 1.2%.[8]

The amount by which an increase in labour supply due to a 1 percentage point reduction in the tax ratio will boost general government revenue depends on both the relative size of the labour supply increase and the tax ratio. The lower the average hours worked per week, the greater the relative increases in labour input, economic activity and tax base that will result from a given reduction in taxation. The higher the tax ratio, the greater the portion of the increase that will accrue to general government as tax revenue. Correspondingly, the increase in tax revenue from increasing the tax rate will be the smaller, the more severe the original tax situation. According to our results, raising the tax ratio to 63% or higher would imply that any further increase in the ratio would begin to have a negative effect on tax revenue.

In 2003, Finland's tax ratio was 44.6% and average hours worked per working-age person was 22 hours and 34 minutes. According to our estimation results, lowering the tax ratio by 1 percentage point would boost average weekly working hours by 1.13%. With no change in labour productivity, the GDP effect would be proportional to the labour supply effect and general government tax revenue would accumulate according to the new tax ratio. All in all, a percentage-point reduction in the tax ratio would be

[7] De Haan et al (2004).

[8] For 1993–1996, the unweighted international average for weekly hours is 21.5.

Table.

Actual and estimated average weekly working hours by country, 1970–1974 and 1993–1996

Period	Country	Weekly working hours			Tax ratio, % of GDP
		Actual	Estimated	Difference[1]	
1993–1996	Germany	19.0	21.4	2.3	41.6
	France	17.9	20.6	2.7	44.5
	Canada	22.4	23.0	0.6	35.1
	United Kingdom	23.1	23.1	–0.0	34.9
	Japan	27.0	25.1	–1.9	26.9
	United States	25.8	24.9	–0.9	27.5
	Sweden	22.0	19.1	–2.8	50.2
	Denmark	20.7	19.2	–1.5	50.1
	Norway	20.1	21.2	1.1	42.2
	Finland	21.2	20.1	–1.0	46.5
	Belgium	17.4	20.3	3.0	45.6
	Netherlands	17.0	21.2	4.2	42.2
	Austria	24.8	20.8	–4.0	43.7
	Ireland	19.0	23.0	4.0	35.1
	Switzerland	26.4	25.0	–1.4	27.2
	Portugal	22.3	23.5	1.2	33.2
	Spain	16.5	23.3	6.8	33.9
	New Zealand	24.2	22.6	–1.7	36.8
	Average	21.5	–	–	38.7
1970–1974	Germany	25.0	22.4	–2.6	37.4
	France	23.7	22.8	–0.8	35.8
	Canada	21.7	24.3	2.6	30.0
	United Kingdom	25.9	23.0	–2.9	35.2
	Japan	29.6	26.9	–2.7	19.9
	United States	23.4	25.1	1.7	26.8
	Sweden	23.7	20.6	–3.0	44.5
	Norway	22.2	21.9	–0.2	39.4
	Finland	26.2	23.5	–2.7	33.2
	Average	24.6	–	–	33.6
Overall	Average	22.5	–	–	37.0

[1] *Difference = estimated minus actual weekly working hours.*
Source: OECD.

roughly half self-financed in the Finnish situation: 49% of the direct loss in tax revenue would be returned as new revenue through the employment effect.

Our results suggest that the effects of taxation on labour supply are very pronounced but not quite as large as those presented by Prescott. Including only those countries studied by Prescott reduced the number of observations to 12. The resulting estimated equation is:

HRS/POP =
36.2 – 0.378*TAX RATIO
(3.0) (0.089)
R^2 = 0.64, SEE = 2,06

The portion of the total variance of labour supply explained by the equation is now very high (R2 = 64%), in this smaller sample, and the standard error of the regression is considerably reduced. Again the estimated regression

coefficients are highly significant statistically.

Why are the results for the data on large industrial countries so much stronger? The primary reason is that people in the Nordic countries and Austria work more than would be inferred from the relationship that obtains between labour supply and taxation in other countries. Prescott acknowledges this point in his article and says that perhaps publicly financed services such as children's day care are organised in the Nordic countries so as to encourage participation in the labour force and partly counterbalance the negative incentive effects of high tax rates. Another possible explanation is that in small countries mandatory social security contributions, which are statistically treated as taxes, are more closely tied to future pension benefits and hence less tax-like than in the large countries included. That would mean that, for these small countries, the effective tax rates are in fact somewhat lower than the simple statistical measures we have to use. In any case, for the subset of countries included in Prescott's sample, the effects of taxation on labour supply appear to be considerably stronger than for the larger sample.

Discussion of results

Our results indicate that taxation has pronounced effects on labour supply, even though a large part of the differences in labour supply must be accounted for by factors other than taxation. Many previous studies have found considerably smaller taxation effects on labour supply or employment. This is also evident from a recent survey by Erkki Koskela, Jukka Pirttilä and Roope Uusitalo for the Finnish Prime Minister's Office, which covers and assesses several empirical studies on the topic.[9]

The weakness of tax effects found in many earlier studies may result from a variety of reasons. Many earlier studies were based on micro data, and as a result they tended to suffer from a selection bias: not all parts of the population are equally represented. For this reason, it is often the case that labour supply changes can be studied only on the 'intensive margin', ie concerning how the working hours of employed members of the labour force depend on net wages and hence on taxes. However, there is evidence[10] that a key factor in labour supply elasticity is at the 'extensive margin', concerning decisions on labour force participation. Studies that take into account both intensive and extensive margins have reported even higher labour supply elasticities than those reported here.[11]

Some studies on labour market effects of taxation using macro or sectoral data employ a labour union model based on the 'right-to-manage' assumption.[12] In this approach it is assumed that taxation affects only unions' choice (via wage demands) between unemployment and

[9] Koskela et al (2004a and 2004b).

[10] Eg Heckman (1993).

[11] Eg Kimmel and Kniesner (1998) and Kuismanen (2000).

[12] Honkapohja et al (1999).

employment but ignores individuals' labour supply (participation) decisions as if they were irrelevant.[13]

The analysis reported here takes into account almost all labour-supply margins: work decisions by pensioners and other persons outside the labour force, work decisions by the unemployed, and changes in the working hours of the employed members of the labour force. In essence, in our study only the immigration margin is excluded, something that could possibly have modestly strengthened the labour supply effects of taxation. Perhaps the comprehensiveness of our approach is the reason why our results are more pronounced than those of some earlier studies.

The estimates reported here in essence produce the minimum value for the extent to which a cut in taxes is self-financing. This is due to the fact that, in our calculations, labour supply is explained by the average tax ratio rather than average marginal tax ratio, whereas the latter is more important in terms of incentives. Average marginal tax ratios are in fact generally higher than average tax ratios. If our calculations could be based on average marginal tax ratios, the positive incentive effects of tax easing would probably be stronger and the self-financing degree of tax reform would be higher than those reported here. Social security reform could also reduce the effective marginal tax ratio and thus produce a more favourable tradeoff between employment and public revenue than a general reduction in the overall level of taxes. This would be particularly important in connection with the removal of 'incentive traps' and upgrading the actuarial soundness and transparency of the pension system.

[13] Suvanto (2004).

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Microanalysis of price-change frequencies

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Introduction

Price stickiness is becoming increasingly important in economic analysis. Many recent studies that model business fluctuations and monetary policy assume that firms change their product prices relatively infrequently. For example, in the Bank of Finland's new Aino model, built for forecasting and simulation purposes, firms' pricing behaviour is based on this assumption. Although relatively little empirical research has been done on measuring price stickiness, the findings suggest that individual wholesale and retail prices sometimes remain unchanged for as long as several months. However, studies that estimate price-change frequencies based on more ample microdata do also suggest that there are significant differences between products in this regard. Moreover, survey studies have shown that pricing principles are not uniform across companies but vary eg according to the economic sector in which a company operates.

Empirical analysis of microdata on frequencies and magnitudes of changes in individual producer and consumer prices is very closely related to the study of inflation dynamics. The price-formation models of modern macroeconomic theory emphasise the idea that inflation is expectations-based and forward-looking. In these models, cyclical changes in marginal costs drive inflation, and expected changes therein explain movements in the economy's inflation rate. However, the use of these models presents some challenges for both theoretical and empirical analysis, which makes them the focus of continual and intensive discussions in macroeconomics. One of these challenges is the measurement of marginal costs. It is very difficult to find direct and accurate measures of marginal costs, and so these are often proxied by output gaps reflecting excess aggregate demand. Although the output gap intuitively seems a reasonable measure of inflation pressure, empirical research on inflation has shown that its use in modern models of inflation dynamics substantially weakens model performance in empirical work.

But perhaps an even greater challenge than measurement problems concerns the weakness of the transmission mechanism for inflation shocks.

Specifically, empirical studies have found that the time required for convergence back to equilibrium following an inflation shock is generally very long. In fact, it is typical for many countries and various overall inflation measures that the first-order autocorrelation coefficient exceeds 0.9. This means that inflation is highly correlated with its own history and that inflation shocks have long-lasting effects. This high autocorrelation, ie persistence, of inflation is a central issue in macroeconomic debates on inflation dynamics.

How, then, can we explain the persistence of inflation? There may be several possible theoretical explanations. First, persistence could be a structural characteristic of inflation: ie the start-up mechanism for inflation could actually be such that the inflation rate is slow to converge back to its equilibrium level following a shock. On the other hand, changes may have

occurred in the conduct of economic policy, especially monetary policy, as a result of which the process of reversing realised inflation simply appears slow.

Another possibility is that inflation shocks themselves are persistent. However, empirical evidence suggests that autocorrelation in the inflation rate is very difficult to explain solely in terms of time-series characteristics of shocks. On the other hand, the process of forming expectations, especially unbiased rational expectations, may be critical for understanding inflation dynamics. Autocorrelation in the economy's inflation rate could also be, at least in part, a reflection of aggregation bias. For this reason, micro-economic panel data on individual product prices are especially useful.

In 2004, the Bank of Finland obtained the 1997–2003 raw data for the consumer price index (CPI) from Statistics Finland. These data now comprise some 50,000 monthly price observations on individual consumer goods. The data are, however, not fully comparable over the entire time period because the types of outlet that individual price records were collected from can be identified for 2000–2003 but not for 1997–1999. For this reason, the discussion below of factors relating to changes in consumer prices focuses on the more recent subperiod. Results derived from the 1997–1999 data are, however, consistent with those from the combined data presented below.

The raw data are highly detailed. For example, from the 2000–2003 data, we could find the price of a package of rice of specified weight sold each month at a particular outlet type in a given region. However, price data are not collected for every product every month, some being collected eg every other month, and others only once per quarter. For some consumer products, eg seasonal products, price data are collected monthly but only during certain parts of the year. For this reason, the raw data include price type (eg discounted) and collection frequency.

Price-change frequencies for consumer goods

Some commonplace uses of CPI data in inflation analysis are to study how often Finnish consumer prices change on average, how large the changes are on average, and whether price formation differs across regions, outlet types or products. In estimating average price-change frequencies for consumer prices – or average price durations – data are collected on average times (in months) for which consumer prices remain unchanged. The magnitudes of price changes, on the other hand, tell us about average sizes of price increases and decreases, especially as compared to changes in the overall price level. Differences in price formation can be studied by analysing price-change frequencies and magnitudes for different regions, outlet types and product groups.

During 2000–2003, Finnish consumer prices remained unchanged for nearly six months on average.

This means that during those years the frequency of price change was about 0.164; ie prices changed in

almost eight of the 48 months included in the data. In 1997–1999, the frequency was about 0.188, so that prices changed in nearly seven of 36 months covered. These results are quite consistent with those of international studies. From the distribution of durations we can see that the prices of some consumer goods remain unchanged for long periods, as much as 4–5 times the average duration. This means that the simple average (mean) could well underestimate the true price-change frequency for consumer prices. The median gives an average duration of just under four months for the period 2000–2003, and just over three months for 1997–1999.

For collecting price data, Finland is divided into six regions: Uusimaa; southern, eastern, central and western Finland; and Åland. In addition, price data on some products are collected for the country as whole. One surprise regarding the regional distribution of durations is that there is very little variation in the average duration across the regions. Except for Åland, where consumer prices were stable for nine months on average, the regional durations ranged from five to six. The increase in duration from the data for 1997–1999 was minor, with the greatest increase in Åland.

Differences in duration surface in analyses by outlet type (Table 1) and product group (Table 2).

It thus appears that the large outlets – hypermarkets and supermarkets, department shores and self-service outlets – change prices more often and in smaller steps. But petrol stations and cafeterias differ sharply from the others. Petrol stations represent 'flexible pricing', with prices changing every other month on average, probably mainly in connection with fuel prices. In cafeterias, on the other hand, prices remain unchanged for fairly long periods, 17 months on average, and so these can be characterised as outlets that adjust their prices infrequently.

Table 1.

Average price durations by outlet type, 2000–2003

Outlet type	*Median duration, months*	*Average duration, months*	*Frequency of change*
Hypermarkets	*4.1*	*5.9*	*0.155*
Department stores	*4.2*	*6.0*	*0.154*
Supermarkets	*3.7*	*5.3*	*0.172*
Self-service stores	*3.9*	*5.6*	*0.165*
Cafeterias	*11.6*	*16.8*	*0.058*
Kiosks	*8.7*	*12.5*	*0.077*
Petrol stations	*1.2*	*1.7*	*0.445*
Specialist stores	*3.9*	*5.6*	*0.165*
Service providers	*7.4*	*10.6*	*0.090*
Others	*7.9*	*11.4*	*0.084*
Overall	*3.9*	*5.6*	*0.165*

Source: Bank of Finland.

Table 2.

Average price durations by product group, 2000–2003

Product group	*Median duration, months*	*Average duration, months*	*Frequency of change*
Food	*3.4*	*4.9*	*0.185*
Alcohol and tobacco	*5.5*	*7.9*	*0.119*
Clothing and footwear	*3.5*	*5.1*	*0.178*
Housing and electricity	*3.4*	*4.9*	*0.185*
Furniture and domestic appliances	*5.8*	*8.4*	*0.112*
Health care	*6.9*	*9.9*	*0.096*
Transport	*1.9*	*2.7*	*0.310*
Communications	*1.8*	*2.6*	*0.319*
Recreation	*4.5*	*6.4*	*0.145*
Education	*26.2*	*32.6*	*0.030*
Hotels, cafetrias and restaurants	*6.8*	*9.8*	*0.097*
Miscellaneous	*6.3*	*9.1*	*0.104*
Overall	*3.9*	*5.6*	*0.165*

Source: Bank of Finland.

Average durations for product groups and corresponding change frequencies show that prices change most frequently in transport and communications, whereas eg education prices change very seldom on average. Differences across product groups perhaps show up most clearly when the data are aggregated into individual national accounts (NA) consumption categories: energy, unprocessed foods, non-energy industrial goods, processed foods and services. Table 3 presents average durations and price frequencies for these groups.

The 'flexible-price products' appear to be energy and unprocessed foods; their prices change nearly every month or, practically speaking, almost daily. At the other end of the duration distribution, we find processed foods and services, whose prices remain unchanged for nine months on average.

Table 3.

Average price durations by HICP product category

Product category	*Median duration, months*	*Average duration, months*	*Frequency of change*
Energy	*0.44*	*0.64*	*0.800*
Unprocessed foods	*1.0*	*1.5*	*0.510*
Non-energy industrial goods	*4.6*	*6.6*	*0.141*
Processed foods	*6.2*	*9.0*	*0.105*
Services	*6.3*	*9.1*	*0.104*
Overall	*3.9*	*5.6*	*0.165*

Source: Bank of Finland.

Table 4.

Average size and frequency of price movements

Product category	*Average rise*	*Average decline*	*Frequency of rise*	*Frequency of decline*
Energy	*0.04*	*–0.04*	*0.38*	*0.41*
Unprocessed foods	*0.25*	*–0.28*	*0.27*	*0.23*
Non-energy indstrial goods	*0.24*	*–0.24*	*0.07*	*0.07*
Processed foods	*0.12*	*–0.15*	*0.06*	*0.04*
Services	*0.13*	*–0.17*	*0.07*	*0.03*
Overall	*0.16*	*–0.17*	*0.17*	*0.16*

Source: Bank of Finland.

Average price-change magnitudes

Based on CPI data, we can also say that prices of individual consumer goods are not downwardly sticky; they move up and down much more often than does the overall price level. First we find that in 2000–2003 the average price change for individual consumer goods varied from about 5% (energy) to 25% (unprocessed foods). It is noteworthy that prices in both of these product groups decrease as much as or slightly more than they increase. We can conclude that Finnish consumer price inflation is not the result of higher average price increases than decreases. Average frequencies of price increases and decreases and their magnitudes are presented in Table 4.

The differences between product groups are clear as regards price-increase and decrease frequencies. Prices of energy and unprocessed foods are found to decline nearly as often as they rise. These prices change very often, practically every day. Prices of industrial products, and perhaps processed food, rise on average slightly more often than they decline, whereas service prices rise more than two times as often as they decline. These results suggest that Finnish consumer price inflation is specifically due to prices increasing more frequently on average than they decrease.

Concluding remarks

Consumer price inflation in Finland appears to be due to greater frequency

of increases than decreases in consumer prices, on average. Differences across product groups are pronounced, especially in the service sector. Finnish service prices change on average once a year, rising once every 16 months and declining once in just under 40 months. However, the results here indicate that individual service prices are not sticky downwards, since they decline on average as much as they rise. Depending on product type, consumer prices change on average by some 5–25%, ie by much more than the overall price level.

Our results show that change frequencies for prices of Finnish consumer goods are negatively correlated with average change magnitudes. Thus the more often consumer prices change, the smaller the average changes seem to be. This correlation is not particularly strong, and it seems to vary over time. Still, it suggests that companies' pricing decisions are at least partly related to prevailing business conditions: companies change the prices of their products according to the state of the economy rather than simply on certain calendar days.

What is germane here for monetary policy is that individual consumer goods' prices are not sticky downwards in Finland. A positive inflation rate seems to derive from the greater average frequency of price increases compared to decreases. On the other hand, we should keep in mind that differences in price-change frequencies between product groups are highly significant. The results here suggest that the initial affects of monetary policy measures may be essentially associated with changes in relative prices. Hence the slow post-shock convergence of inflation may be simply due to the fact that price changes are not perfectly synchronised across the economy. This way of thinking complements the traditional view of changes in aggregate demand as a transmission mechanism of monetary policy. But, clearly, more research is needed on the effects of monetary policy and other cyclical factors on the dynamics of individual product prices.

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Series A

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Financial integration
Heikki Koskenkylä (ed.)
A:108
ISBN 952-462-164-9, print
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Key words: financial markets, integration, clearing and settlement systems, structural change, regulation and supervision, stability

Financial integration is key to the European Union's growth and competitiveness strategy (the Lisbon Strategy), which aims to make the EU the most competitive economic area in the world. European Commission studies indicate that the growth and employment effects of broadening and deepening integration will be considerable. The impact will be seen in household and corporate access to both finance and other financial services at rates below those of today and from a broader and more reliable array of products.

Financial integration has advanced at different rates in different sectors, hastened by market forces, technological development and the introduction of the euro. The public authorities also play a crucial role in promoting integration and ensuring stability and confidence in the financial markets, including improved consumer protection, prevention of criminal misuse of the financial system and promotion of competitiveness.

Integration is most advanced in the European debt markets and in the wholesale market for short-term debt instruments. Development within the retail banking sector has been slower. Households and small and medium-sized enterprises are still modest users of cross-border financial services. With regard to the infrastructures already in place in the financial markets, the systems for large-value payments operate effectively and reliably at the cross-border level. In contrast, systems handling small-value payments still require further improvement in order to provide as rapid and reasonably priced transfer of payments across international borders as now happens with domestic transfers. Furthermore, cross-border securities clearing and settlement continues to be inefficient and expensive. However, many EU-level fora are looking to solve the perceived shortcomings in access to and trade in cross-border financial services.

The European Commission has actively fostered financial market integration, as have the ECB and the ESCB, both of which have sought to encourage the development of an internal market in financial market services. There has been close cooperation between the European Commission, the Council and the ESCB in this area.

Series E

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Essays on financial contracting
Jukka Vauhkonen
E:30
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ISBN 952-462-173-8, online

Key words: financial contracts, security design, capital structure, incomplete contracts

This thesis consists of an introductory chapter and four essays on financial contracting theory. In the first essay, we argue that many adverse selection models of standard one-period loan contracts are not robust to changes in market structure. We argue that debt is not an optimal contract in these models if there is only one (monopoly) financier instead of a large number of competitive financiers.

In the second essay, we examine the welfare effects of allowing banks to hold equity in the firms borrowing from them. According to the agency cost literature, banks' equity stakes in firms borrowing from them would seem to alleviate the borrowing firms' asset-substitution moral hazard problem associated with debt financing. We argue that this alleged benefit of banks' equity holdings is small or non-existent when the banks are explicitly modelled as active monitors and the firms also have access to market finance.

In the third essay, we extend the well-known incomplete contracting model of Aghion and Bolton to attempt to explain the empirical observation that the allocation of control rights between entrepreneur and venture capitalist is often contingent in the following way. If the company's performance (ie earnings before taxes and interest) is poor, the venture capital firm obtains full control of it. If company performance is medium, the entrepreneur retains or obtains more control rights. If company performance is good, the venture capitalist relinquishes most of his control rights.

The fourth essay is a short note in which we show that the main result of Aghion and Bolton's model concerning the optimality properties of contingent control allocations in an incomplete contracting environment holds only if an additional condition is satisfied.

Discussion Papers

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The impact of macroeconomic news on exchange rate volatility

Helinä Laakkonen

24/2004
ISBN 952-462-170-3, print
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Key words: exchange rates, microstructure theory, volatility, news

This study investigates the impact of new information on the volatility of exchange rates. The impact of scheduled US and European macroeconomic news on the volatility of USD/EUR 5-minute returns was tested by using the Flexible Fourier Form method. The results were consistent with earlier studies. Macroeconomic news increased volatility significantly, and news on the United States was the most important. The much-tested hypothesis of bad news having a greater impact on volatility was reconfirmed in this study. The announcements were also divided into two categories, the first containing news that gave conflicting information on the state of the economy (bad and good news at the same time) and the other containing the news that was consistent (where either good or bad news alone was announced). Conflicting news was found to increase volatility significantly more than consistent news. The impact of 'no-surprise' news was also tested. Even in cases where the forecast figures were equal to the final published figures, this still seemed to increase volatility.

Multihoming in the market for payment media: evidence from young Finnish consumers

Ari Hyytinen – Tuomas Takalo

25/2004

ISBN 952-462-174-6, print
ISBN 952-462-175-4, online

Key words: payment media, multihoming, consumer awareness, adoption of financial technology

In the market for payment media, some consumers use only one medium when paying for their point-of-sale transactions, while others multihome and use many. As this pattern reflects the diffusion of new payment media, we take a look at the determinants of the adoption of new payment media through the window of multihoming. Using data on young Finnish consumers, we find that one key determinant of multihoming behaviour is consumer awareness. Our instrumental variable estimates indicate that the better informed use 1.2–1.3 times more payment media than the less well informed. Because many payment method innovations are typically first used simultaneously with established methods, our results suggest that increasing consumer awareness could significantly speed up the adoption of new means of payment, such as electronic money and mobile payments.

Trading Nokia: The roles of the Helsinki vs the New York stock exchanges

Esa Jokivuolle – Markku Lanne

26/2004

ISBN 952-462-176-2, print
ISBN 952-462-177-0, online

Key words: cross-listing, autoregressive conditional duration, market microstructure

We use the autoregressive conditional duration (ACD) framework of Engle and Russell (1998) to study the effect of trading volume on price duration (ie the time lapse between consecutive price changes) of a stock listed in both domestic and foreign markets. As a case study we use the example of Nokia's share, which is actively traded on both the Helsinki Stock Exchange and the New York Stock Exchange (NYSE). We find asymmetry in the volume-price duration relationship between the two markets. In the NYSE the negative relationship is much stronger and exists both during and outside common trading hours. Outside common trading hours no such relationship is significant in Helsinki. Based on the theory of Easley and O'Hara (1992), these results could be interpreted as indicating that informed investors in Nokia trade mainly on the US market whereas Helsinki is the more liquidity-oriented trading place.

Less cash on the counter – Forecasting Finnish payment preferences

Hanna Jyrkönen

27/2004

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ISBN 952-462-179-7, online

Key words: retail payments, payment instruments, electronification

Finnish payment methods have changed rapidly as payment cards have gained increasing popularity and have, to an extent, replaced cash. This article examines this phenomenon and the trends in cash and electronic payment methods in Finland. It starts with an introduction to the statistical data on different payment methods used at points of sale and their electronification, after which learning curve and dynamic regression models are employed to analyse changes in the share of cash payments. Finally, forecasts are presented for the future path of the cash-share.

The data indicate that the use of cards, especially debit cards, has increased substantially. For example, in 1984 some 80% of total purchases (in value terms) were made with cash, whereas by 2002 the corresponding figure had

dropped below 50%. Estimation results suggest that learning curve models are not suitable for explaining the electronification of payment methods in Finland – at least at this stage – whereas the error correction model and its special-case partial adjustment model, coupled with independent explanatory variables, seem to do a better job. A forecast based on the latter indicates that electronification will continue in future and that by 2010 the cash-share of the total value of point-of-sale payments will fall to less than 30%.

Stable price level and changing prices
Antti Suvanto – Juhana Hukkinen
28/2004
ISBN 952-462-180-0, print
ISBN 952-462-181-9, online

Key words: price level, inflation, deflation, prices, business cycles

The paper investigates the relationship between relative price movements and changes in the aggregate price level using monthly data on Finland's Consumer Price Index and its components from the period covering the past eight and a half years. This was a period of very low inflation. The rate of growth in the aggregate price level was occasionally very close to zero. The paper shows that declining nominal prices were a rather common phenomenon during this period of low or no inflation. The declining prices cannot, however, be explained by lack of demand or any generalized deflationary tendencies. Hence, the downward rigidity of nominal prices has not prevented relative price adjustments under price stability. The paper develops a new method for looking at the composition of inflation and illustrating how relative price dynamics interact with changes in the aggregate price level. The correlation of relative price variability and aggregate inflation has been negligible, but the correlation between the skewness of price change distribution and aggregate inflation is high. This is in accordance with the predictions of the menu cost models. A significant proportion of the relative price changes appear to have been persistent, suggesting the dominance of productivity and other supply shocks.

Equilibrium dynamics under lump-sum taxation in an exchange economy with skewed endowments
Mikko Puhakka
29/2004
ISBN 952-462-182-7, print
ISBN 952-462-183-5, online

Key words: overlapping generations economy, saving, cycles, lump-sum taxation

I explore the dynamics in overlapping generations models with pure exchange and lump-sum taxes, in which the second period after-tax endowment is negative, and contrast the characteristics of equilibria to those of models with positive after-tax endowments. In particular, if the intertemporal elasticity of substitution is less than unity, there can be only two-cycle or stable (ie indeterminate) equilibria for certain parameter values. With these values for elasticity, a model with regular endowments can have cycles of any order and chaos. In this sense, the lump-sum taxation in this model operates as a stabilizing device. The precise stability condition holds with a small discount factor and in economies with relatively high taxes in the first period. If the intertemporal elasticity of substitution is greater than unity, the steady state equilibria are unstable, and thus determinate, as is the case with the regular model.

Central counterparty clearing: constructing a framework for evaluation of risks and benefits

Kirsi Ripatti

30/2004
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Key words: central counterparty clearing, clearing, settlement, securities markets, infrastructure, integration

A Central Counterparty (CCP) is an entity that interposes itself between transacting counterparties – a seller vis-à-vis the original buyer and a buyer vis-à-vis the original seller – to guarantee execution of the transaction. Thus, the original transacting parties substitute their contractual relationships with each other with contracts with the CCP.

Central Counterparty Clearing has become increasingly popular in Europe, not just in derivatives markets, where, due to the high risk involved, it has been common for decades, but also in equities markets. Within the European Union, the main factor motivating the increased sophistication in clearing arrangements is the ongoing process of European economic integration, ie the introduction of the euro, the ongoing organisation of an internal market for financial services and the corresponding objective of creating a pan-European financial infrastructure for payments and securities clearing and settlement.

Central counterparty clearing houses exert a broad influence on the functioning of financial markets. They can increase the efficiency and stability of financial markets to the extent that their smooth functioning results in a more efficient use of collateral, lower operating costs and greater liquidity. As market players actively try to achieve economies of scale and scope with mergers and through harmonising their technical processes, they have inevitably had to focus on one of the most fragmented areas in Europe's securities market infrastructure – clearing and settlement. Because of the importance of its role, a CCP must have sound risk management. The CCP assumes responsibility in the aggregate and reallocates risk among participants. Moreover, if the CCP fails to perform risk management well, it can increase risk in the markets.

While the big market players dominate the current CCP market in Europe, it is not only the big players who can benefit from a functioning CCP. With the right structure, a CCP enables small players to stay in the market and makes it possible for issuers in a regional marketplace to achieve market funding. Indeed, this is the tendency currently seen in the newest EU member states – and one of the main arguments against the single European CCP model.

Although the purpose has been to leave CCP questions to market participants, regulatory, oversight and supervisory issues can drive the actions of market participants. Indeed, authorities must sometimes be actively involved in boosting a CCP project to keep their home markets competitive. This may well be the situation facing the Nordic/Baltic market in the near future.

This paper attempts to give a neutral evaluation of the risks and benefits related to the functionality of CCPs in integrating markets and construct a framework for possible future risk-benefit analysis in a Finnish/Nordic-Baltic clearing and settlement infrastructure that incorporates a CCP solution. This is an updated version of a Bank of Finland working paper (Financial Markets Department 01/04).

Robust monetary policy in the New-Keynesian framework
Kai Leitemo – Ulf Söderström
31/2004
ISBN 952-462-186-X, print
ISBN 952-462-187-8, online

Key words: Knightian uncertainty, model uncertainty, robust control, min-max policies

We study the effects of model uncertainty in a simple New-Keynesian model using robust control techniques. Due to the simple model structure, we are able to find closed-form solutions for the robust control problem, analysing both instrument rules and targeting rules under different timing assumptions. In all cases but one, an increased preference for robustness makes monetary policy respond more aggressively to cost shocks but leaves the response to demand shocks unchanged. As a consequence, inflation is less volatile and output is more volatile than under a non-robust policy. Under one particular timing assumption, however, increasing the preference for robustness has no effect on the optimal targeting rule (nor on the economy).

BOFIT Discussion Papers

ISSN 1456-4564 (print)
ISSN 1456-5889 (online)

Liquidity provision in a transition economy: the lessons from Russia
Anna Dorbec
17/2004
ISBN 951-686-972-6, print
ISBN 951-686-973-4, online

Key words: liquidity, finance, transition, Russia, uncertainty, banks, inter-enterprise credit

This paper provides a micro and macroeconomic analysis of the economic role of banks in the Russian economy. Drawing on extensive panel data on Russian enterprises' balance sheets and income statements, we evaluate the determinants of bank financing. We use an econometric model to study the activity of Russian banks in providing liquidity to their credit customers. Even though the liquidity provision system overall suffers from certain deficiencies, we demonstrate its importance in the macroeconomic context, using time series econometric analysis. Bank credit appears to be a significant factor in explaining the dynamics of non-payment and informal financing. Finally, the concept of uncertainty helps us to understand the limited role of Russian banks in providing liquidity.

Does democracy cure the resource curse?
Iikka Korhonen
18/2004
ISBN 951-686-978-5, print
ISBN 951-686-979-3, online

Key words: economic growth, resource curse, cross-country regression, development, governance, institutions

In this paper we utilise a large and reasonably detailed dataset to show that a greater level of

democracy in a country's political institutions can alleviate the widely known resource curse. Raw material abundance affects per capita growth negatively, an effect that seems to work through several different channels. Resource-abundant countries have a lower degree of democracy and political rights, and also a lower level of educational attainment. These factors inhibit growth. On the other hand, countries with large extractive industries exhibit high levels of investment. The effects of resource abundance differ for different types of raw material, and the largest negative effect on growth appears to come from non-fuel extractive raw materials.

Trade specialisation patterns: The case of Russia

Bernadina Algieri

19/2004

ISBN 951-686-980-7, print
ISBN 951-686-981-5, online

This paper considers trade specialisation in Russia, examining changes in trade patterns at the sectoral level over the transition period. Trade based on inter-industry specialisation and intra-industry trade (IIT) are empirically distinguished using the Aquino and Grubel-Lloyd indices. The Aquino index is applied to measure the degree of inter-industry specialisation by sector, while the Grubel-Lloyd index is used to establish the level of IIT. The empirical results support recent trade theory, which predicts an increasing level of intra-industry trade with liberalisation processes. They also suggest how inter- and intra-industry trade coexist. The final econometric estimation of the factor content of Russia's exports (specialisation in resource-intensive products) supports the index analysis.

A meta-analysis of business cycle correlation between the euro area and CEECs: What do we know – and who cares?

Jarko Fidrmuc – Iikka Korhonen

20/2004

ISBN 951-686-982-3, print
ISBN 951-686-983-1, online

Key words: monetary union, optimum currency area, business cycles, meta-analysis

We review the literature on business-cycle correlation between the euro area and Central and Eastern European countries (CEECs), a topic that has gained attention in recent years as new EU entrants prepare for participation in the monetary union. Our meta-analysis suggests several CEECs already have a comparatively high correlation with the euro area business cycle. We also find that estimation methodologies can have a significant impact on correlation coefficients. While central bankers are more conservative in their estimates, we find no evidence of a geographical bias in the studies.

Probability of default models for Russian banks

Anatoly Peresetsky – Alexandr Karminsky – Sergei Golovan

21/2004

ISBN 951-686-986-6, print
ISBN 951-686-987-4, online
Key words: banks, Russia, probability of default models, early warning systems

This paper presents results from an econometric analysis of Russian bank defaults during the period 1997–2003, focusing on the extent to which publicly available information from quarterly bank balance sheets is useful in predicting future defaults. We draw on a binary choice model to construct a probability of default model. We find that preliminary expert clustering or automatic clustering improves the predictive power of models and incorporation of macro

variables into the models is useful. Heuristic criteria are suggested to help compare model performance from the perspectives of investors or banking supervision authorities. Russian banking system trends after the 1998 crisis are analysed with rolling regressions.

Dealing with financial fragility in transition economies

John Bonin – Paul Wachtel

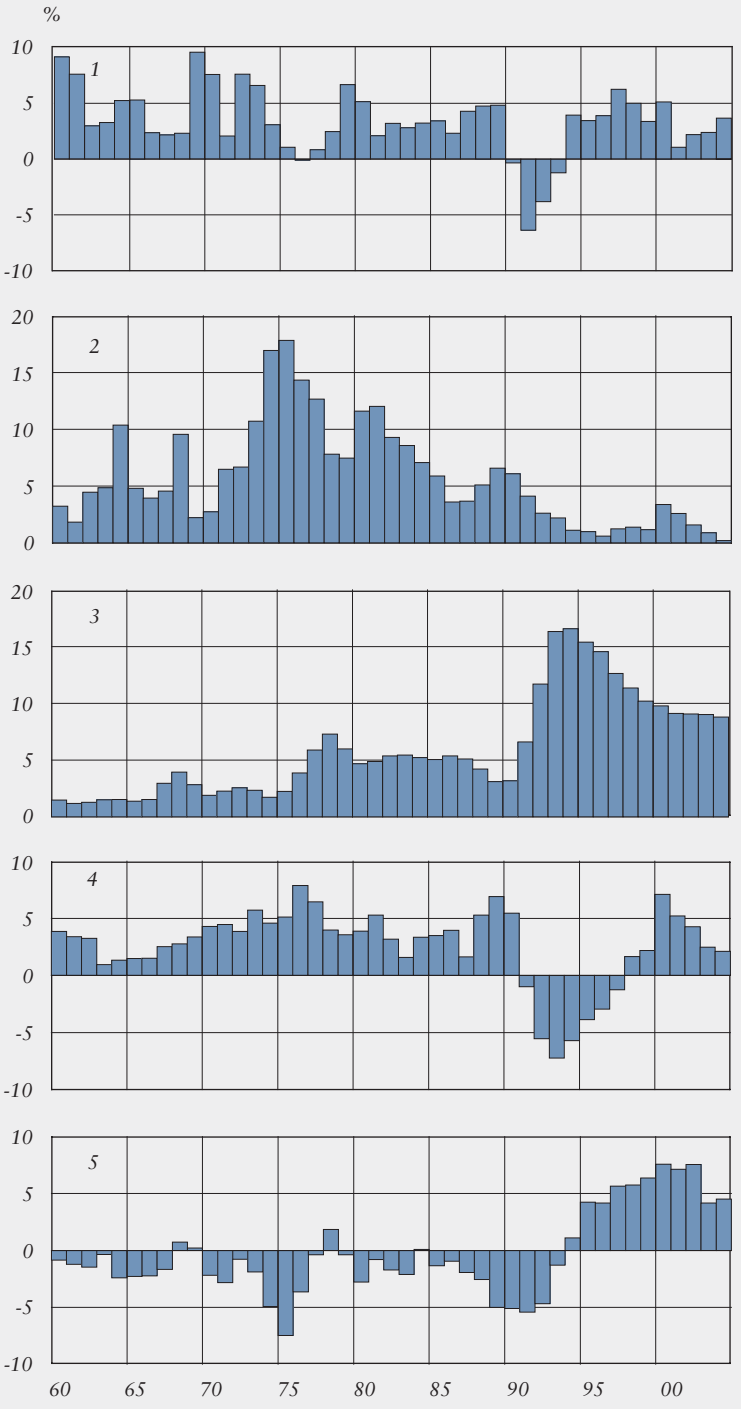
22/2004

ISBN 951-686-984-X, print
ISBN 951-686-985-8, online

We examine the efforts of transition economies to deal with financial fragility and resolve banking crises. We characterize the birthing process of banking systems in transition economies and the three essential features of banking crises in such economies: (i) bad loans and the relationship to state-owned industries, (ii) development of institutional infrastructure and (iii) credible commitments to resolution and privatization. We then discuss the experiences of seven important transition economies in order to identify the salient features of their efforts to resolve banking crises.

Charts

1. Finland: key economic indicators



GDP, volume change from previous year

Consumer prices, change from previous year

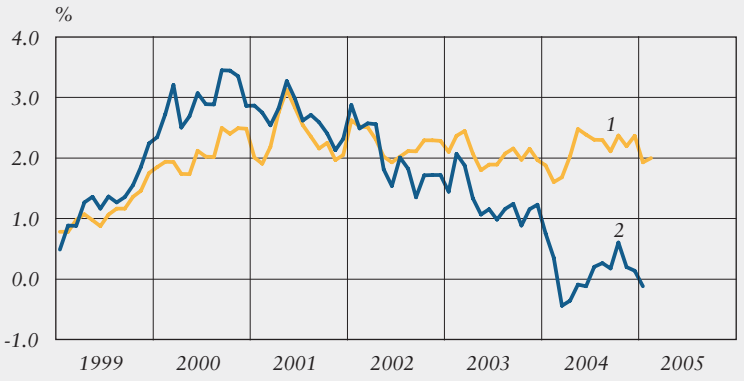
Unemployment rate

General government fiscal position, % of GDP

Current account, % of GDP

Sources: Statistics Finland and Bank of Finland.

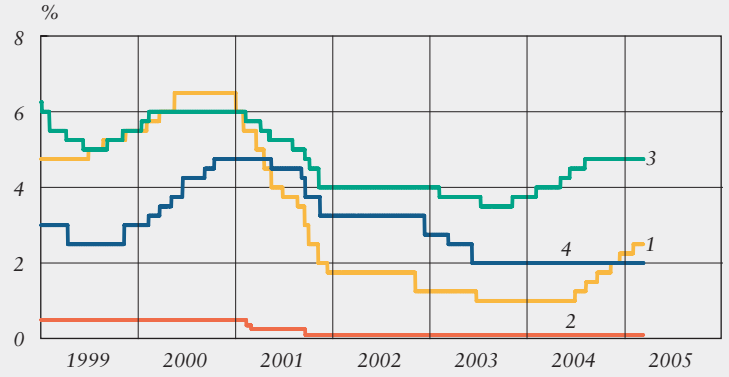
2. Price stability in the euro area and Finland



Harmonised index of consumer prices, 12-month change, %
1. *Euro area*
2. *Finland*

Sources: Eurostat and Statistics Finland.

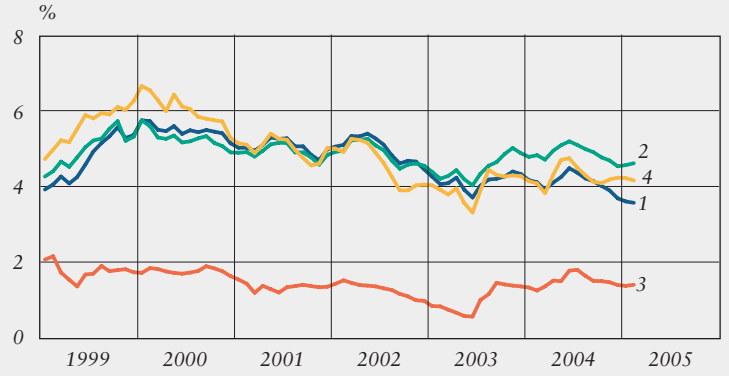
3. Official interest rates



1. *USA: fed funds target rate*
2. *Japan: discount rate*
3. *United Kingdom: repo rate*
4. *Eurosystem: main refinancing rate/minimum bid rate*

Source: Bloomberg.

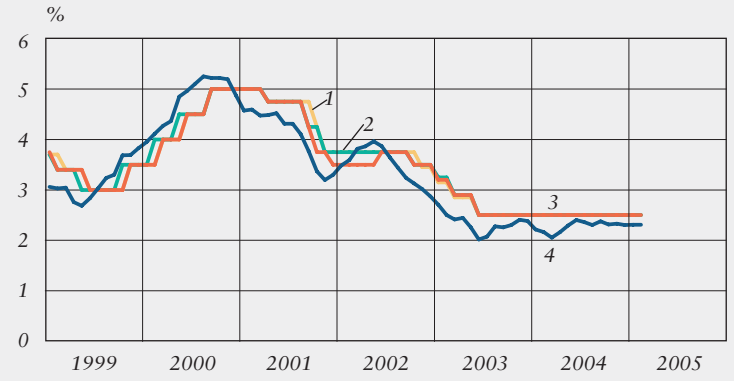
4. International long-term interest rates



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

Source: Reuters.

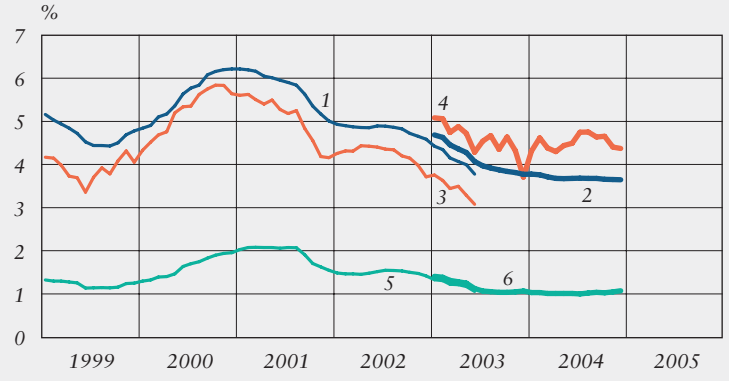
5. Bank reference rates in Finland and 12-month Euribor



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*

Sources: Banks and ECB.

6. Average lending and deposit rates

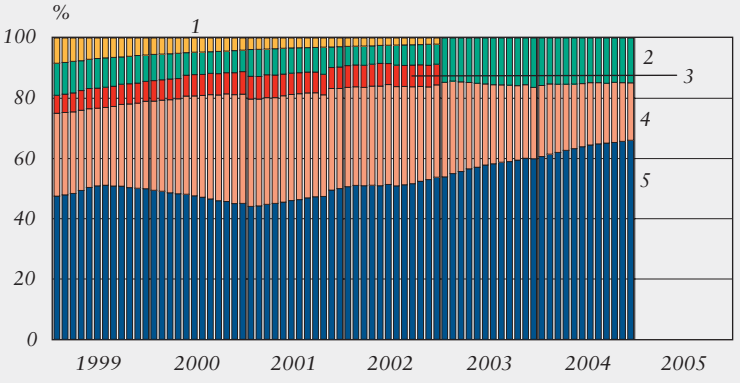


1. *Banks' stock of loans*
2. *MFIs' stock of loans*
3. *Banks' new loans*
4. *MFIs' new loans*
5. *Banks' stock of deposits*
6. *MFIs' stock of deposits*

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

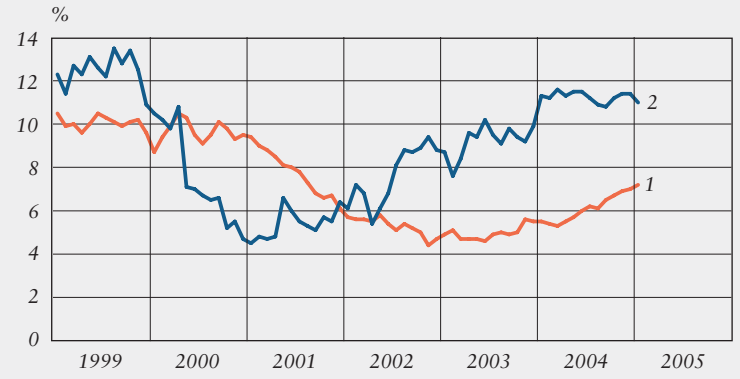


1. *Linked to base rate*
2. *Linked to other rates (as of 2003 includes loans linked to base rate and fixed-rate loans)*
3. *Fixed-rate*
4. *Linked to reference rates of individual banks (prime rates, etc)*
5. *Linked to Euribor*

Source: Bank of Finland.

Data collection changed as of 1 January 2003.

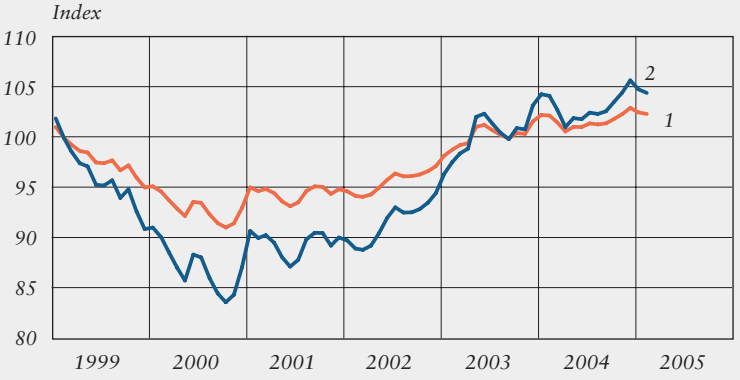
8. MFI loans to private sector



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.

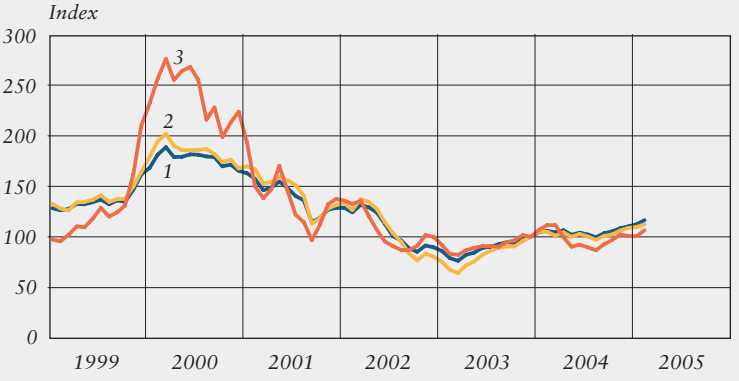
9. Competitiveness indicators for Finland



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.

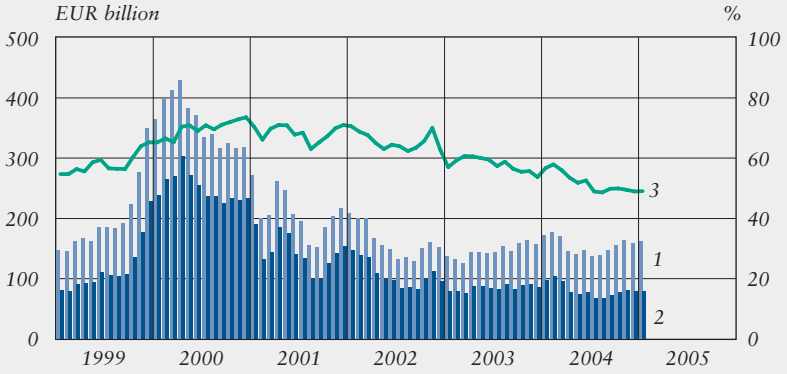
10. Selected stock price indices in the euro area



31 December 2003 = 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.

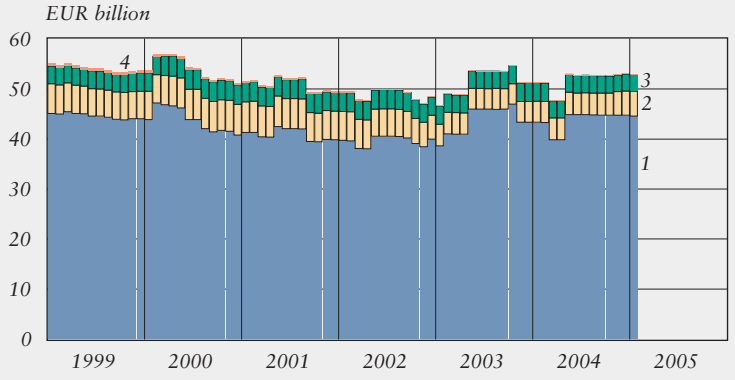
11. Listed shares in Finland: total market capitalisation and non-residents' holdings



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

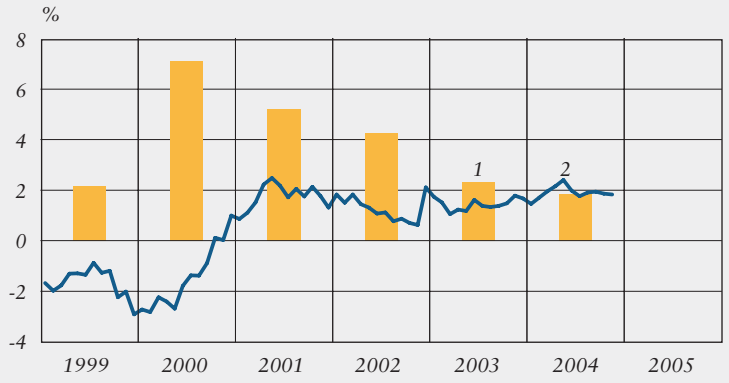


End-month stock

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

Source: Statistics Finland.

13. Public sector balances in Finland

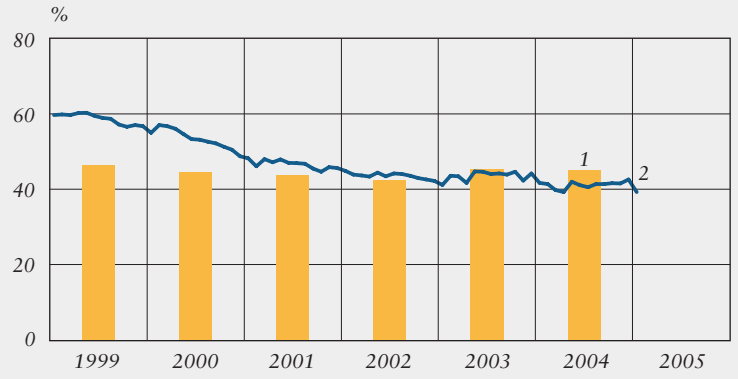


% of GDP

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

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

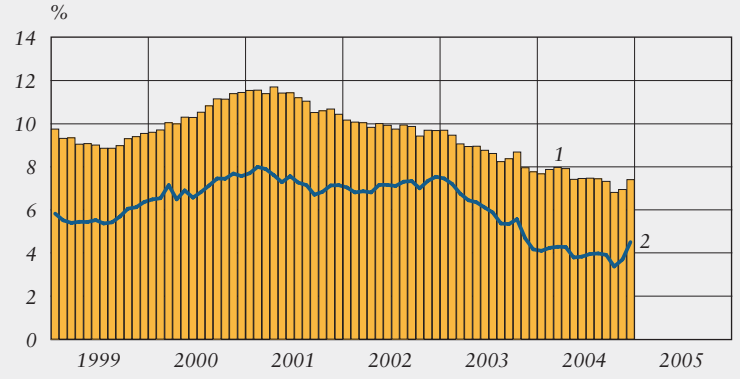
14. Public debt in Finland



% of GDP
1. *General government debt*
2. *Central government debt, 12-month moving total*

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

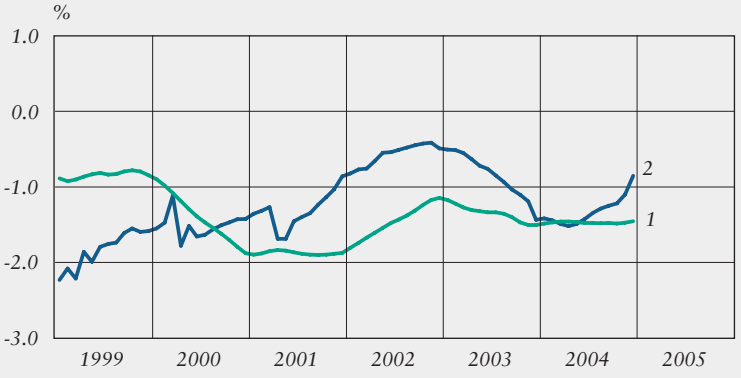
15. Finland: goods account and current account



12-month moving totals, % of GDP
1. *Goods account, fob*
2. *Current account*

Source: Bank of Finland.

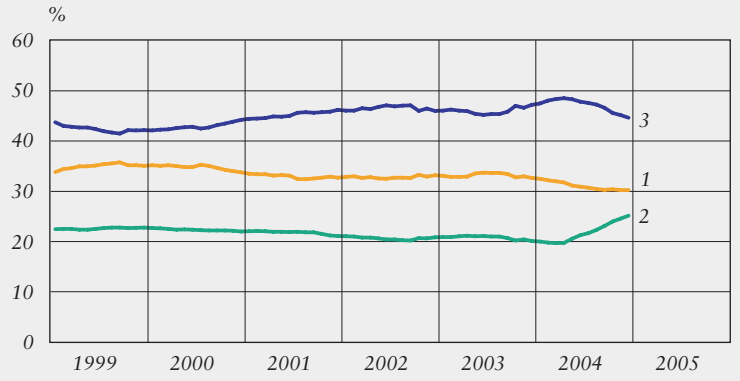
16. Finland: services account and income account



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

Source: Bank of Finland.

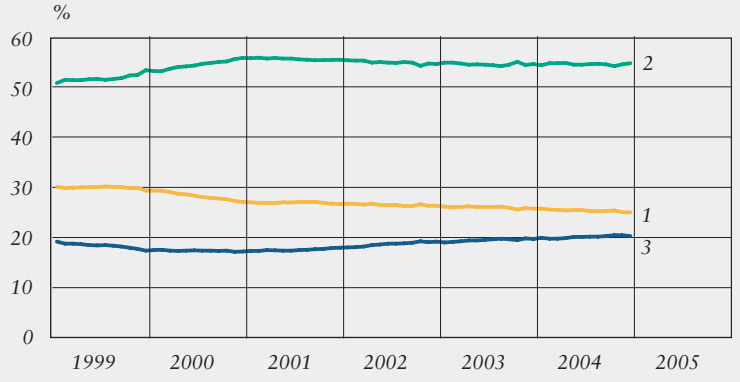
17. Regional distribution of Finnish exports



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.

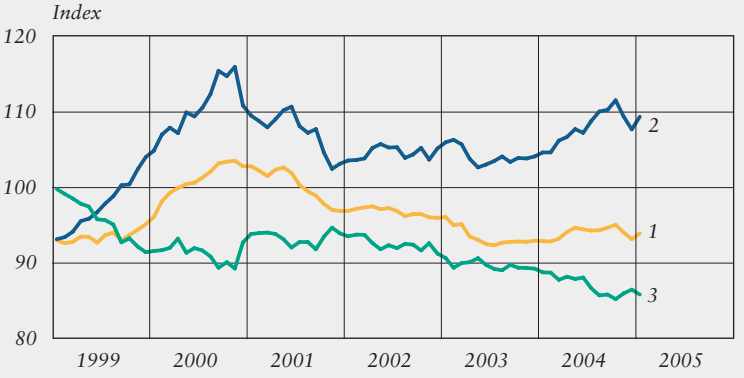
18. Finnish exports by industry



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.

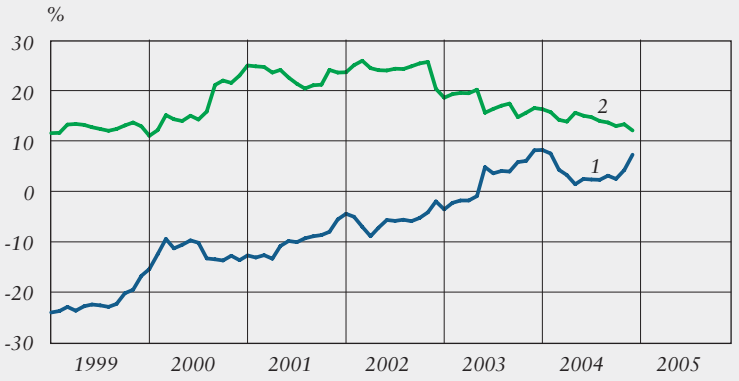
19. Finland's foreign trade: export prices, import prices and terms of trade



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

Source: Statistics Finland.

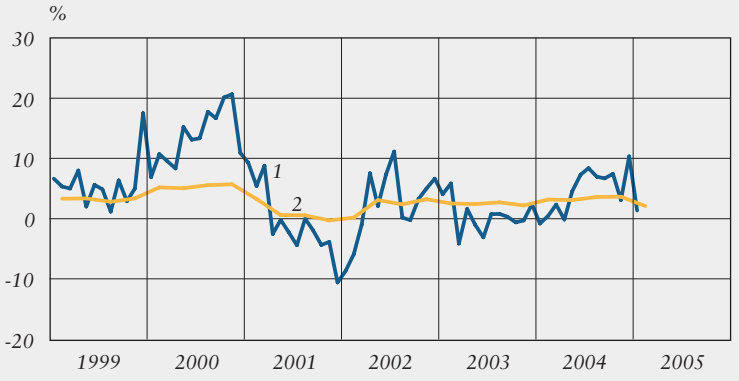
20. Finland's net international investment position



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

Sources: Bank of Finland and Statistics Finland.

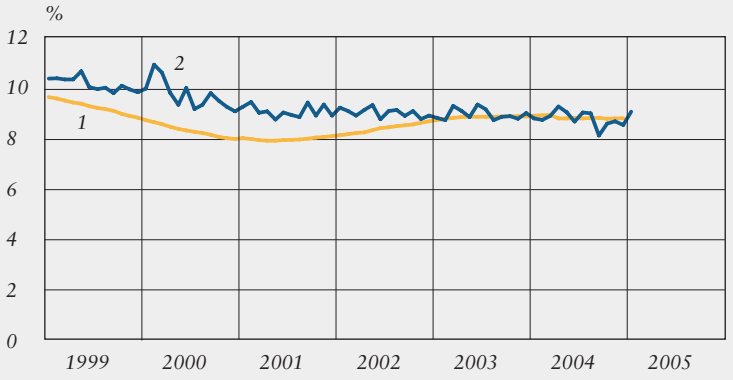
21. Finland: GDP and industrial production



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

Source: Statistics Finland.

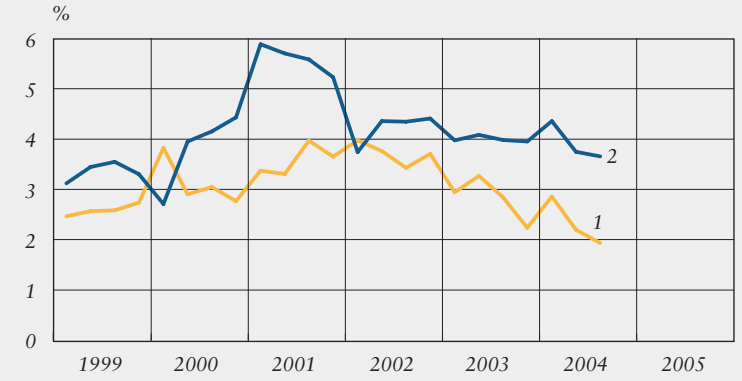
22. Unemployment rate in the euro area and Finland



1. *Euro area*
2. *Finland*

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

23. Hourly labour costs in the euro area and Finland

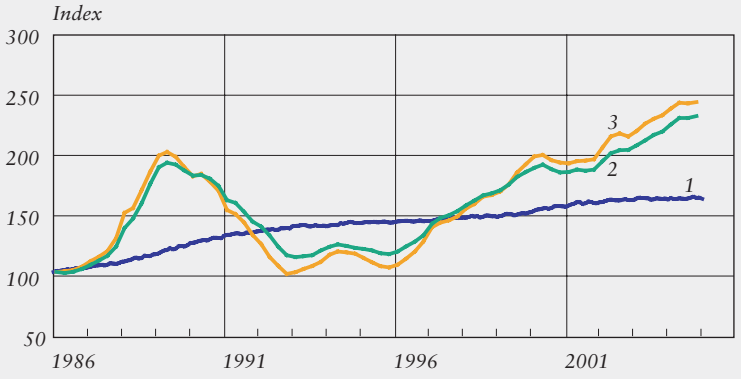


Whole economy excl. agriculture, public administration, education, health and unclassified services.

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

Source: Eurostat.

24. Selected asset prices in Finland



January 1985 = 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 March 2005

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