3 • 2014
Economic outlook
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The front cover depicts the national motif on the Greece 1 cent coin: An Athenian trireme from the fifth century BC.
The extensive industrial restructuring of recent years has weakened the growth base of the Finnish economy. Confidence in the long-term outlook for the economy and in economic policy has, however, sustained the low cost of borrowing for central and local government, for households and, in the main, also for the corporate sector.

Before the onset of the financial crisis, Finland's public finances were in a healthier state than those of many other countries, but in recent years their condition has substantially deteriorated. The continued low level of government bond yields reflects financial market confidence that the deterioration in the public finances can be halted. At the same time, the financial system has remained stable.

Central government, local government and households have exploited the opportunity to accumulate debt. Between 2008 and 2013, fiscal policy in Finland relaxed more than in any other EU country, if relaxation is measured in terms of the change in the general government structural balance as estimated by the European Commission. Moreover, household expenditure has exceeded incomes.

Debt-driven growth in household and general government expenditure has bolstered domestic demand. This has, in fact, developed favourably in recent years relative to GDP and exports, which have been contracting since mid-2008. Since the beginning of 2012, the sluggish trend in exports, and hence in national income, has begun to be reflected more than before in domestic demand and employment.

The current weak condition of the Finnish economy has turned out to be more prolonged than previously estimated. The contraction in exports is linked to the ongoing restructuring of the industrial sector. In addition, diminishing cost-competitiveness has depressed both exports and domestic output competing with imports. The prospects for economic growth have also been weakened by the decline in the size of the working-age population aged under 65 that began in 2010.

Companies can invest and generate employment in Finland if they have confidence in the outlook for the economy and in domestic costs developing competitively. With regard to the level of costs, the two-year pay settlement concluded by the social partners in autumn 2013 was important. According to projections, it will slow the pace of rise in wages and halt the rise in unit labour costs relative to the average in competing countries.

In the euro era (i.e. since 1999), unit labour costs – in other words wages and employers’ ancillary costs per unit of output – have so far risen by just under 15% relative to the average in competing countries. Over the same period, both labour costs and unit labour costs have risen around 10% relative to the euro area average.

Improving cost-competitiveness will require a slower pace of rise in unit labour costs than in the trading partners once the current agreements have run out. Employment and output can additionally be supported by fostering opportunities for company-level solutions, whereby in case of difficult conditions employees can secure their jobs and employers can ensure profitability.

Economic growth in the immediate years ahead can also be supported by reinforcing the economy’s domestic dynamics. According to economic research, removing regulation limiting competition
would accelerate growth in labour productivity and lower prices. The conditions for stimulating housing supply in growth centres can be improved. The mobility of labour from one area or sector to another is a key requirement if an economy undergoing restructuring is to be able to adjust to changed circumstances.

The government has outlined measures to improve the prospects for growth and the long-term sustainability of the public finances. Ambitious, front-loaded implementation of the government's structural policy programme is vitally important.

A pensions reform to extend working careers is a fundamental part of current structural policy. Without such a reform there is no reason to expect any further significant increase in the employment rate amongst older workers. As population ageing pushes up public expenditure, the need for tax revenues will also grow. If pension contributions are larger and the numbers of taxable employees simultaneously lower than before, there is a threat that the burden of taxation and pension contributions will grow substantially from the present level.

Several European countries have in recent years put in place reforms of their pension systems that have significantly raised the age of retirement. In Finland, the need for reform is particularly great, as the size of the elderly population relative to the working-age population will grow exceptionally rapidly over the next 15 years, in particular. Moreover, the present situation in itself is relatively weak, as people retire in Finland earlier than in most other advanced economies.

In its decision on spending limits in March 2014, the Finnish Government outlined measures to halt the further accumulation of debt by central government and general government as a whole. Together with measures to improve long-term sustainability, the measures outlined are of key importance in a situation where the public finances have entered fiscal deficit and the impact of population ageing is growing. Long-term problems in the economy, which have turned out to be structural in nature, cannot be resolved with the help of general government deficits.

Without confidence in the future, households do not consume, companies do not invest or provide employment, and the costs of servicing the public debt will swell. Despite considerable setbacks and risks, confidence has not run out in Finland's ability to return the economy to a growth path and to service the public debt in the future.

In difficult times, the key is a country's capacity to take corrective action. Confidence in the long-term sustainability of economic policy is built up slowly, but can be lost rapidly, particularly in the eyes of the international financial markets.

The decisions on, on one hand, structural reforms and, on the other hand, on general government consolidation measures including expenditure savings and tax increases have been vitally important. If uncertainty were to arise regarding implementation of the decisions taken, the rebuilding of confidence could in the future require much more extensive measures than those currently proposed.
This issue of the Bank of Finland Bulletin presents the Bank’s macroeconomic forecast, which is prepared by the Monetary Policy and Research Department. The forecast report examines recent developments in the economy and the outlook for the present calendar year and the next two years ahead. The focus is on the Finnish economy. The forecast itself describes the most probable developments in the economy, while the attached risk assessment discusses the main uncertainties relating to the economic outlook.

The forecast is prepared as part of the Eurosystem staff projections for future macroeconomic developments in the euro area. Accordingly, the underlying forecast assumptions and assessments of future developments in the international economy are the same as in the Eurosystem staff projections.

The assumption is for interest rates to develop according to market expectations and for exchange rates to remain unchanged during the forecast period.

The forecast for the Finnish economy and the related risk assessment are prepared using macroeconomic models developed at the Bank of Finland and a large body of other data and assessments of economic developments.

The Eurosystem comprises the European Central Bank plus the national central banks of countries in the euro area, including the Bank of Finland.

The forecast for the Finnish economy and the related separate articles are prepared using macroeconomic models developed at the Bank of Finland and a large body of other data and assessments of economic developments.


1 The Eurosystem comprises the European Central Bank plus the national central banks of countries in the euro area, including the Bank of Finland.

Executive summary

Finland’s GDP has been declining without a break since the second half of 2012. Spring 2014 has, however, brought signs of a brighter phase in the economic cycle, and, together with faster international growth, GDP is expected to begin growing again during the course of 2014. According to the Bank of Finland’s macroeconomic forecast, real GDP for the year as a whole will nevertheless remain at the level of 2013. Export growth will gather pace as the global economy and international investment accelerate towards the end of the forecast period. Due to changes in the structure of output, a cyclical upswing in the international economy will no longer generate the same sort of growth effect as we have been accustomed to seeing in Finland. In 2015, growth will accelerate to 1.4%, and in 2016 to 1.5%.

Domestic demand will be sustained particularly by growth in fixed investment, which will become substantially faster in 2015. In contrast, demand will be weak on the housing market, and housing investment will begin to grow again only in 2016. Moreover, private consumption will recover only slowly, and consumption growth will continue to be sluggish throughout the forecast period. Household purchasing power will not improve in real terms until 2016, and growth in private consumption will therefore be based partly on a decline in the savings ratio.

Labour demand will increase only slightly. Economic growth will be sluggish and, with output weighted towards exports, employment will improve less than it usually would. Services will provide few new jobs, with private consumption growing slowly and pressures to cut jobs in local government. The number of people employed will increase by only a few thousand in the years 2014–2016. The unemployment rate will still be rising in 2014, but will thereafter recede by almost 1 percentage point by 2016.

The general government deficit will still be around 2½% of GDP in 2014. 2015 will see a substantial improvement in the public finances as the government consolidation measures decided in March 2014 come into effect. The general government deficit in 2015 and 2016 will be around 1½%. It is uncertain whether the medium-term target of ½% for the structural general government deficit will be achieved during the forecast period. The pace of growth in the central government debt ratio will slow substantially. However, as the local government fiscal balance will not improve, the general government debt ratio will rise further, to 62.9% of GDP in 2016.

Finland’s external balance deteriorated substantially during the financial crisis. During the course of 2014 the current account will be strengthened by export growth. The external balance will be bolstered during the forecast period by reasonably good corporate earnings development, contributed to by stronger growth in export demand and the moderate pace of wage rises. The shrinking general government deficit will also mean a significant improvement in the general government fiscal balance.
increase in savings across the economy as a whole. On the other hand, the household funding deficit will grow cyclically. Another cyclical impact on the current account will come from the recovery in corporate investment. In 2015 and 2016, in particular, savings across the economy will be increasingly devoted to growth in fixed investment.

The period of low inflation will continue. The weak employment situation and a moderate rise in negotiated wages will subdue price and cost developments in 2014 and 2015. Labour costs will grow as demand recovers further in 2016. Inflation as measured by the harmonised index of consumer prices (HICP inflation) will be 1.2% in 2014, accelerating in 2015 to 1.3% as indirect taxation tightens, and to 1.5% in 2016 as costs grow.

Besides developments in the international economy, the forecast is also subject to uncertainty in respect of the Finnish Government’s fiscal policy choices. If the general government consolidation measures agreed at the government discussion on spending limits are not adhered to, financial market confidence in Finland’s economic policy stance could be shaken. This would lead to a general tightening of financial conditions. The price of finance would rise, asset prices decline and credit supply shrink. This would have a negative impact on economic growth.
### Table 1.

**Forecast summary**

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<tbody>
<tr>
<td><strong>At current prices EUR billion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Gross domestic product</td>
<td>193.4</td>
<td>–1.0</td>
<td>–1.4</td>
<td>0.0</td>
<td>1.4</td>
<td>1.5</td>
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<td>Imports</td>
<td>77.8</td>
<td>–0.7</td>
<td>–1.8</td>
<td>1.0</td>
<td>4.1</td>
<td>5.0</td>
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<tr>
<td>Exports</td>
<td>77.6</td>
<td>–0.2</td>
<td>0.3</td>
<td>2.1</td>
<td>4.8</td>
<td>5.0</td>
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<tr>
<td>Private consumption</td>
<td>109.4</td>
<td>0.3</td>
<td>–0.8</td>
<td>–0.7</td>
<td>0.8</td>
<td>1.0</td>
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<td>Public consumption</td>
<td>49.7</td>
<td>0.5</td>
<td>0.8</td>
<td>0.5</td>
<td>–0.8</td>
<td>–0.2</td>
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<tr>
<td>Private fixed investment</td>
<td>31.2</td>
<td>–1.2</td>
<td>–6.4</td>
<td>–4.7</td>
<td>5.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Public investment</td>
<td>5.4</td>
<td>1.7</td>
<td>6.8</td>
<td>–0.6</td>
<td>–1.1</td>
<td>–1.3</td>
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**Key economic indicators**

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<tbody>
<tr>
<td>Harmonised index of consumer prices</td>
<td>3.2</td>
<td>2.2</td>
<td>1.2</td>
<td>1.3</td>
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<tr>
<td>Consumer price index</td>
<td>2.8</td>
<td>1.5</td>
<td>1.0</td>
<td>1.5</td>
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<tr>
<td>Wage and salary earnings</td>
<td>3.2</td>
<td>2.0</td>
<td>1.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Labour compensation per employee</td>
<td>3.5</td>
<td>1.8</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Productivity per person employed</td>
<td>–1.4</td>
<td>–0.3</td>
<td>0.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Unit labour costs</td>
<td>5.0</td>
<td>2.2</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Number of employed</td>
<td>0.4</td>
<td>–1.1</td>
<td>–0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Employment rate, 15–64-year-olds, %</td>
<td>69.0</td>
<td>68.5</td>
<td>68.4</td>
<td>68.8</td>
</tr>
<tr>
<td>Unemployment rate, %</td>
<td>7.7</td>
<td>8.2</td>
<td>8.6</td>
<td>8.3</td>
</tr>
<tr>
<td>Export prices of goods and services</td>
<td>1.2</td>
<td>–0.9</td>
<td>–1.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Terms of trade (goods and services)</td>
<td>–1.2</td>
<td>0.1</td>
<td>0.6</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**% of GDP, National Accounts**

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<tbody>
<tr>
<td>Tax ratio</td>
<td>44.0</td>
<td>45.5</td>
<td>45.6</td>
<td>45.7</td>
</tr>
<tr>
<td>General government net lending</td>
<td>–2.2</td>
<td>–2.4</td>
<td>–2.6</td>
<td>–1.6</td>
</tr>
<tr>
<td>General government debt (EDP)</td>
<td>53.6</td>
<td>57.0</td>
<td>60.3</td>
<td>61.6</td>
</tr>
<tr>
<td>Balance on goods and services</td>
<td>–1.0</td>
<td>–0.1</td>
<td>0.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Current account balance</td>
<td>–1.4</td>
<td>–1.1</td>
<td>–0.6</td>
<td>–0.2</td>
</tr>
</tbody>
</table>

\( f = \) forecast

Sources: Statistics Finland and Bank of Finland.
Recent developments

In 2013, Finnish GDP declined for the second year in a row. While the annual contraction of the economy accelerated, the fall in GDP nevertheless flattened out towards the end of the year. According to National Accounts data, GDP was down by 1.4% in 2013, while private consumption fell by 0.8%. Exports, by contrast, picked up slightly, with annual exports starting to grow moderately. The subdued development of the economy, and of exports in particular, over the past few years was reflected in private investment, which decreased by a full 6%.

According to the cyclical indicator of GDP, output has continued to decline in early 2014. In March, GDP fell by 1% from the previous month, standing 2.3% lower than a year earlier (Chart 1). The decline in output has been felt especially in the processing industries, which saw a contraction in output of 3% year on year. Services output, by contrast, increased by just over 1%.

Cyclical conditions in industry have remained weak. The decline in real industrial output gained momentum towards the end of 2013, and at the beginning of 2014 real output was considerably lower than a year earlier. In February-March, real industrial output appears to have remained broadly unchanged from the beginning of the year.

The trend decline in the output of the electronics industry has continued, while the output of the chemical industry has remained broadly unchanged from early 2013. Output in the metal industry was lower in early 2014 than a year earlier. Similarly, output in the forest industries has edged down somewhat during the past few months (Chart 2).

The industrial outlook remains subdued and has not improved much in early 2014 (Chart 3). Despite some revival of order book confidence in the early part of the year, new industrial orders are still expected to develop more weakly than on average.

The volume of new industrial orders, which anticipates future output, appears to have been growing since the end of 2013. Orders in the metal industry, in particular, have posted robust growth in the early part of the year. Yet, large movements in new
orders are the rule, and numbers vary considerably across companies.

Developments in Finnish exports have been subdued, with real goods exports standing at broadly the same level in February 2014 as at the beginning of 2006. Exports have been bolstered by services exports, which appear to have grown over the past year. In contrast, developments in goods exports have been lacklustre over the past two quarters. Exports to non-euro area countries have particularly declined, whereas exports to the euro area have grown. Moreover, the poor performance of exports has pushed the current account balance into deficit. However, following the bottoming out of the import price rise, the terms of trade have stopped deteriorating.

Advance data released by Statistics Finland indicate that the number of employed declined by 0.5% in the first quarter of 2014, while the number of hours worked decreased by 2.3% year on year. Employment fell sharply in the early part of 2013, in particular, but the fall flattened out towards the end of the year. In April 2014, the number of employed was 18,000 lower than a year earlier.

The trend unemployment rate in April 2014 was 8.5%, broadly unchanged from March, and only 0.3 of a percentage point higher than a year earlier. The trend employment rate in April was 68.4%, 0.2 of a percentage point lower than a year earlier. In the first quarter of 2014, the number of job openings showed a decline of just over 10% from a year earlier.

Weak employment growth and a sharp increase in unemployment,
together with slackening earnings growth, have also been reflected in aggregate wages, which in March 2014 were broadly unchanged from the beginning of 2013.

Consumer confidence in the Finnish economy strengthened in late 2013, only to decline again in early 2014 (Chart 4). However, some restoration of confidence was again seen in April. The threat of rising unemployment has also depressed consumers’ confidence in their own finances to levels much lower than a year earlier.

The volume of new construction has decreased substantially for the third consecutive year. The trend in construction permits, which anticipates future construction output, has continued to fade in early 2014. The low construction volume, together with the bottoming out of commodity price increases, has been reflected in slower growth in construction costs. There has also been a marked loss of construction confidence over the past few months. Construction has increasingly shifted towards renovation construction, which has posted brisk growth.

While retail confidence has recovered during the past few months, growth in sales volumes remains feeble. Consumer prudence, loss of purchasing power and the rising threat of unemployment have been mirrored in consumer behaviour. In contrast, car sales have shown signs of a pickup in the early part of the year.

Consumer price inflation has fallen back by a good 2 percentage points since the end of 2012 (Chart 5). Inflation as measured by the

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**Chart 4.**

**Consumer confidence indicator**

- Green: Consumer confidence indicator
- Red: Consumers’ view of their own finances
- Blue: Consumers’ view of the Finnish economy

**Balance**

- Source: Statistics Finland.

**Chart 5.**

**Breakdown of HICP inflation**

- Energy
- Processed foods
- Non-energy industrial goods
- Services

**Contribution to HICP inflation, % points**

- Source: Statistics Finland.
Box 1.

National accounts for the first quarter of 2014

On 5 June 2014, Statistics Finland published advance quarterly accounts data containing the latest statistical data on Finnish economic developments in the first quarter of 2014 and revised data on quarterly developments in 2013. According to the most recent quarterly national accounts, real GDP contracted in the first quarter of 2014 by 0.5% year on year and 0.4% quarter on quarter. According to the flash estimate published in May, real GDP growth in the first quarter was −0.6% year on year and −0.4% quarter on quarter.

Following adjustment, the GDP growth rates for the last quarter of 2013 were revised upward by 0.1 of a percentage point from the preliminary estimates. Real GDP contracted in the final quarter of 2013 by 0.2% on the third quarter.

The rate of private consumption growth in the first quarter of 2014 was 1.1%, while private investment was 0.6% down on the previous quarter. Public consumption fell by 0.7%, while public investment grew by 3.0%, quarter on quarter. Overall, the contribution of domestic demand to GDP growth amounted to 0.5 of a percentage point.

In the first quarter of 2014, exports and imports declined by 1.9% and 2.9%, respectively, quarter on quarter. Hence, the contribution of net exports to GDP growth was 0.4 of a percentage point in the first quarter. Inventory adjustments and statistical discrepancies reduced GDP growth by 1.3 percentage points.

National Accounts data for the first quarter of 2014 points to a decrease in the number of employed and hours worked by 0.5% and 2.3%, respectively, compared with the corresponding period in the previous year. Given that real total output fell by 0.5%, growth in labour productivity per working hour climbed to 1.7%. The annual growth rate for compensation per employee picked up to 1.1% year on year.

The Bank of Finland’s macroeconomic forecast presented in this publication is based on the quarterly national accounts published by Statistics Finland in March, a flash estimate for the first quarter released in May and extensive indicator data on economic developments.

The most recent quarterly National Accounts data signal a similar economic development for the early part of 2014 to the indicator data previously published. Quarterly GDP growth was flat at −0.4%, unchanged from the flash estimate published in May. The economy continued to contract, while domestic demand became brisker, contrasting with continued subdued developments in exports.
Box 2. Deepening of Ukraine crisis would slow growth

When the situation in Crimea came to a head in late February and early March 2014, it increased uncertainty on the Russian market. The heightened uncertainty and its repercussions are estimated to slow Russian GDP growth by around 1 percentage point relative to the estimate made before the crisis. In addition, the uncertainty caused by the deteriorating situation in eastern Ukraine will weaken Russia’s short-term growth outlook further. If the EU and the United States were to extend their economic sanctions against Russia, the effects both on Russia and on the global economy would be greater still.

In this box, we assess the impact on the Finnish economy of more sluggish trade with Russia and the effect of a possible prolongation of the Ukraine crisis, using a macroeconomic model developed at the Bank of Finland. The assessment comprises three parts: the direct trade impact, indirect effects and exchange rate effects.

Russian trade is very important to output and employment development in Finland. Its share of the value of Finland’s goods exports has averaged 9% over the past 5 years. According to data collected by the OECD and WTO, 7% of the value added exported from Finland in 2009 ended up in final products in Russia. This is equivalent to around 1.7% of GDP. Measured by value added, the only larger export markets are the United States and Germany.

The proposed scenario assumes that Russian imports contract by 25%. The difficulties in Russia’s foreign trade would also be reflected in Finland indirectly through their effects on demand for Finnish exports from other countries, which would decline. The calculation further assumes that the rouble would depreciate by 20%. No estimate is made of effects on the Finnish economy via the financial markets.

A 25% contraction in Russian imports would cut demand for Finnish exports directly by 2 percentage points. The impact would be moderated by Finnish exporters seeking new markets for their products by cutting their prices. As exports to Russia are typically less important to Finland’s competitors, competing countries’ export prices are not expected to react to any significant degree to the fading of import demand from Russia. By contrast, the possible response of oil and other commodity prices to the crisis will affect equally both Finland and her competitors. Finland’s terms of trade would therefore deteriorate. The direct impact on GDP growth of the reduction in exports would be 0.5 of a percentage point in 2014. The negative impact on employment in 2015 and 2016 would be around 30,000 jobs.

The contraction in Russian imports will also reduce economic activity in other parts of the European Union, not just in Finland. Exports to Russia are particularly important for many member states in the east of the EU, but only 2.6% of total EU exports go to Russia. A reduction in economic activity both in the EU and in other countries of importance to Finnish exports would slow the pace of Finland’s export growth by 0.3 of a percentage point and cut GDP growth by around 0.1 of a percentage point.

Exchange rate changes would weaken the competitiveness of Finnish exports. The expected depreciation of around 20% in the value of the rouble would strengthen Finland’s trade-weighted exchange rate by 2%. This, in turn, would cut Finland’s GDP growth by around 0.3 of a percentage point.

All in all, the reduction in Russian imports would slow growth in the Finnish economy in 2014 by as much as 0.9 of a
percentage point. The number of people in employment in 2015 and 2016 would be some 45,000 less than in the baseline forecast. The contraction in exports to Russia could have a higher-than-average impact on certain individual industries, for example electronics and the tourist industry.

Chart.

Finland’s GDP growth in the baseline forecast and if trade with Russia slows

Source: Bank of Finland calculations.
harmonised index of consumer prices (HICP inflation) amounted to 1.3% in April 2014. Back in December 2012, consumer prices were still rising at the rate of 3.5%. The increase in unprocessed food prices, in particular, has moderated over the year, as has the rise in energy prices. In April, the strongest contribution to inflation was made by the price increases on rents, café and restaurant services and alcoholic beverages.

Inflation as measured by the national consumer price index (CPI inflation) amounted to 1.1% in April 2014, having fallen back more sharply in response to the fall in interest rates. Increases in indirect taxes accounted for 0.5 of a percentage point of the rate of inflation in April.

House price inflation appears to have edged down at around mid-2013 throughout the country, although the decline in house prices has been more moderate in the Greater Helsinki area than elsewhere. The bottoming out of house price inflation mirrors weakening demand, which is also reflected in a recent moderation of growth in the housing loan stock.

The contraction of the economy, together with modest tax base growth, has also been reflected in a deterioration in the general government balance. Despite the robust consolidation measures taken, in 2013 the central and local government fiscal deficit remained broadly unchanged from the year before, as the poor performance of the economy has narrowed tax bases and, hence, reduced the impact of the consolidation measures on the central government deficit. There was also a strong increase in general government debt.

### Operating environment

#### International economy and Finland’s export markets

The recovery of the global economy from the financial crisis has progressed at a sluggish pace. Economic growth has picked up slowly in the face of government deleveraging and corporate balance sheet consolidation. In the advanced economies, this adjustment has been reflected in depressed growth in both consumption and investment compared with past performance.

Driven by the advanced economies, the global economy continues on a slow path of recovery (Table 2). In the first quarter of the current year, however, the pace of growth moderated, largely due to temporary factors. Despite the

<table>
<thead>
<tr>
<th>GDP</th>
<th>% change on the previous year</th>
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<tbody>
<tr>
<td>United States</td>
<td>1.9</td>
</tr>
<tr>
<td>Euro area*</td>
<td>-0.4</td>
</tr>
<tr>
<td>Japan</td>
<td>1.6</td>
</tr>
<tr>
<td>Asia excl. Japan</td>
<td>5.9</td>
</tr>
<tr>
<td>World</td>
<td>2.9</td>
</tr>
<tr>
<td>World trade</td>
<td>2.7</td>
</tr>
<tr>
<td>Finland’s export markets**</td>
<td>2.1</td>
</tr>
</tbody>
</table>

* Eurosystem staff projections for macroeconomic developments in the euro area.
** Growth in Finland’s export markets equals growth in imports by countries to which Finland exports, on average, weighted by their respective shares of Finnish exports.
f = forecast
Source: Eurosystem.
pickup in global growth, the growth rate will not yet reach pre-crisis levels in the immediate years ahead.

The monetary policies of major world economies are expansionary and interest rates are low. Looking forward, the monetary policy stance will remain accommodative in the major economic regions despite, for example, a cutback on bond purchases by the US Federal Reserve.

Economic outlook for the major economic regions

In the euro area, the economy began to grow in early 2013, and economic conditions have gradually improved ever since. The most acute phase of the economic crisis has been passed, but developments in euro area economies are still highly divergent. Fuelled by strengthening domestic demand, economic growth in the area will pick up over the next few years, albeit at a rather feeble pace. Growth is constrained by weak earnings growth and the poor employment situation, the slow process of deleveraging and the problems weighing on banking sector lending, which are hitting the SME sector in particular.

In the United States, economic growth picked up towards the end of last year, only to slow down again in the first quarter of 2014 due to temporary factors. Growth rests largely on domestic consumer demand, which has been bolstered by an increase in both the number of employed and earnings and a significant improvement in households’ asset position. Consumer demand growth will continue to underpin economic growth over the next few years. In contrast, companies’ appetite for fixed investment has remained weak. However, fuelled by increasing demand, investment will also recover in the immediate years ahead.

In Japan, the slow and steady pace of growth will continue. In the context of the massive economic policy programme currently underway, financial conditions have been eased considerably, which has helped to put an end to the years-long deflationary spiral. This has coincided with depreciation of the yen. The improvement in the price competitiveness of Japanese companies is boosting the country’s exports and investment in the exports sector, but price increases combined with moderate wage increases and higher taxes serve to contain growth in consumer demand.

In the emerging economies, economic growth has declined somewhat in 2014. Although the pace has slowed somewhat, economic growth in China remains brisk in comparison with other major economies. Structural problems in the economy, faltering productivity growth and a decline in the working-age population will, however, constrain economic growth in the years ahead. The developments in the Ukraine have created a considerable degree of uncertainty in the Russian economy. The investment climate has weakened and financial conditions have been tightened, as the Bank of Russia had to raise interest rates considerably in order to prevent capital flight and depreciation of the rouble. Even in the absence
of a further escalation in Ukraine, economic growth in Russia will remain subdued in the current year and will be only modest in the immediate years ahead.

In the years following the financial crisis, world trade has expanded at the same pace as growth in the world economy. This contrasts with the pre-crisis years, when trade growth was roughly twice as fast as economic growth for almost two decades. Hence, there is scope for further acceleration in world trade, which will, however, still remain broadly in line with growth in the global economy in the current year. Over the next few years, growth will definitely pick up in step with revival in demand for capital goods and consumer durables in the advanced economies.

In recent years, growth in world trade has been much stronger than growth in Finland's export markets. This situation is, however, already about to change in the current year. Growth in Finland's exports market will clearly pick up, closing on the pace of world trade growth. In the immediate years ahead, growth in the export markets will accelerate further as demand for capital goods, which are important to Finland, increases.

Commodity and foreign trade prices

The world market prices of commodities and energy have remained relatively stable over the past few quarters. Looking forward, developments will be characterised by dual trends, with commodity prices rising slightly and energy prices coming down. The price forecast for energy is based on the futures prices for Brent crude (Table 3). The decline in oil prices reflects both supply and demand factors. The sustained sluggish growth in the global economy will constrain demand, while supply will grow in response to the increase in US energy output, higher volumes of export from North Africa and the return of Iranian oil to the global market.

The moderate development of commodity prices is reflected in subdued increases in the export prices of Finland’s competitor countries. The

<table>
<thead>
<tr>
<th>Table 3. Forecast assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland’s export markets1, % change</td>
</tr>
<tr>
<td>Oil price, USD/barrel</td>
</tr>
<tr>
<td>Euro export prices of Finland’s trading partners, % change</td>
</tr>
<tr>
<td>3-month Euribor, %</td>
</tr>
<tr>
<td>Yield on Finnish 10-year government bonds, %</td>
</tr>
<tr>
<td>Finland’s nominal competitiveness indicator2</td>
</tr>
<tr>
<td>US dollar value of one euro</td>
</tr>
</tbody>
</table>

1 Growth in Finland’s export markets equals growth in imports by countries to which Finland exports, on average, weighted by their respective shares of Finnish exports.
2 Narrow plus euro area, 1999Q1 = 100
f = forecast

Sources: Eurosystem and Bank of Finland.
depreciation of the euro that has already occurred and the assumption that the external value of the euro will remain unchanged over the forecast period will serve to reduce the euro-denominated export prices of Finland’s competing export countries in the current year. In 2015–2016, the prices are expected to increase at a slow pace.

**Interest and exchange rates**

According to a forecast assumption based on market expectations, the 3-month Euribor will rise very slowly, and in the final quarter of 2016 it will stand at 0.7% (Chart 6). Finland’s 10-year government bond rate will also increase slowly to around 2.2%.

The interest rate assumptions in the forecast have been derived from market expectations current on 14 May 2014. The interest and exchange rate assumptions are purely technical and do not anticipate the monetary policy decisions of the Governing Council of the European Central Bank or estimates of equilibrium exchange rates.

**Financial markets**

*Constrained access to funding for non-financial corporations in the euro area*

The financial market situation in the euro area has improved at a steady pace in the early part of the year, and access to funding for European banks has become easier. In their efforts to consolidate their balance sheets, banks have, nevertheless, tightened the availability of high-risk corporate loans, and interest rate margins on corporate loans have been on the rise. In addition, corporate and household demand for credit has slackened due to the slow pace of economic growth. In fact, we have witnessed a further contraction in lending to European households and non-financial corporations in early 2014.

The persistence of slow economic growth in the euro area and banks’ low profitability continue to pose risks to the stability of the financial system. In the low interest rate environment, investors have ventured into higher-risk investments in their search for yield, which has bolstered the securities and housing markets, also reducing higher-risk bond yields. If long sustained, this course of development will increase the risk of overheating in these markets. The decisions on the implementation of banking union will foster financial stability in the long run.
Similarly, the stress tests on banks to be conducted in 2014 will promote confidence in the risk resilience of the banking system.

**Growth in household and corporate loan stock has come to a standstill in Finland**

The capital adequacy of Finnish banks has remained sound despite a decline in profitability and a slight increase in loan losses. Similarly to the euro area overall, the major risks facing the Finnish financial system relate to subdued economic growth, while banks’ risk resilience remains good.

Stocks of corporate and household loans have grown sluggishly in Finland, too, with growth in lending to non-financial corporations other than housing corporations coming to a standstill in early 2014 (Chart 7). Generally speaking, banks’ credit conditions have remained unchanged, but concerns have been raised about SMEs’ access to credit. In contrast to SMEs, large companies enjoy more relaxed financing conditions, which is explained by their ability to tap the bond markets for funding.¹

The slackening growth in lending to non-financial corporations can probably be explained by the continued weak demand for credit. Credit demand is dampened by slow economic growth and muted investment needs. According to the Banking Barometer of the Federation of Finnish Financial Services, non-financial corporations currently have a need for working capital rather than investment financing. Household lending growth already slowed notably in autumn 2013, in response to the marked decline in the volume of house purchases.

At the end of 2013, household debt amounted to 119% of disposable income. However, the accumulation of household debt has stopped in response to the slowdown on the housing market. In 2013, the volume of house purchases was a little under 12% lower than the year before. Nominal prices of old owner-occupied flats remained unchanged year on year in the first quarter of 2014. Euribor rates have stayed low and housing loan margins have begun to narrow slightly. The average interest rate on new housing loan drawdowns was 2.03% in March.

The household debt ratio has roughly doubled over the past fifteen years. The debt servicing capacity of

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¹ For a more detailed discussion of the reasons underlying developments in the loan stock, see issue 2/2014 of the Bank of Finland Bulletin.
households is, however, bolstered by the continued low level of interest rates, and households still have rather a strong resilience to risks such as increases in housing loan rates by a few percentage points.\textsuperscript{2}

\textbf{Fiscal policy assumptions}


In 2014, the fiscal policy stance will be relaxed through a reduction in corporation tax and an inflation adjustment of the income tax scale. The first supplementary budget for 2014 further proposes expenditures of about EUR 200 million into measures to promote growth and employment. These measures were decided at the March 2014 government spending limits discussion, which also prepared other major fiscal austerity measures for 2015–2018.

The March 2014 spending limits discussion agreed a total of around EUR 2.3 billion of additional consolidation measures that extend into 2018. The tax increases agreed for 2015–2018 are designed to bring about an increase in net revenue of about EUR 0.9 billion. The tax measures will focus on indirect taxes, especially energy and property taxes. Tax subsidies will also be cut, and income and capital taxation will be slightly tightened.

The cuts in central government expenditure are largely targeted at consumption expenditure and income transfers. Total savings in the amount of roughly EUR 1 billion are scheduled for 2015. Pension indexation will be limited to 0.4\% in 2015, which is consistent with negotiated wage growth under the agreement on employment and growth concluded by the social partners.

The budgetary implications of the expenditure savings will be offset by measures to foster growth and employment, which will add around EUR 600 million to total expenditure in 2014–2015. Economic growth injections will be financed by the sale of government assets. In addition, there will be larger withdrawals from central government funds in 2014–2015, with some of the withdrawn assets being used to pay off government debt.

The forecast assumes an overall increase in the average local income tax rate by a total of 0.2 of a percentage point in 2015–2016. Social security contributions are assumed to grow as agreed in the agreement on employment and growth. Employee pension contributions will increase by 0.8 in 2014 and 0.4 of a percentage point both 2015 and 2016, while unemployment insurance contributions will come down by 0.3 of a percentage point in 2014. Central and local government debt servicing costs are assumed to follow the trend in 10-year Finnish government bond yields.

\textsuperscript{2} Petri Mäki-Fränti (2014) ’Kontalouksien velkaantuaminen ja taloudellinen liikkumavara’ (’Household indebtedness and households’ financial margin’), BoF Online 7/2014.
Non-financial corporations

In the wake of the financial crisis, corporate sector profitability has remained much weaker than before the crisis. Output will pick up during 2014 in response to external demand, and corporate profitability will improve. Corporate profitability will gain an additional boost from productivity beginning to grow faster after several sluggish years.

The decline in labour productivity in recent years across the economy as whole was due particularly to the weak performance of the industrial sector. Labour productivity has collapsed particularly in the forest industries and electronics, yet the biggest impacts from restructuring are beginning to recede and the significance of these sectors to productivity development across the economy as a whole is declining.

Capacity utilisation rates are below average, which means output can be increased in the short term without substantial additional investments in productive capacity. In addition, moderate wage developments throughout the forecast period imply only a moderate rise in corporate costs.

Although corporate price margins will narrow in the forecast period, the slow increase in costs and improved labour productivity will restore growth in the aggregate operating surplus (Chart 8). At the same time, the corporate sector’s funding surplus has remained positive, partly on account of the low investment ratio.

Fixed investment is, however, expected to pick up as the outlook for the export sector improves. The economic fundamentals for investment growth have also improved. Low interest rates, relatively good availability of funding and a reduction in corporation tax will bolster investment growth. In 2015 and 2016, in particular, investment growth will be accelerated by investment in the forest industries, which is returning to its pre-crisis level (Chart 9).

Investment in housing construction will still continue to contract in 2014. The amount of new construction is declining, as the uncertainty in the economy has slowed or even halted the rise in house prices. Housing construction investment is, nevertheless, bolstered by renovation work, whose share has already grown to account for a half of all housing construction investment. Low interest rates, economic recovery and government

Chart 8.

Corporate profitability

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-financial corporations’ funding surplus (right-hand scale)</th>
<th>Non-financial corporations’ operating surplus (left-hand scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>2005</td>
<td>42</td>
<td>48</td>
</tr>
<tr>
<td>2010</td>
<td>44</td>
<td>46</td>
</tr>
<tr>
<td>2015</td>
<td>46</td>
<td>48</td>
</tr>
</tbody>
</table>

Sources: Statistics Finland and Bank of Finland.
support for housing construction will lead to growth in housing construction investment in 2015.

As investment growth accelerates, so growth in the capital stock will also gather pace in the forecast period, but not enough to keep pace with growth in output. Thus, the contribution of growth in capital intensity to GDP growth will remain small. Although the recovery in world trade has been somewhat prolonged, domestic demand and, in particular, investment will grow relatively briskly in Europe already during the early part of the forecast period. As a result, the structure of Finland’s export demand will become favourable, both in terms of the structure of production and geographically. In addition to the forest industries and electronics, the Finnish export sector has also had problems linked to poor economic performance in Finland’s most important export markets (see Box 3). These problems are now receding, and, if we add in the improved labour productivity and cost-competitiveness in the Finnish export industries, loss of export market shares will lessen during the forecast period. Moreover, the number of new industrial orders has increased during the second quarter of 2014. Already in 2014, Finnish exports will begin to grow substantially, and in 2015 and 2016 this growth will accelerate to around 5%.

There will be a marked drop in foreign trade prices in the current year. A drop in the prices of industrial raw materials, the price of oil and the export prices of Finland’s competitors will maintain a downward trend in import prices in 2014. As economic growth turns upwards, raw material prices will begin to rise, and at the same time import prices will also begin a gentle rise. Finnish export prices will closely follow developments in international price levels, and the terms of trade will therefore remain essentially unchanged during the forecast period.
Product structure of Finnish exports becomes less favourable

Growth in the value of Finnish exports has in recent years been considerably weaker than the average for other euro area countries. One reason identified for Finland’s weak export performance, besides rising costs, has been a change in the structure of exports in a less favourable direction. In this box, we examine to what extent the structure of Finland’s goods exports differs from competing countries and to what extent this explains the weak trend in Finnish exports relative to the latter. The treatment focuses on the product distribution of goods exports.

In 2004–2008, Finland’s goods exports were still closely following developments in world trade. World trade was growing rapidly, and the value of goods exports from euro area countries was growing by an average 9% per annum. In Finland, the corresponding figure was 10%. Finland’s most important export markets – Sweden, Germany and Russia – experienced rapid economic growth during these years, which boosted demand for the products exported by Finland. Growth was especially rapid in demand for products important to Finnish exports. However, since 2009, Finland’s export growth has lagged behind that of other euro area countries, despite a rapid increase in demand in the export markets (Chart A).

The weak performance of Finnish exports since 2009 is explained particularly by a rapid contraction in the output of telecommunications equipment. The production capacity of the forest sector has also been reduced in recent years. The significance of these sectors to exports as a whole is more central in Finland than in, for example, Germany and Sweden. In 2013, the forest sector’s share of exports from Finland stood at almost 19%, against approximately 11% for Sweden, and only around 2% in Germany and France. Thus, changes in demand for forest industry products are considerably more significant for Finnish exports than for the other countries in the comparison. In addition to Finland, the export share of telecommunications products has also contracted in Sweden.

If we examine exports without telecommunications and forest industry products, we notice that, measured in this way, the value of Finnish goods exports has grown since the recession at almost the same pace as Swedish exports. By 2012, the

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1 The structure of Finland’s goods exports is also examined in Box 2 of Bank of Finland Bulletin 3/2013: Economic outlook, and in the article ‘Market share of Finnish goods exports contracted sharply since 2007’ in Bank of Finland Bulletin 3/2012: Economic outlook.
value of exports had almost recaptured the level of 2008 (Chart 2). Since 2009, forest sector and telecommunications products have constituted approximately 20% of the value of Finnish exports, against 4% in Germany and 15% in Sweden.

The scale of the structural change in Finland’s goods exports is illustrated if we compare the structure of exports against the corresponding structures of Sweden, Germany and France. The share of the category ‘Machinery, equipment and vehicles’ in the value of Finnish exports in 2010–2013 was approximately 13 percentage points smaller than in 2002–2007. The cause of the contraction lies in exports by the electrical engineering and electronics industry, whose share of the value of all goods exports has contracted from 17% to close to 1%. The contraction in electrical engineering and electronics exports has taken the share of Finland’s exports accounted for by ‘Machinery, equipment and vehicles’ down below 30%. ‘Other industrial goods’ has now grown to become the largest product group. The trend has been the same in Finland’s competitor countries, too.

‘Machinery, equipment and vehicles’ and ‘Other industrial goods’ account for a majority of the value of goods exports by economically significant European countries. In the average product distribution of goods exports over the period 2010–2012, however, there is a considerable difference between Finland and other countries. In the case of Finland, a majority of the value of goods exports comes from exports of ‘Other industrial goods’, whereas for other countries ‘Machinery, equipment and vehicles’ occupy a more important position. Of the latter category, the most important sub-category is ‘Motor vehicles’. Since 2010, this sub-category has accounted for 16% of the value of German and 10% of the value of Swedish goods exports. Only 2% of Finnish exports are cars and other vehicles. Within the category, Finnish exports are weighted more strongly than those of the comparison countries on special machinery for various industries – for example machines for the metal industry – accounting for approximately 7% of the value of Finland’s goods exports.

In addition to the problems in the forest industries and telecommunications, the slower-than-average growth in Finland’s exports relative to other euro area countries since 2009 has been partly down to the fact that in the metals industry, too, output has focused more strongly than in the comparison countries on products whose prices developed weakly over the period 2009–2012. On the other hand, Finland’s export growth since 2010 has also been partly slowed by the country distribution of Finnish exports, as import growth has been sluggish in important export markets.
Investment recovering only slowly

Investment appears to be recovering slowly from the recession. In 2013 the volume of fixed investment in Finland was 4.4% down on the previous year, and without public investment the trend would have been even more sluggish. Over the same period, investment in Sweden contracted around 1%, and in Germany 0.8%.

Since the depression of the early 1990s, however, private fixed investment in Finland has developed well, on average. Between 1995 and the onset of the financial crisis in 2008 gross private fixed investment in Finland (excluding housing construction) grew at an average of 5.9% per annum. Of Finland’s most important European competitors, a corresponding pace of investment growth occurred only in Sweden (Chart A).

Immediately in the wake of the financial crisis, in 2009 and 2010, the collapse in the level of investment in Finland was much greater than in competing countries. Since then, investment growth (averaging 1.3% per annum) has actually been faster than in Germany, France and the United Kingdom. In Sweden, however, the volume of fixed investment has grown much faster than in Finland, at around 4% per annum.

Although economic growth in Finland has since the financial crisis been weaker than in the comparison countries, private investment as a share of GDP has remained relatively large. The investment ratio has been bolstered by the relatively strong trend in construction. From the mid-1990s until the onset of the financial crisis, the GDP share of private fixed investment grew from around 14% to almost 19%. During the recession, the share has receded slightly, to stand at around 16% in 2013.

All in all, investment demand (private and public) has followed economic growth in Finland as in the EU area on average in such a way that the turning points in investment growth have, particularly in recent years, often come 1–2 quarters after growth in GDP (Charts B and C). However, investment demand in Finland is now falling behind corresponding demand in the rest of Europe. In 2013, the average pace of growth in fixed investment in the EU had already reached the pace of GDP growth, while in Finland the volume of fixed investment, in contrast, contracted.

As in the past, a deterioration in the availability of credit has now, too, been seen as
limiting investment, particularly among small and medium-sized enterprises. The Finnish banking sector did, however, come through the crisis on the financial markets with less damage than in many other European countries, and the availability of funding is therefore hardly the worst obstacle to investment at the moment. Rather than funding issues, a more likely explanation of the weak trend in fixed investment is the production structure of Finnish industry, with its major emphasis on capital goods. Investment demand will recover in Finland, too, as investment really gets underway in the Finnish export markets and corporate confidence in the economy improves.
Economic outlook

Households

Since the financial crisis, Finland’s economic growth has been based largely on private consumption. However, consumption growth began to fade in 2012, and in 2013 there was actually a contraction in consumption (Chart 10).

Consumer confidence in the Finnish economy has weakened further in the early months of 2014. Fewer and fewer consumers believe their own finances will improve over the next year, and this is seen as an unfavourable time for the purchase of consumer durables or housing, in particular. Moreover, unemployment is felt to be more of a threat than previously.

Consumer uncertainty and weaker purchasing power have been reflected in the volume of retail trade, which contracted by almost 1% in 2013. The retail sector has continued to perform sluggishly through the early part of 2014.

Private consumption will contract further in the current year as the slowing pace of rise in nominal earnings and tightening of taxation as well as a weaker employment situation subdue growth in aggregate wages and reduce consumers’ purchasing power. Growth in government income transfers to households will also slow. Private consumption growth will nevertheless accelerate to around 1% in 2015, when the savings ratio will decline and growth in disposable household income will gather pace.

With the pace of rise in nominal earnings accelerating in 2015 and the employment situation improving somewhat, this will boost growth in disposable household income. Compared with the past, however, the pace of this growth will be sluggish, and wage-earners’ purchasing power will barely grow in the immediate years ahead. Moderate rises in negotiated wages and general government consolidation measures will subdue the increase in disposable income during the forecast period. In the immediate years ahead, there will be only a sluggish increase in household purchasing power.

The savings ratio will remain at a good 1% in 2014, with households showing less willingness to borrow and caution in spending causing a contraction in consumption. The savings ratio will decline substantially in 2015. The gradual improvement in the economy will mean the threat of

**Chart 10.**

Households’ disposable income, consumption and savings

<table>
<thead>
<tr>
<th>Year</th>
<th>Savings ratio</th>
<th>Household’s real disposable income*</th>
<th>Private consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>-3%</td>
<td>-2%</td>
<td>-4%</td>
</tr>
<tr>
<td>2009</td>
<td>-1%</td>
<td>-3%</td>
<td>-3%</td>
</tr>
<tr>
<td>2014</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Sources: Statistics Finland and Bank of Finland.

* % change from previous year

Households = households and non-profit institutions serving households.

Households’ disposable income, consumption and savings

Savings ratio
Households’ real disposable income*
Private consumption*

2004 2009 2014

-4 2 0 -2

Sources: Statistics Finland and Bank of Finland.

Households = households and non-profit institutions serving households.

* % change from previous year

Households’ disposable income, consumption and savings
unemployment will recede and employment improve, leading households to reduce precautionary savings.

Household incomes and private consumption have been bolstered in recent years by strong growth in income transfers, and particularly pension income. Growth in income transfers will slow in the forecast period, but will nevertheless remain faster than growth in wage and salary earnings. Meanwhile, the share of pension incomes relative to overall incomes, and wage and salary earnings in particular, has grown substantially in recent years, with an increase in the number of retirees and pension index increments boosting pension income. At the same time, wage and salary earnings have developed sluggishly.

Household caution in relation to house purchases has reduced demand for loans and subdued the pace of rise in house prices. In addition, debt accumulation by households has slowed. In contrast, housing corporation indebtedness has rapidly increased in view of the strength of renovation activity, and this has possibly helped to reduce other household debt accumulation. With a strong contraction in new housing construction in 2013 subduing growth in the supply of housing, house price rises will gradually gather pace towards the end of the forecast period.

GDP and employment

Economy recovering, led by export demand

The faint signs observable during spring 2014 of a brighter turn in the economic cycle suggest that output will begin to grow during the course of the year, and growth will accelerate towards the end of the year. On average, however, real GDP in 2014 will not be up on the previous year, as the pace of GDP growth is being slowed by the weak carry-over effect from 2013. In 2015, growth will accelerate to 1.4%, and in 2016 the figures will approach the estimated long-term pace of GDP growth, 1.5% (Chart 11). These GDP growth figures will be very slow in international comparison. The restructuring of the Finnish economy means the economic upswing will no longer generate the same growth effect as we have previously been familiar with in Finland.

Growth will initially be led by export demand as growth accelerates in the euro area and other export markets important to Finland. Export growth will, however, be on average slightly slower than growth in the export markets. Growth in export demand will, in part, be subdued by Finland’s problems with cost-competitiveness. Despite the moderate wage agreement reached in autumn 2013, competitiveness measured by unit labour costs will improve only slowly relative to the rest of the euro area. Imports will still grow more slowly than exports in 2014, meaning net exports will boost output.
As export demand picks up and corporate confidence is restored, investment by Finnish companies will also gradually begin to accelerate. Investment demand will be supported by the moderate pay settlement, low interest rates, continued relatively easy access to funding and cuts in the corporation tax rate. In 2014, however, annual real growth in investment will still lag behind the previous year, largely as a result of the carry-over effect. In 2015 the pace of growth in private fixed investment will accelerate to 4.3%, reflecting in particular growth in fixed investment in the forest industries.

Of the components of aggregate demand, the last to recover will be private consumption. This will continue to contract in 2014 and embark on slow growth only in 2015, when the improved economic outlook begins to have an impact on employment and household earnings. In the final year of the forecast period, annual growth in household consumption will still be only 1% (Chart 12).

During the recession, the pace of growth in labour productivity lagged substantially behind its long-term pace of growth. Relative to the past, exceptional during the recession was that total factor productivity also declined (see Box 5). In part, this has been a question of a normal cyclical decline in labour productivity, as the reduction in employment in many sectors has been less than the contraction in output. The pace of productivity growth has also been slowed by the ongoing restructuring of the economy, as employees have moved from sectors with high productivity to those with lower productivity, such as public services. Weak development of the capital stock has also not supported labour productivity growth.
During the forecast years the pace of growth in labour productivity will, however, accelerate, particularly in private production. The government’s structural policy programme of spring 2014 set a target of accelerating the pace of productivity growth in public services by 0.5 of a percentage point per annum. Even if achieved, the pace of growth will be slow, and productivity developments in public services are not expected to improve during the forecast years. Indeed, across the economy as a whole, average productivity growth will still be just 1% in 2016 (Chart 13).

**Employment to improve only slightly**

The sluggish pace of economic growth will boost labour demand relatively little. Companies adjust their workforce to match growth in output, which will be slower than previously expected. The number of hours worked will, in fact, initially grow faster than the number of employed. In fact, the number of employed in 2014 will average 10,000 less than in 2013 and will only begin to grow slowly in the first half of 2015. The cyclical upturn will be driven by exports and investment, and output growth in these sectors will generate relatively few new jobs. The weak growth in private consumption means jobs will not be generated in labour-intensive private services. In local government, too, the pressures to cut staff are growing.

Labour supply will increase to some degree during the forecast period, and the labour force participation rate of 15–64-year-olds will rise in 2014–2016 by $1/2$ of a percentage point. The recorded labour force participation rate of 15–74-year-olds will, however, rise less than this. Labour force participation among the over-64s is marginal, but this age group has an increasingly larger weight in the statistics on labour force participation, as the baby-boom cohorts have now reached retirement age.

The employment rate will rise during the forecast period by a good 1 percentage point. The employment rate in 2016 will be 69.4%, which is still lower than before the onset of the financial crisis in 2008. The unemployment rate will already rise to 8.6% in 2014, but will begin to fall again as the employment situation improves. In 2016, the average unemployment rate will come down to 7.8%, around 1 percentage point lower than in 2014 (Chart 14).
Total factor productivity and R&D expenditure growing more slowly

Total factor productivity depicts how efficiently the factors of production (labour and capital) are used in production and the various business processes linked thereto. The output from a given amount of labour and capital is bigger, the higher the level of total factor productivity. Total factor productivity growth can be estimated by subtracting the effect on output growth of labour and capital inputs from the change in output (GDP).\(^1\)

Changes in total factor productivity are significantly reflected in the performance of the economy, and in macroeconomic models changes in total factor productivity are one of the key factors of business cycle fluctuations.

Behind developments in total factor productivity lie both factors that relate to the ability of corporate and public sector units to exploit efficient technologies and factors supportive of innovations. A high level of labour force competence facilitates introduction of the most efficient business procedures and the development of new production and operating models. A further factor enhancing productivity growth is a sufficiently competitive operating environment. It has been noticed that behind improvements in productivity there often lies a sort of creative destruction, in which, as competition tightens, companies that are unable to raise their productivity exit the market. Moreover, in competitive conditions the only companies that can enter the market are those that already have sufficiently good productivity. A third basic factor of productivity is input into research and product development.

Developments in total factor productivity depend also on the level of development within an economy, and average developments can be influenced by changes in the sectoral structure of the economy. It has been observed that technological change processes typically have what is referred to as a catch-up phase. In a country where the level of development lags behind its competitors, for example, the adoption of new operating models can produce rapid improvements in total factor productivity.\(^2\)

Structural changes on the other hand, it has been noted that productivity growth fades rapidly in emerging economies in the absence of investment in the productivity infrastructure. For example, in the euro area, productivity improvements in the catch-up countries have begun to fade, with the result that the technologically most advanced countries have since the end of the 1990s drawn away once more from the other countries of the bloc. European Commission (2013) The drivers of total factor productivity in catching-up economies, Quarterly Report on the Euro Area, vol. 12, no. 3.

The long-term trend in total factor productivity in Finland reveals both a catch-up effect and an economic structure effect. The catch-up phase was experienced in the 1970s and 1980s, while the effects of restructuring were felt in the second half of the 1990s (Chart A). In the 1980s, the relative importance of total factor productivity in relation to output growth was nevertheless less than in the 1990s. The engine of growth at that time was a strong increase in investment, reflected in the substantial contribution of capital intensity to growth. The impact of total factor productivity on economic growth is particularly apparent from the mid-1990s onwards. All the way through to the onset of the financial crisis, strong growth in GDP can be attributed to the upward trend in total factor productivity in the electronics industry.

Both the depression of the 1990s and the financial crisis are visible in developments in total factor productivity. Productivity...
declined to an exceptional extent during the 1990s depression and once the global financial crisis had hit the Finnish economy in 2009. Total factor productivity has also declined during the currently ongoing recession. The effects of the financial crisis are to some extent overlaid on top of the structural problems of the ICT industry and Nokia.

Besides improvements in educational level, the key measurable factor behind total factor productivity is corporate investment in research and development. In Finland, the input into R&D has been substantial relative to other countries. In 2011, the GDP share of R&D expenditure was 3.8%, the highest figure among EU27 countries. R&D activities grew strongly towards the end of the 1990s. Thereafter growth has been slow. Particularly since the financial crisis, there has been a marked decline in R&D expenditure.

Is it, then, the case that the decline in R&D activities is linked in some way to the fading of growth in total factor productivity? The rapid growth in R&D expenditure in the 1990s coincided with rapid growth in total factor productivity (Chart B), while the slow growth in total factor productivity in the years 2009–2012 coincided with weak developments in R&D expenditure.
The causal relationship between the variables is not, however, straightforward. Over half the corporate R&D was connected with the ICT sector, where Nokia has occupied a key role (Chart C). Since 2008, there has no longer been a nominal increase in the sector’s investment in product development, and in 2012 the sector’s R&D investment declined substantially. An apparently promising feature with regard to future development of total factor productivity is the continued growth in corporate R&D expenditure outside the ICT sector in 2011 and 2012.

Total factor productivity growth is of decisive importance to the longer-term performance of the economy. In contrast to the years after the mid-1990s, productivity growth would no longer appear to be derived from increased exploitation of digital technology specifically in the production process. Rather, opportunities to increase total factor productivity would seem to relate to how information technology can be utilised more broadly in all business activities.\(^3\)

Hence, faster growth in total factor productivity will require innovations that bring extensive changes to the way people work and in the production of goods and services. It is clear that adopting such changes will take time and there is therefore a significant risk that total factor productivity growth will remain slow for a prolonged period.

\(^3\) Holmström, B., Korkman, S. and Pohjola, M., Suomen taloustrikin luonne ja kausun edellytykset [The nature of Finland’s economic crisis and the requirements for growth], Valtioneuvoston kanslian muistio 21.2.2014 [Prime Minister’s Office memo].
describe the dynamics of the labour market. During the recession, there have also been large flows from employment or unemployment to outside the labour market and vice versa. There have also been substantial flows of employees between sectors, due to the ongoing restructuring of the economy.\(^3\)

### Public finances

The Finnish Government has sought to gradually tighten fiscal policy in recent years. However, the structural deficit\(^4\) in public finances has improved only marginally (Chart 15). The acceleration in pension expenditure growth in recent years has increased public expenditure irrespective of the business cycle. Measured by the change in the structural primary balance, fiscal policy will tighten in 2015, in particular, and consolidation measures will curb economic growth to some extent in the forecast period (see Box 6). In 2014, the structural deficit will deepen to below the medium-term budgetary objective (MTO) of ½%. In 2015, the MTO will be achieved as a result of consolidation measures, but a repeat in 2016 is uncertain.

The balance of Finland’s public finances deteriorated in 2013. The aggregate general government deficit was 2.4% of GDP (Table 4). Backed by

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\(^2\) Labour market flows during the recession are treated in more detail in the article Schauman – Vanhala – Virén (2014) ‘Large worker flows in the Finnish economy’, towards the end of this publication.

\(^4\) Calculated using the cyclical adjustment method of the European Commission.
Table 4.

General government financial balance and debt, % of GDP

<table>
<thead>
<tr>
<th>% of GDP</th>
<th>2012</th>
<th>2013</th>
<th>2014f</th>
<th>2015f</th>
<th>2016f</th>
</tr>
</thead>
<tbody>
<tr>
<td>General government net lending</td>
<td>-2.2</td>
<td>-2.4</td>
<td>-2.6</td>
<td>-1.6</td>
<td>-1.4</td>
</tr>
<tr>
<td>Central government</td>
<td>-3.8</td>
<td>-3.7</td>
<td>-3.5</td>
<td>-2.6</td>
<td>-2.5</td>
</tr>
<tr>
<td>Local government</td>
<td>-1.1</td>
<td>-0.8</td>
<td>-0.9</td>
<td>-0.9</td>
<td>-0.8</td>
</tr>
<tr>
<td>Social security funds</td>
<td>2.7</td>
<td>2.1</td>
<td>1.8</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>General government debt (EDP)</td>
<td>53.6</td>
<td>57.0</td>
<td>60.3</td>
<td>61.6</td>
<td>62.9</td>
</tr>
<tr>
<td>Central government</td>
<td>43.6</td>
<td>46.4</td>
<td>49.0</td>
<td>49.8</td>
<td>50.8</td>
</tr>
<tr>
<td>Total tax ratio</td>
<td>44.0</td>
<td>45.5</td>
<td>45.6</td>
<td>45.7</td>
<td>45.6</td>
</tr>
<tr>
<td>GDP, % change</td>
<td>-1.0</td>
<td>-1.4</td>
<td>0.0</td>
<td>1.4</td>
<td>1.5</td>
</tr>
</tbody>
</table>

f = forecast

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

measures implemented to tighten taxation, revenues of both central and local government increased faster than expenditure, leading to a slight contraction in the combined central and local government deficit (Chart 16). The surplus on the social security funds was notably smaller than in previous years, due to the increase in pension expenditure. In addition, growth in the tax base was constrained by the decline in total output. The ratio of public expenditure to GDP rose by 1.8 percentage points, to 58.5%, which is a very high figure by international standards. Consolidated general government debt\(^5\) grew to 57% of GDP.

The general government fiscal position will remain weak in 2014. Subdued economic and employment growth will restrain growth in the income tax base, while cuts in corporation tax will lower corporate tax receipts. Weak private consumption, in turn, will weigh on VAT revenue. The increase in the municipal tax rate will underpin growth in local government tax revenue, but growth in central government transfers to local government will come to a halt.

Growth in central and local government net lending is expected to strengthen in 2016.

\(^5\) EDP debt, ie the debt concept used in the Excessive Deficit Procedure.
The surplus on the social security funds will contract to 1.9% of GDP. The fiscal position of the social security funds will be supported by both continued increases in social security contributions in 2015–2016 and restrictions on index increments to pensions in 2015, which will temporarily curtail pension expenditure growth. The aggregate general government deficit will decline to 1.4% of GDP in 2016.

General government debt increased to 57% of GDP in 2013. Due to the contraction in central and local government deficits, growth in debt relative to GDP will moderate, but the planned debt-reducing measures of EUR 1.3 billion will not be sufficient to reverse the increase in the debt ratio in the forecast period. General government debt will increase to 63% of GDP by 2016. Hence, there is a risk that the debt ratio will exceed the threshold determined in the EU Stability and Growth Pact, even when considering financial support for EU countries.
In the spending limits discussions of March 2014, the Government agreed on several measures mainly designed for adjusting central government finances. The adjustment measures for the budget planning period extending up to 2018 total EUR 2.3 billion, which is about 1.4% of 2014 GDP. In addition, about EUR 600 million will be used in 2014–2015 on measures to support growth and employment.

The cuts in expenditures are broadly based, directed at public consumption and social transfers. The cuts in social transfers primarily focus on index increments to pensions and child allowances. In addition, indirect taxation will tighten due to increases in excise duties. Income taxation will also tighten, since adjustments to tax scales to compensate for higher earnings will not be implemented.

The impact of the spending limits decision on Finland’s economic developments is assessed using the Bank of Finland’s general equilibrium model. As is generally the case in this kind of model simulation, fiscal consolidation dampens economic growth in the short term. The size, timing and targeting of measures – tax increases relative to expenditure savings – have an effect on how strongly the consolidation impacts on economic growth.

The contraction in public consumption expenditure has a direct impact on output volumes. In addition, tightening taxation reduces household purchasing power, increases costs and drives up inflation, reflected later as eg weaker export and investment dynamics.

According to the model calculation, the savings measures dampen GDP growth in 2015–2018 by 0.4 of a percentage point on average per annum (Table). The increases in indirect taxes push up domestic prices by an average of 0.4 of a percentage point per annum relative to the baseline forecast. Price increases and cuts in social transfers constrain household purchasing power and decrease disposable income, leading to weaker private consumption. Public expenditure cuts also have an upward impact on private consumption growth, since savings in public services are partly compensated by private services.

| Table. |
|---|---|---|---|---|
| Impact of spending limits decisions on the economy |

**Difference relative to the baseline scenario, % points**

<table>
<thead>
<tr>
<th></th>
<th>2015f</th>
<th>2016f</th>
<th>2017f</th>
<th>2018f</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>–0.2</td>
<td>–0.5</td>
<td>–0.6</td>
<td>–0.5</td>
</tr>
<tr>
<td>Imports</td>
<td>0.0</td>
<td>–0.1</td>
<td>–0.2</td>
<td>–0.2</td>
</tr>
<tr>
<td>Exports</td>
<td>–0.1</td>
<td>–0.3</td>
<td>–0.4</td>
<td>–0.2</td>
</tr>
<tr>
<td>Private consumption</td>
<td>0.0</td>
<td>–0.2</td>
<td>–0.3</td>
<td>–0.3</td>
</tr>
<tr>
<td>Private investment</td>
<td>0.0</td>
<td>–0.5</td>
<td>–1.0</td>
<td>–0.8</td>
</tr>
<tr>
<td>Deflator of the private consumption</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>General government net lending</td>
<td>0.9</td>
<td>1.1</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>General government debt (EDP)</td>
<td>–1.5</td>
<td>–2.2</td>
<td>–3.1</td>
<td>–4.0</td>
</tr>
</tbody>
</table>

f = forecast
In the model, faster rises in prices and lower disposable income increase employees’ wage demands. However, wages are not allowed to react until 2016, because of the current wage settlement. Once average wages start rising, so do the price of domestic output. In the medium term, rises in prices and average wages weaken competitiveness, which is in turn reflected in decreased exports. Total imports also decline, due to falling imports used in the production of exports, further slowing down consumption.

The moderation of export growth and the rise in average wages dampen growth in private investment from 2016 onwards. Investment is relatively sensitive to labour cost increases, weakening competitiveness and slowing export growth. On the other hand, historical data shows that investment has generally fluctuated strongly.

Weaker competitiveness, together with higher labour costs, restrain labour demand by companies, and employment weakens relative to the baseline scenario. Consequently, unemployment increases and is 0.5 of a percentage point higher than in the baseline forecast.

At the same time, the measures agreed at the government discussions on spending limits have a clear stabilising impact on the economy. The general government debt ratio will be 4 percentage points lower in 2018 than according to the baseline scenario. The general government fiscal balance will strengthen in 2015, in particular, and will be 1.5 percentage points stronger relative to GDP in 2018. It should be noted that the negative effects of adjustment may be overestimated, since the model does not take into account the effects associated with the fading of uncertainty related to economic policy. Decreasing uncertainty may have considerable implications for domestic financial conditions, too.
Uncertainties surrounding the forecast for public finances relate to implementation of the consolidation measures envisaged for 2015–2016. Based on the forecast, it is uncertain whether Finland’s public finances will comply with the deficit and debt targets determined in the context of EU fiscal coordination and in the national legislation required for ratification of the EU Fiscal Compact. Therefore, no compromise should be made on the scale of the agreed consolidation, particularly in view of the upward pressures on expenditure stemming from population ageing in the years ahead. The public finances are not well-equipped to withstand weaker-than-forecast economic developments. On the other hand, fiscal developments could turn out to be more positive than forecast, if local government were to implement structural measures faster than envisaged in the Government’s structural policy programme.

External balance

The external balance of the Finnish economy was considerably weakened during the financial crisis. In 2008–2012, the current account lost nearly EUR 10 billion, and in 2013 posted a deficit of EUR 2 billion. In the early months of 2014, the current account deficit has remained unchanged. The balance of trade is more or less in balance (Chart 17).

The weakening of Finland’s current account has been exceptionally strong compared with key EU countries. The deeper and more prolonged collapse in exports compared with other countries was due to problems in the ICT sector, the global deterioration in the markets of the forest industries and the weakening competitiveness of exports. The melting of the current account surplus also reflected a decrease in domestic savings. Households maintained their consumption levels by reducing savings, and the general government financial balance weakened due to automatic stabilisers and an accommodative fiscal policy. The slow rise in import prices also contributed to the declining trend in the terms of trade.

In 2014, the goods and services account will strengthen as a response to the increase in exports. In 2014–2015, goods and services exports will exceed the value of imports by some EUR 1 billion per annum. The combined deficit on the income account and the current transfers account will remain at EUR 2 billion and, as a result, the current
account as a whole will remain slightly in deficit.

Viewed sector by sector, the external balance will be supported by relatively strong corporate performance during the forecast period (Chart 18). The savings ratio of the economy as a whole will also be bolstered by the shrinking of the general government deficit. On the other hand, the level of household savings will remain cyclically low because, due to the exceptionally slow growth in wage and salary earnings, households will finance their consumption partly by tapping into their savings and taking on more debt. The recovery in corporate investment, too, will have a cyclical impact on the current account. Particularly in 2015–2016, an increasing share of savings in the economy will be used to spur productive investments.

The cyclical nature of the factors underlying the current account is comforting as regards the future of Finland’s external balance. The period of rapid investment growth during the forecast period as well as the decline in the household savings ratio will weaken the external balance only temporarily. After the forecast period, the current account is expected to return to surplus. Business investment supports exports and, as a result, the GDP share of exports will return to pre-recession levels. On the other hand, the current slight current account deficit makes the Finnish economy vulnerable to negative market reactions.

Chart 18.

Savings and investment ratios

Gross savings and investment as a proportion of GDP, %
Savings - investment = financial balance

Total economy

Non-financial corporations and financial institutions

Households

Public sector

Sources: Statistics Finland and Bank of Finland.
Wage and price trends

Slow rise in wages

The weaker employment situation and the fading of the economy will slow the rise in costs and prices in the early part of the forecast period. Growth in wage and salary earnings will ease to just 1% per annum in 2014. In 2016, as the economy picks up, earnings growth will accelerate to 2%. The increase in negotiated wages in 2014–2015 is based on the agreement on employment and growth concluded by the social partners in 2013. Negotiated wages will rise in 2014 at an average rate of 0.7%, and in 2015 by 0.5% on average. As a result of the slow pace of rise in negotiated wages, real earnings will remain more or less unchanged in the first two years of the forecast period.

The weakening of labour demand in 2014 will reduce overtime and bonuses, which will be reflected in the trend in average wages; i.e. these will rise at a slower pace than earnings. Output growth will return to an upward trend in 2015. This, and improvements in employment, will not significantly tighten the labour market, as the pace of rise in average wages will pick up only slightly. Compensation per employee will grow an average 1.2% per annum in 2014–2015 (Chart 19). The pick-up in activity in 2016 will be reflected in an increase in the number of hours worked. As a result, the pace of increase in average wages will accelerate to around 2%.

Growth in labour productivity will remain slow in 2014, at less than ½% per annum. In the last two years of the forecast period, annual growth in productivity will pick up to around 1%. Due to the moderate increase in wages and salaries, the rise in unit labour costs will average ½% per annum in 2014–2015, and in the last year of the forecast period labour costs will increase by nearly 1%.

Inflation will remain subdued

Inflation as measured by the harmonised index of consumer prices (HICP inflation) slowed in 2013, and inflation will slow further in 2014. In 2014, the rate of inflation will be 1.2% (Chart 20).

Rises in indirect taxes have had an exceptionally large impact on consumer inflation since 2011. In 2014, the inflationary impact of the rises in indirect taxes will be some 0.5 of a percentage point. In 2015, the
inflationary impact will average 0.2 of a percentage point, which will push up consumer price inflation to 1.4%. In 2016, the rate of inflation will accelerate only slightly, to 1.5%.

The world market price for oil has declined rapidly in 2014. At the same time, oil prices have been affected by the appreciation of the euro. The mild winter also dampened demand for energy and contributed to the downward trend in the price of energy used by households. According to market expectations, the downward trend in crude oil prices will continue. The trend in energy prices will therefore slow the pace of inflation throughout the forecast period.

In early 2014, service prices have risen at a faster pace than other prices. Over 2014 as a whole, service prices will rise by 2.6%. This is due to the growth in labour costs and a protracted rise in rents and maintenance fees. Moreover, the decline in telecommunications prices, which slowed the trend in service prices for quite some time, has been reversed.

The pace of rise in food prices has decelerated substantially in 2014 as the prices of unprocessed food started to trend down. The upward trend in the prices of processed food has also slowed, but the general trend has been sustained not only by the rise in labour costs, but also by changes in the duties on alcohol, tobacco and non-alcoholic beverages. The rise in food prices has been dampened particularly by the lower prices of vegetables, fruit and meat. In 2014, the prices of unprocessed food will decline by approximately 0.2% and the prices of processed food will rise by some 1.6%.

The prices of industrial goods (excl. energy) have been rising at a slow pace for quite some time already. The prices of consumer durables have posted a downward trend since mid-2013, and the car prices began to decline at the beginning of 2014. The pace of increase in the prices of consumer non-durables has also slowed. In the forecast period, the upward trend in the prices of industrial goods will be dampened by the slow pace of increase in import prices. As a result, the prices of industrial goods will rise in 2014 by approximately 0.2%.

Inflation as measured by the national consumer price index (CPI inflation) slowed to 1.5% in 2013, a result of the decline in interest rates on housing loans and consumer credit. In the forecast period, the impact of the decrease in interest rates will unwind and the difference in the two inflation indicators will narrow. The rise in vehicle tax in 2016 will push up only
The rise in average wages and weak productivity developments have pushed up inflation

Consumer price inflation in Finland has been higher than in the euro area on average. This has been partly explained by problems in product markets and tight taxation.¹ Public discussion has therefore come to the conclusion that the high level of prices and relatively rapid pace of inflation in Finland are due to lack of competition in the product and labour markets, as well as tight taxation.

This box examines price developments in Finland, and instead of consumer prices, the examination is based on the GDP deflator. A breakdown of the price changes in Finnish output from the perspective of income enables us to examine how changes in labour costs, corporate sector operating profit, taxation and consumption of capital have affected inflation.

The GDP deflator is based on the national accounts and is a measure not only of consumer prices, but also of changes in the prices of all the products and services produced in Finland. The value of gross domestic product, i.e. the product of volume and price, can be defined as the sum of employee compensation, net taxes,² operating surplus – incl. mixed income – and consumption of fixed capital:

\[ \text{P-GDP} = \text{employee compensation} + \text{operating surplus} + \text{net taxes} + \text{consumption of fixed capital} \]

Employee compensation includes wages, salaries and bonuses paid to employees as well as employers’ non-wage labour costs. Operating surplus refers to companies’ pre-tax profits. If the income items are divided by real GDP, the GDP deflator can be expressed as the sum of income per unit of output. Of income per unit of output, employee compensation per unit of output, i.e. unit labour costs, can be broken down into changes in labour productivity and changes in payroll costs.

Developments in the GDP deflator have, with the exception of a couple of years, followed the trend in the consumer price index (Chart). In 1980–1991, the GDP deflator and consumer prices rose rapidly. In that period, cost developments were driven mainly by employee compensation. Unit labour costs were pushed up by the rapid pace of increase in average wages. In the 1980s, labour productivity improved by an average 2.6% per annum. At the same time, prices were also

¹ Differences in Finnish and euro area inflation are discussed in Box 6 ‘Finnish inflation above euro area average’, Bank of Finland Bulletin 3/2013.
² Here, ‘net taxes’ refers to excise and import duties with subsidies deducted.

Chart.

Decomposing changes in price level to unit costs

Sources: Statistics Finland and calculations by the Bank of Finland.
pushed up by an increase in operating surplus and higher net taxes.

In the 1990s, average wages increased at a slower pace than in the previous decade, but labour productivity growth remained unchanged. During that period, unit labour costs made a negative contribution to inflation, i.e. they slowed inflation. During the post-recession recovery period, the pick-up in inflation was mainly due to growth in the operating surplus of the corporate sector.

In 2000–2007, average wages increased rapidly, but the simultaneous rapid improvement in productivity dampened the inflationary impact of growth in unit labour costs. Productivity growth was, however, slower than in the 1980s and 1990s. In 2006 and 2007, rising prices were mainly due to the rapid pace of growth in net operating surplus. In 2008 and 2009, there was a steep decline in labour productivity and a contraction in operating surpluses. The decline in productivity was accompanied by the large pay rises in 2008. In 2009, the inflationary impact of unit labour costs was considerable, due to a simultaneous rapid decline in labour productivity. Labour productivity declined by 6.5% and average wages rose by 1.6%.

In 2010, output growth gathered pace again, and rapid growth in labour productivity pushed down unit labour costs. Exceptionally, the rise in prices was also constrained by lower consumption of capital per unit of output. In 2011–2013, average wages rose an average 3% per annum as labour productivity remained unchanged on average. Rising prices have also been driven by taxation. In contrast, growth in corporate operating surpluses has in recent years been slower than GDP growth, which has served to dampen inflation.

This examination shows that the price increases in Finland since the introduction of the euro have been mainly due to a rapid growth in unit labour costs. The higher unit labour costs are mainly due to a slower pace of growth in labour productivity and a rapid rise in average wages. Employers’ indirect labour costs have also risen notably, contributing to the higher unit labour costs. Growth in operating surpluses has pushed up prices only in the few years of strong growth in said surpluses. In these years, the rise in prices has been mainly due to growth in operating surpluses.
consumer price inflation, and the difference in the indicators will increase to approximately 0.2 of a percentage point in the second half of 2015. Developments in CPI inflation deviate slightly from that of inflation as measured by the harmonised index of consumer prices (HICP inflation) because the former covers a larger array of goods. Interest rates, owner-occupancy, lotteries and other gambling, and quasi-fiscal charges are not included in the calculation of the HICP.

Inflation may be lower than expected if the subdued growth in real earnings has a larger than expected downward impact on private consumption. In addition, as a result of global developments in prices, the pace of increase in import prices may be slower than expected.

Inflation may be higher than expected if the prices of oil and other commodities trend upward, contrary to current forecast assumptions. Faster-than-expected world growth and depreciation of the euro may push up the prices of imported goods and energy.

Risk assessment

Risks relating to the international economy

In the forecast, the recovery of Finnish GDP in the immediate years ahead is based on a gradual improvement in world growth. Developments in the international economy are, however, shadowed by major risks. Economic forecasts are subject to a significant degree of uncertainty, due to the ongoing crisis in Ukraine. Thus far, the impact of the crisis on the euro area has been minor on average. The impact does, however, differ considerably between countries, based on the importance of a country’s trade relations with Russia and energy dependence. In any case, the crisis has increased political instability, and thereby economic instability, in Europe.

The euro area is still subject to risks caused by the financial crisis, even though the most acute phase of the crisis has been passed. Economic growth in the euro area will pick up, but will remain below pre-crisis levels. Sluggish growth, substantial debt levels and weak banking-sector profitability all increase the vulnerability of the financial system. Another source of disturbances to the economy is fiscal policy. Structural reform has made slow progress, and the adjustments required in the euro area public sector may therefore be larger than forecast. This increases the risk of a larger-than-expected tightening of fiscal policy during the forecast horizon.

Uncertainty in the euro area is also created by the risk of a prolonged period of low inflation and slow growth. In the worst case, sluggish economic growth may lead to a deflationary spiral if household expectations concerning economic growth and inflation start to weaken.

In the emerging economies, the largest risks relate to the resilience of China’s financial sector. On the other hand, the recovery of the emerging economies may also be underestimated.
Economic forecasts typically underestimate the strength of economic growth in the early stages of a cyclical upturn. In the euro area, this risk is reduced by the fact that the recession is a result of a financial crisis, and these crises usually have a long-term impact on economic growth.

**Domestic risks**

The Ukraine crisis exposes the recovery of the Finnish economy to a number of potential disturbances. If the crisis were to escalate, the volume of Russian imports could be smaller than forecast. This would directly reduce Finnish exports, but it would also affect Finnish exports indirectly by reducing demand in Europe. In addition, Finland’s trade-weighted exchange rate would develop unfavourably in terms of exports. (On the impact of developments in Ukraine, see Box 2.)

Other domestic uncertainties relate to structural change in the economy and near-term economic policy choices. In the forecast, the recovery of the economy is based on output growth in export sectors and a gradual recovery in investment. Finnish export development depends crucially on the developments in international markets and the competitiveness of the industrial sector. Due to structural changes in the Finnish industrial sector, productivity growth may be slower than forecast, which would push up unit labour costs. During the recession, labour productivity growth has been significantly slower than the long-term average. The slow pace of productivity growth has been partly due to cyclical factors, but in 2011–2013 was also due in part to the negative impact of total factor productivity. Weak developments in total factor productivity may also signal slower economic growth in the long term.

The strengthening of public finances as forecast is conditional on adherence to the measures to boost the public finances agreed at the government discussion on spending limits. These fiscal measures may, however, turn out to be too small. When the decisions on further fiscal consolidation were taken, the outlook for the economy was more positive than in the present forecast. Finland will not meet the EU criterion for the medium-term structural balance of general government in 2014, and even thereafter the criterion for the structural deficit will be met only with a very small margin. Further fiscal consolidation measures may therefore be necessary in the forecast period.

The key risk to economic developments is that the budgetary situation may erode confidence in Finland’s economic policy stance. Maintaining market confidence in Finland will be difficult, particularly if the general government consolidation measures presented in spring 2014 were to be implemented later than expected for political reasons. If this confidence were to falter, it would increase the costs of the public debt and lead to an overall tightening of monetary conditions in Finland. This would also increase the banking sector’s funding costs, reduce bank lending and could have a negative impact on asset prices. These impacts have been assessed separately in the alternative scenario (see Box 8).
The European financial markets have stabilised further and the availability of funding has improved. This has eased the servicing of sovereign debt and banks’ access to external funds. In Finland, non-financial corporations and households’ ability to service their debt has remained good on average. The availability of corporate finance is still reasonable in Finland relative to the difficult phase in the business cycle.

Banks’ risk-bearing capacity has also remained good overall, and performance stable. A prolonged period of sluggish economic growth, scarce room for manoeuvre in fiscal policy and the current account deficit increase the risk that market confidence in Finland will falter. If confidence were lost, this would increase the costs of public sector debt. This would lead to an overall tightening of monetary conditions in the country, increasing the banking sector’s funding costs, reducing the supply of loans and impacting negatively on asset prices. A decrease in loan supply, growth in interest rate margins and a decline in asset prices in an already prolonged downturn would further decrease companies’ ability to invest and have a depressing effect on private consumption via a number of channels.

The alternative scenario is aimed at assessing the impact of such developments on the Finnish economy. The analysis is conducted by using an estimated structural VAR model of a small open economy, which consists of standard macroeconomic variables: real output, inflation and an interest rate measure, and as financial variables, asset prices and new bank loans to the private sector. The model allows the identification of, for example, asset price and loan supply shocks.

1 See the article by Gulan, Haavio and Kilponen ‘From the Finnish ‘Great Depression’ to the ‘Great Recession’, below.

2 The model also includes an external bloc. The external shocks are assumed to be fully independent of the domestic variables.

In the model, the loan supply shock stems from the sector of financial intermediaries. It may reflect changes in effective lending standards. An asset price shock is interpreted to reflect asset price movements due to market exuberance or pessimism. A negative asset price shock will generate responses largely similar to demand shocks, slowing both domestic demand and production through negative wealth effects. At the same time, as private sector balance sheets weaken, interest rate margins widen. Wider margins decrease the amount of new loans. In the case of a standard negative aggregate demand shock, the loan margins shrink because of lower demand for loans.

Technically, the interest margin – ie the difference between the loan and deposit rates – is the component of the interest rate that banks must mark up over their funding costs in order to cover loan supply shocks. In the model, this is modelled as a shock to the loan margin, which can be identified separately from other shocks in the model.

### Table: Alternative scenario: decrease in loan supply

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>–0.2</td>
<td>–0.8</td>
<td>–0.8</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.1</td>
<td>–0.1</td>
<td>–0.4</td>
</tr>
<tr>
<td>New bank loans</td>
<td>–4.2</td>
<td>–5.0</td>
<td>–2.8</td>
</tr>
<tr>
<td>Housing prices</td>
<td>–1.0</td>
<td>–3.6</td>
<td>–3.5</td>
</tr>
<tr>
<td>Stock prices</td>
<td>–2.9</td>
<td>–11.0</td>
<td>–10.8</td>
</tr>
<tr>
<td>Interest margins*</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Change relative to baseline growth, % points
* Change in the interest margin, % points
Source: Bank of Finland.
between the interest rate on new loans by Finnish MFIs and the 3-month Euribor – is increased by 0.2 of a percentage point starting from the second quarter 2014 as the tightening financial conditions in Finland raises the interest rate on new bank loans. The widening of the interest margin is divided into a loan supply shock and an asset price shock.

As a result of the shock, loan supply decreases significantly and the interest rate margin widens, reducing the amount of loans. A decline in asset prices weakens corporate sector balance sheets and further decreases the availability of loans to the corporate sector. Lower asset prices also have a direct weakening effect on domestic activity in excess of the effect of a negative loan supply shock. While the wealth effect of lower asset prices on private consumption is relatively small, a larger effect on GDP is brought about by a decline in stock prices through weaker corporate balance sheets and hence investment. In the scenario, the decline in stock prices is considerably larger than that in housing prices.

Overall, the tightening of financial conditions would lead to a severe weakening of economic activity. In the alternative scenario, GDP growth slows significantly during the forecast period, compared with the baseline. At the same time, the already subdued rate of inflation would slow even further.
The forecast's overall view of the recovery in the Finnish economy has changed slightly since the forecast published in December 2013. The weaker-than-forecast economic growth in 2013 is reflected in a downward revision of the growth forecast for 2014. On the other hand, the dynamics of the economy during the forecast period have remained essentially unchanged. The economy is actually forecast to recover slightly earlier than estimated in December, reflecting in particular developments in the euro area.

GDP is estimated to grow 0.6 of a percentage point slower in 2014 than expected in the previous forecast, while the growth forecast for 2015 has been revised downward by 0.4 of a percentage point.

The downward revision of the growth forecast for 2014 is due largely to a forecast error for the end of 2013. In the previous forecast, GDP growth in 2013 was estimated at –1.0%, when the currently available statistics put the figure at –1.4%. The contraction was greatest towards the end of 2013, which weakens the growth forecast for 2014 by as much as 0.5 of a percentage point relative to the previous forecast.

With regard to the economic operating environment, changes in Finland’s export markets will speed the economic recovery. Although demand in the export markets is currently ½ a percentage point weaker than envisaged in the previous forecast, its structural and geographical composition is more favourable than before for Finnish exports. Although the growth forecast for exports in 2014 is weaker than in the previous forecast, the recovery in exports will be quicker and occur sooner. Moreover the Finnish export sector will not lose as much market share in different areas as estimated in the previous forecast.

Pulled by exports, investment will pick up towards the end of the forecast period. However, in the current year investment is forecast to be over 5 percentage points less than expected in the previous forecast. Investment in housing construction contracted towards the end of 2013 more substantially than estimated in the previous forecast. Growth in housing construction investment will

<table>
<thead>
<tr>
<th>Table. Current and December 2013 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
</tr>
<tr>
<td>GDP, % change</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>Inflation (HICP), %</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>Finland’s export markets, % change</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>Current account, % of GDP</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>General government net lending, % of GDP</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>General government debt, % of GDP</td>
</tr>
<tr>
<td>December 2013</td>
</tr>
<tr>
<td>59.0</td>
</tr>
</tbody>
</table>
continue to be slower than previously envisaged, whereas fixed investment will be brisker. Investment growth will accelerate more than thought in the previous forecast, as forest industry investment is expected to increase significantly towards the end of the forecast period.

Private consumption will grow in 2014–2015 almost ½ a percentage point less than in the previous forecast. The lowering of the consumption forecast is based on weaker employment and lower wages than estimated as recently as last December.

The ratio of the current account deficit to GDP will contract more slowly than in the previous forecast. In 2013, the deficit was ½ a percentage point larger, and the difference is reflected throughout the forecast period. Non-financial corporations continue to show a funding surplus, whereas households and the public sector continue to accumulate debt. Net public sector borrowing and debt will be smaller in 2015 than estimated in the previous forecast, as fiscal policy will tighten in accordance with decisions taken.
Large worker flows in the Finnish economy

28 May 2014

Viewed in the light of Finland’s employment and unemployment figures, the labour market impact of the weak economic performance of recent years would appear so far to be less than feared. These aggregate-level figures do not, however, reveal anything about changes between sectors or worker flows. The present article explores the labour market’s internal dynamics and worker flows. Our aim is to take an overview of the dynamics of the Finnish labour market that lie behind the typically reported aggregate figures. We also use worker flows to explain observed changes in unemployment. In addition to this, the article presents the results achieved when probit analysis is used to study labour market flows.

The analysis of worker flows reveals that a significant proportion of labour market movement by individuals is due to people leaving and joining the labour market – thus not simply moving between employment and unemployment. We can also observe that the labour market behaviour of different age groups is very different.

A more detailed sectoral examination of the changes in employment demonstrates that the economy is undergoing a period of structural change. Analysis reveals that the changes in employment have been spread very unevenly between different sectors during the years 2008–2013. At the same time as there has been a net loss of jobs, particularly in the IT sector and the forest industries, new jobs have also been generated, especially in service sectors. These include both low and high productivity services.

The analysis presented here is based primarily on micro-level quarterly data from Statistics Finland’s Labour Force Survey for the years 2001–2013 (covering 15–74-year-olds). This, in turn, is based on monthly data from questionnaires. The material comprises one and a half million observations and contains data on e.g. respondents’ age, gender, educational background, sector of employment, labour force participation, labour market state, professional status, duration of unemployment and duration of current job.

Aggregate employment figures changed only marginally in recent years

Employment in Finland responded surprisingly little to the dramatic contraction in GDP in the early phase of the international financial crisis, or indeed in the post-crisis recession. By the end of 2013, the number of employed had declined by around 84,000 from its peak in 2008, and the number of unemployed had grown by around 56,000 (Chart 1). Thus, there had been a net outflow of some 28,000 people from the labour market since 2008.

During the Finnish depression of the early 1990s, there was a net loss of around 475,000 jobs and an increase of 361,000 in the number of unemployed. At the same time, 114,000 people left the labour market, some of whom remained permanently outside the labour market (inactive). During the 1990s crisis, approximately 76% of the decline in employment was expressed in

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Large worker flows in the Finnish economy

Thus, in net terms, 34% of those employed people whose employment has come to an end have left the labour market altogether.

The changes in employment during the period 2008–2013 were distributed very unevenly between sectors of the economy. This illustrates the structural change currently ongoing in the Finnish economy, but also a long-term weakness of demand in the global economy. The sectors in which employment has declined most are largely export-driven and connected with manufacturing. The structural upheaval has been most marked in the number of jobs in the IT sector (Chart 2). In addition to this 'Nokia effect', there has also been a prolonged contraction in the forest and paper industries, reflected in a major decline in the numbers of people employed in these industries.

Chart 2.

Higher unemployment, and the remainder, around 24% as a fall in labour market participation. During the current crisis, around 66% of the reduction in employment is reflected as an increase in the numbers of unemployed. Thus, in net terms, 34% of those employed people whose employment has come to an end have left the labour market altogether.

The changes in employment during the period 2008–2013 were distributed very unevenly between sectors of the economy. This illustrates the structural change currently ongoing in the Finnish economy, but also a long-term weakness of demand in the global economy. The sectors in which employment has declined most are largely export-driven and connected with manufacturing. The structural upheaval has been most marked in the number of jobs in the IT sector (Chart 2). In addition to this 'Nokia effect', there has also been a prolonged contraction in the forest and paper industries, reflected in a major decline in the numbers of people employed in these industries.

Chart 2.

Change in number of employed in those sectors with the largest change in 2008–2013

Social work activities without accommodation
Sports activities and amusement and recreation activities
Human health activities
Education
Residential care activities
Financial service activities
Activities serving financial and insurance activities
Publishing activities
Management consultancy activities
Real estate activities
Architectural and engineering activities
Legal and accounting activities
Manufacture of electrical equipment
Computer programming, consultancy and related activities
Telecommunications
Manufacture of paper and paper products
Manufacture of electronic and optical products
Specialised construction activities
Nutritional activities
Manufacture of furniture
Crop and animal production, hunting and related service activities
Sale and repair of motor vehicles
Public administration and defence
Wholesale trade
Manufacture of sawn wood and of wood and cork products

Source: Statistics Finland.
At the same time as there has been a net loss of jobs in some sectors, particularly those affected by the structural change, new jobs have emerged in other sectors, and particularly in services. The past five years have seen the emergence of a large number of new jobs in social and health care services, as also in the education sector. The jobs generated in these sectors are primarily public sector jobs (in 2013, of the jobs in education, approximately 85% were in the public sector, and in health and social services, 72%).

In addition to these public sector jobs – traditionally characterised by low productivity – Finland has also seen the emergence of a relatively large number of private sector service jobs with higher productivity, despite the unfavourable cyclical situation and the ongoing restructuring in the economy. This is reflected in, for instance, growth in financial services, management consultancy services, architectural and engineering services, and legal and accounting services.

Thus, in the structure of employment we can observe some sort of creative destruction. As employment dwindles in some sectors, new jobs emerge elsewhere. New jobs in high-productivity sectors within the private sector are particularly interesting from both a structural and a cyclical perspective. In part, they demonstrate that the weak cyclical situation has not smothered the emergence of new jobs in these sectors: as some sectors contract, others are growing.

Plenty of multidirectional movement on the labour market

Employment relationships begin and end many times more than could be concluded on the basis of net changes in employment and unemployment. People move between employment and unemployment, but also leave and return to the labour market itself (Chart 3). In addition to these flows, large numbers of workers move directly from one job to another, movement that is invisible in these calculations. In both high and low phases of the economic cycle, thousands of people move between labour market states every quarter.

During the period 2001–2013, an average of 47,000 unemployed workers (a good 20% of the total unemployed) found work every quarter. At the same time, around 36,000 employed workers

Chart 3.
Large worker flows in the Finnish economy

(approximately 1.5% of the total employed) became unemployed. Also worthy of note are the large flows of people out of and into the labour force. An average of 94,000 employed workers (almost 4% of the total employed) left the labour market each quarter, but at the same time 86,000 inactive persons (approximately 6.6% of all those outside the labour force) found employment.

The labour market flows in Finland relative to the number of employed are around a third of the size of those in the United States,\(^1\) the labour market flows in Finland per quarter being equivalent to the monthly flows in the United States. Within the euro area, however, Finland’s labour market flows are relatively large, larger than, for example, in Austria, Ireland, Italy, France and the Netherlands.\(^2\)

The relative size of labour market flows in different directions in Finland is very similar to the United States. A rough rule of thumb would seem to be that the flow between employment and non-participation in the labour force, or inactivity (E-I-E) is around twice the size of both the flow between employment and unemployment (E-U-E) and that between unemployment and inactivity (U-I-U).

Large flows out of and into the labour force

Over the period 2006–2013, the flow into and out of employment was around 130,000 workers every quarter. At the beginning of the economic crisis, the flow out of employment grew, and that into employment contracted strongly. The flow into employment has since been restored almost to the same level as before the crisis, but the outward flow has remained stronger than before the crisis and grew further in the years 2012–2013 (Chart 4). In Chart 4, the flow out of employment embraces both the flow from employment to unemployment (EU) and that from employment to inactivity (EI). The flow into employment similarly embraces both the flow from unemployment to employment (UE) and the flow from inactivity to employment (IE).

The large flows from employment to inactivity and vice versa reflect primarily the labour-market behaviour

\(^{1}\) For example, Fujita (2007) has described the labour market flows in the United States.

\(^{2}\) ECB (2012).
of the young, at one end, and people in the oldest age groups of working age, at the other. A large part of the flow into employment from inactivity is among the young (16–24 age group) and presumably includes a large number moving from education into working life. In the case of the young, the flow from inactivity into employment is in general larger than the flow in the other direction (Chart 5, upper graph). In contrast, a large part of the flow from employment to inactivity is among older people (55–74 age group) and presumably includes numerous people retiring at the end of their working careers. The flow of older people from employment to inactivity is in general larger than the flow in the opposite direction (Chart 5, lower graph). The flows in the middle of the age distribution (25–54 age group) are closer to each other (Chart 5, middle graph), reflecting the fact that workers in this age group move more in both directions (for example between work and childcare). As a rather large number of people enter employment from inactivity, this suggests that a substantial proportion of those officially inactive in reality constitute a usable part of the labour force.

Probability of job loss important in the dynamics of unemployment

An increase in unemployment can be due to an increased flow from employment into unemployment, or to a reduction in the flow from unemployment into employment, or a combination of the two. In a simplified analysis that takes into account only
flows between employment and unemployment, the impact of the flows on changes in employment can be depicted as follows.

$$\Delta U_{t+1} = EU_t - UE_t$$ (1)

In the equation, the flow from employment into unemployment (EU) increases unemployment, while the flow from unemployment into employment (UE) reduces unemployment. These flows between employment and unemployment comprise two factors. The flow from unemployment into employment depends, on one hand, on the probability of unemployed people finding work, and, on the other hand, on the number of unemployed. Similarly, the flow from employment to unemployment depends, on one hand, on the probability of employed people losing their job, and, on the other hand, on the number of employed. Thus

$$\Delta U_{t+1} = s_t E_t - f_t U_t$$ (2)

In this equation, the loss of jobs is a function of the probability of losing one’s job ($s_t$) and the number of employed ($E_t$), while the generation of new jobs is a function of the probability of finding work ($f_t$) and unemployment ($U_t$).

Analysing the probability of finding and losing work separately from the gross flows is an interesting exercise, as both the transition probability from one labour market state to the other and the size of the pools of employed and unemployed workers influence the gross flows. When, for example, the gross flow from unemployment into employment grows, we can envisage a situation in which the probability of finding a job remains unchanged or declines and growth in the flow is due solely to an increase in the pool of unemployed workers (if the flow into unemployment has grown). In such a situation, the position of the individual is no better than before, despite the growth in the gross flow.

Below, the logic of our analysis is illustrated using only the flows between employment and unemployment, albeit the results are also presented from the perspective of the three labour market states.

In the simplified analysis, the probability of losing or finding employment can be expressed as follows:

$$s_t = \frac{EU_t}{E_t} \quad \text{and} \quad f_t = \frac{UE_t}{U_t}$$ (3)

Here, the probability of moving from one labour market state to another is expressed by the number of people moving divided by the number of people in the source group. Thus, for the years 2001–2013, this gives us an average probability of losing or finding employment of $s_t = 0.015$ and $f_t = 0.22$, i.e. on a quarterly basis 1.5% of employed people have lost their job and become unemployed, while 22% of the unemployed have found a job. When

3 See Annex.

4 See Annex.
the flow out of the labour force is also taken into account, we get an average probability of losing or finding employment of \( s_t = 0.03 \) and \( f_t = 0.24 \).

The large difference in probabilities is due to the large differences in the pools of employed, unemployed and inactive people. Although the differences of scale between the categories make it harder to compare the flows, we can nevertheless observe how the probability of losing one’s job grew and the probability of finding one declined during the early years of the crisis in 2008–2010 (Chart 6).

Rather than the probability of movement from one labour market state to another, it is more natural to analyse percentage changes in the variables. The impact on changes in the unemployment rate of the probability of losing or finding a job can be estimated with a method applied in the recent research literature. An equation is derived for the change in unemployment that depends on the rate of losing or finding a job and the equilibrium rate of unemployment. It takes the form

\[
\Delta \ln u_t \approx \alpha_t [\Delta \ln s_t - \Delta \ln f_t],
\]

where \( \alpha_t = 1 - \bar{u}_t \).

\hspace{1cm} (4)

According to this equation, the percentage change in the unemployment rate can estimated approximately using the percentage changes in the probability of losing or finding employment, as \( 1 - \bar{u}_t = 1 \).

If we analyse the percentage changes in the rates of movement – including movement from and to the labour market – in the years 2002–2013, we can see clearly how in the early phase of the crisis in 2008–2009 the probability of losing one’s job increased and the probability of finding a job declined (Chart 7).
The probability of losing employment would appear to have reacted more strongly and accounted for around 2/3 of the percentage change in employment, while the impact of the probability of finding employment is only around 1/3.

A similar decomposition between the flows explaining the unemployment rate can also be achieved by using Fujita and Ramey’s variance decomposition derived from the equation presented above. According to these researchers, the variance in the unemployment rate, i.e. its fluctuations, can be written in the form:

$$\text{Var}(\Delta \ln u_t) \approx \text{cov}(\alpha_t \Delta \ln s_t, \Delta \ln u_t) + \text{cov}(-\alpha_t \Delta \ln f_t, \Delta \ln u_t)$$

(5)

From this variance decomposition we can derive intuitive measures for two flows as determinants of the change in the unemployment rate:

$$\beta_s = \frac{\text{cov}(\alpha_t \Delta \ln s_t, \Delta \ln u_t)}{\text{Var}(\Delta \ln u_t)}, \text{ and}$$

$$\beta_f = \frac{\text{cov}(-\alpha_t \Delta \ln f_t, \Delta \ln u_t)}{\text{Var}(\Delta \ln u_t)}$$

(6)

These two variables sum approximately to one. Around 65% of the fluctuation in unemployment is explained by changes in the probability of losing work, while the remaining 35% is explained by changes in the probability of finding work (Table 1).

On the Finnish labour market, changes in both the probability of losing a job or of finding a job are important from the point of view of changes in the unemployment rate. However, the probability of job loss would appear to be the more significant of the two. In comparison with other countries, the relative significance of labour market flows is similar to the United Kingdom. In Spain, the flows in both directions have been fairly equal in their significance, whereas in France the rate for finding work has been more significant, as in the United States.

Unemployed women find work more easily than men

In this article, we have used panel data from Statistics Finland’s Labour Force Survey to estimate the probability of respondents to the survey moving from one labour market state to another. In the probit models employed, a binary variable indicating change in labour market state is explained, and the explanatory variables describe factors that include age structure, sector, gender and duration of unemployment. The aim is to discover whether the normal basic dependencies apply in the statistical data used here and whether

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7 Fujita and Ramey (2009).

8 Elsby et al. (2011); Smith (2011).

the results reveal clear changes during the period reviewed. In pursuit of this latter aim, in all the models the variable of time used is the calendar year, making the trend linear.

In this context (Table 2) only the coefficient values and the z-statistics depicting their precision (which can be related to t-test quantities) are analysed. The estimated coefficients are the changes that occur in marginal probabilities when moving from one comparison group formed by a categorical variable to another. Thus, for example, the variable ‘woman’ refers to the difference between the marginal probabilities of men and women. With the exception of the variable ‘year’, the explanatory variables are categorical and represent different subgroups of variables.

The study clarified firstly what factors influence changes in the flows from unemployment to employment (UE). There is a statistically significant difference between men and women in the probabilities of finding work, and specifically in moving from unemployment to employment (Table 2). Unemployed women would appear to find work more easily. The models lack sectoral variables, as it is difficult to define the sector of an unemployed person, but the final outcome suggests that the sectors showing increased employment are largely female-dominated. Age-variable coefficients allow us to conclude that older jobseekers have a lower probability of returning from unemployment to employment. The coefficient for the educational level variable, for its part, tells us that a more highly educated person has a higher probability of moving from unemployment to employment than someone with a lower level of education. As we would expect, variables describing duration of unemployment reveal that the longer a respondent to the survey has been unemployed, the smaller the (marginal) probability of their moving from unemployment back into the ranks of the employed. All these results are intuitive (i.e. as expected) and reinforce the article’s other outcomes as well as earlier research results.

If we analyse the flows from unemployment to inactivity (UI) (Table 2), we notice the gender variable is here, too, significant. Its coefficient suggests that women’s marginal probability of leaving the labour market is greater than men’s. The data does not tell us to what extent these movements are temporary or permanent. The age variable, too, has significance for labour market movements. The marginal probability of people in the age group 55–74 leaving the labour market is significantly larger relative to younger age groups. The duration of unemployment also has a clear statistical correlation with the probability of transition from one state to another. This applies particularly to those unemployed for over 24 months, whose marginal probability of leaving the labour market grows noticeably relative to the control group (unemployed under 6 months). The annual variable is in this case statistically significant, which would suggest that the marginal probability to move from unemployment to inactivity
Table 2.

Results of the probit model

<table>
<thead>
<tr>
<th>Variable</th>
<th>UE</th>
<th>UI</th>
<th>EU</th>
<th>EI</th>
<th>IE</th>
<th>IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman</td>
<td>0.025</td>
<td>0.028</td>
<td>−0.002</td>
<td>0.010</td>
<td>−0.003</td>
<td>−0.017</td>
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<tr>
<td></td>
<td>(4.25)</td>
<td>(5.29)</td>
<td>(4.4)</td>
<td>(13.94)</td>
<td>(1.47)</td>
<td>(10.14)</td>
</tr>
<tr>
<td>Age 25–34</td>
<td>−0.032</td>
<td>−0.078</td>
<td>−0.002</td>
<td>−0.027</td>
<td>−0.033</td>
<td>−0.004</td>
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<tr>
<td></td>
<td>(4.03)</td>
<td>(11.19)</td>
<td>(3.35)</td>
<td>(36.78)</td>
<td>(12.19)</td>
<td>(1.94)</td>
</tr>
<tr>
<td>Age 35–44</td>
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<td>−0.092</td>
<td>−0.002</td>
<td>−0.037</td>
<td>−0.058</td>
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<tr>
<td></td>
<td>(7.75)</td>
<td>(12.32)</td>
<td>(3.82)</td>
<td>(46.94)</td>
<td>(19.55)</td>
<td>(3.47)</td>
</tr>
<tr>
<td>Age 45–54</td>
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<td>−0.94</td>
<td>−0.002</td>
<td>−0.039</td>
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<tr>
<td></td>
<td>(11.44)</td>
<td>(12.88)</td>
<td>(2.59)</td>
<td>(49.72)</td>
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<td>(11.51)</td>
</tr>
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<td>Age 55–64</td>
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<td>−0.003</td>
<td>−0.016</td>
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<td>(18.41)</td>
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<td>Tertiary qualification</td>
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<td></td>
<td>(1.41)</td>
<td>(1.59)</td>
<td>(3.30)</td>
<td>(3.17)</td>
<td>(3.08)</td>
<td>(1.57)</td>
</tr>
<tr>
<td>U duration 6–11</td>
<td>−0.103</td>
<td>0.013</td>
<td>−0.011</td>
<td>0.078</td>
<td>0.030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(13.02)</td>
<td>(1.68)</td>
<td>(1.68)</td>
<td>(1.68)</td>
<td>(1.68)</td>
<td>(1.68)</td>
</tr>
<tr>
<td>U duration 12–23</td>
<td>−0.154</td>
<td>−0.002</td>
<td>0.080</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(16.59)</td>
<td>(0.19)</td>
<td>(19.83)</td>
<td>(8.18)</td>
<td>(8.18)</td>
<td>(8.18)</td>
</tr>
<tr>
<td>Industry</td>
<td>−0.003</td>
<td>−0.011</td>
<td>0.078</td>
<td>0.030</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(4.89)</td>
<td>(7.29)</td>
<td>(7.29)</td>
<td>(7.29)</td>
<td>(7.29)</td>
<td>(7.29)</td>
</tr>
<tr>
<td>Construction</td>
<td>0.007</td>
<td>−0.003</td>
<td>0.078</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.89)</td>
<td>(1.79)</td>
<td>(1.79)</td>
<td>(1.79)</td>
<td>(1.79)</td>
<td>(1.79)</td>
</tr>
<tr>
<td>Market sector services</td>
<td>−0.002</td>
<td>−0.014</td>
<td>0.078</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.63)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
</tr>
<tr>
<td>Other services</td>
<td>−0.006</td>
<td>−0.014</td>
<td>0.078</td>
<td>0.030</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(5.50)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
<td>(9.60)</td>
</tr>
<tr>
<td>Temporary employment</td>
<td>0.080</td>
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<td>0.030</td>
<td></td>
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<tr>
<td></td>
<td>(77.00)</td>
<td>(71.80)</td>
<td>(71.80)</td>
<td>(71.80)</td>
<td>(71.80)</td>
<td>(71.80)</td>
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<td>Self-employed</td>
<td>−0.007</td>
<td>−0.008</td>
<td>0.078</td>
<td>0.030</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10.13)</td>
<td>(6.68)</td>
<td>(6.68)</td>
<td>(6.68)</td>
<td>(6.68)</td>
<td>(6.68)</td>
</tr>
<tr>
<td>Year</td>
<td>−0.019</td>
<td>0.285</td>
<td>−0.013</td>
<td>−0.092</td>
<td>−0.003</td>
<td>−0.006</td>
</tr>
<tr>
<td></td>
<td>(0.24)</td>
<td>(4.04)</td>
<td>(2.40)</td>
<td>(10.57)</td>
<td>(0.12)</td>
<td>(0.29)</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.047</td>
<td>0.017</td>
<td>0.126</td>
<td>0.117</td>
<td>0.100</td>
<td>0.051</td>
</tr>
<tr>
<td>LR(10)</td>
<td>150.78</td>
<td>474.98</td>
<td>7,774.71</td>
<td>13,326.45</td>
<td>7,806.60</td>
<td>2,658.69</td>
</tr>
</tbody>
</table>

U duration refers to duration of unemployment (the control group has a duration of under 6 months). The sector of the control group is agriculture and forestry. The type of employment in the control group is regular, permanent employment.

UE = flow from unemployment to employment.
UI = flow from unemployment to inactivity (i.e., exit from the labour market).
EU = flow from employment to unemployment.
EI = flow from employment to inactivity.
IE = flow from inactivity to employment.
IU = flow from inactivity to unemployment.

Sources: Statistics Finland and calculations by the Bank of Finland.
(dependent on other explanatory variables) has grown.

If we examine the flows from employment to unemployment (EU) and from employment to inactivity (EI), we observe that women’s marginal probability of becoming unemployed is lower than men’s. On the other hand, women’s probability of moving from employment to inactivity is strikingly higher than men’s. This presumably reflects the fact that women leave the labour market e.g. to care for children, and perhaps also for their parents, more than men do. A higher level of education reduces the marginal probability of moving from employment to unemployment or labour market inactivity. In the construction sector there is a higher marginal probability of becoming unemployed than in other sectors. This presumably reflects the seasonal nature of the construction industry. People on fixed-term contracts have a higher probability than those in regular employment of becoming unemployed or inactive, whereas the probability among the self-employed is lower.

If we look at the flow from inactivity into employment (IE) and unemployment (IU), based on the estimation results, we can conclude that, relative to men, women have a lower marginal probability of moving from labour market inactivity to unemployment. This suggests that women’s labour market transitions occur more rarely via unemployment. With age, the marginal probability of rejoining the labour market is markedly reduced. A higher level of education means a higher marginal probability of moving from inactivity back to the labour market. In this case it is unknown whether this is to do with permanent state shifts (from education into working life) or the end of a temporary change (e.g. a move from parental leave back to working life).

Finnish labour market exhibits more movement than previously thought

Aggregate-level reactions on the labour market during the crisis – seemingly perhaps insignificant – actually conceal a much more dynamic labour market than previously thought. There have been large flows of people between sectors, and the flows between labour market states are also considerable. On the Finnish labour market, changes in the unemployment rate are explained more by changes in the probability of losing work than changes in the probability of finding work. The situation would appear to be similar to that in e.g. the United Kingdom but opposite to that in the United States.

The flows out of the labour market and back onto the labour market are fairly considerable. This tells us that those outside the labour market are an important factor for labour market dynamics; particularly prominent in this respect are the young and the middle-aged, whose transitions are not a one-way street out of the labour market.

Keywords: labour market flows, unemployment, sector, probit
When we take into account the flows out of the labour force and back in, we get $\Delta U_{t+1} = EU_t + IU_t - UE_t - UI_t$, where $IU_t$ is the flow from labour market inactivity to unemployment and $UI_t$ is the flow from unemployment to inactivity.

Presented in a general form, the transition degrees from state A to state B are in the form

$$\lambda_{AB} = \frac{AB}{A_i}$$

The equation describing the change in unemployment can then be written in the form

$$\Delta U_{t+1} = \lambda_t^{EU} E_t + \lambda_t^{NU} N_t - (\lambda_t^{UE} + \lambda_t^{UN}) U_t$$

We initially define the 'unemployment rate' that prevails when the probability of finding or losing a job is unchanged. This is achieved by posing $\Delta U_{t+1} = 0$ and solving the text's equation, whereby the 'equilibrium unemployment rate' is

$$U_t^* = \frac{U_t^*}{L_t} = \frac{s_t}{s_t + f_t}$$

The text's equation can also be written in the form

$$\Delta U_{t+1} = s_t F_t - f_t U_t$$

$$= s_t (L_t - U_t) - f_t U_t$$

$$= s_t L_t - (s_t + f_t) U_t$$

Because

$$\frac{U_t^*}{L_t} = \frac{s_t}{s_t + f_t}$$

can be written

$$(s_t + f_t) U_t^* = \frac{s_t L_t}{s_t + f_t}$$

and gives

$$\Delta U_{t+1} = -(s_t + f_t) (U_t^* - U_t^*)$$

This can be presented in a log difference form

$$\Delta \ln U_t^* = \alpha_t [\Delta \ln s_t - \Delta \ln f_t]$$

where $\alpha_t = 1 - \bar{u}$, from which we can naturally estimate the relative roles of the probabilities of losing or finding a job in the determination of equilibrium unemployment on an integrating scale.
Sources


From Finnish Great Depression to Great Recession

12 May 2014

The Finnish economy has experienced three major recessions over the last 25 years, all very different in nature. The turn of the century witnessed the bursting of the dot-com bubble in the ‘Nokia economy’. The country was also severely hit by the global financial crisis of 2007–2008 and the ‘Great Recession’ that followed. However, the most serious episode was the prolonged contraction of the early 1990s, known in Finland as the ‘Finnish Great Depression’.

The Finnish Great Depression began in early 1990, after several years of rapid economic expansion. The contraction lasted for almost four years. The cumulative drop in the country’s real GDP from its peak in 4Q/1989 to trough in 1Q/1993 was 12.6%, the stock market fell by 67%, while the unemployment rate increased from 3.4% to 17.9%. It was one of the biggest contractions experienced by an industrialised economy since the Second World War, and comparable to the deep and prolonged recessions of many European countries during and after the 2007–2008 global financial crisis.

In this article, we use an empirical structural vector autoregression approach to identify different factors that could explain the Finnish business cycle, and the 1990–1993 contraction in particular. We estimate the model of a small open economy, in which we identify both real and financial shocks, from both the demand and the supply side. Shocks are identified by using state-of-the-art sign restrictions methodology.¹

Our approach allows us to study the propagation mechanisms of the shocks and the role of macro-financial linkages. In comparison with earlier studies of the Finnish Great Depression, our approach allows us to quantify the relative importance of different factors.²

We find a considerable role for the collapse of Finnish–Soviet trade around 1991. However, this is not the whole story. Shocks that capture a collapsing banking sector and the asset price bust explain about half of the slowdown. Counterfactual simulations suggest that without shocks and transmission mechanisms stemming from the domestic financial sector to the real economy, the collapse of Finnish–Soviet trade would have had a considerably smaller impact on Finland’s GDP. Moreover, a major asset price boom fuelling domestic demand was the key driver of GDP in the run-up to the crisis.

The ‘Great Recession’ in Finland was very different from the ‘Great Depression’. The drop in GDP can be attributed solely to external shocks – an increase in stress on the global financial markets and a slump in global demand. A comparison of these two episodes lends strong

¹ See e.g. Rubio-Ramírez et al. (2010).

² The 1990s episode generated a number of alternative explanations to account for the depression. Financial liberalization that triggered vast capital inflows and fuelled stock and housing market bubbles has been pointed to as the initial culprit (Vihriälä, 1997) and led to a Fisherian debt-deflation spiral (Kiander and Vartia, 1996). However, the Finnish downturn was much more severe than that of Sweden after a somewhat similar credit boom. This led many to blame the depression on the breakdown of trade with the USSR in 1991 (Tarkka, 1994; Gorodnichenko et al., 2012). Other authors pointed to the defence of a fixed exchange rate that led to sky-high interest rates (Honkapohja and Koskela, 1999), similarly to Sweden.
support to the view that financial factors matter for the real economy. Financial crises of domestic origin, possibly including a banking crisis and preceded by inflated asset prices and high debt levels in the private sector, have a protracted effect on the real economy and are followed by slow recoveries.

The rest of the article is organized as follows. In section 2, we introduce the model and discuss the identification of structural shocks. In section 3, we explain in detail the data used in estimation. In section 4, we discuss the historical shock decompositions and have a close look at the Finnish Great Depression. We also conduct some counterfactual simulations to assess the importance of financial factors to business cycle dynamics. Concluding remarks are given in section 5.

The model and sign restrictions

Our empirical strategy involves estimating a structural VAR model of a small open economy. The eight variables that we choose can be divided into three main groups. The foreign bloc consists of two variables, i.e. a measure of global financial stress as well as external demand for Finnish exports. The second bloc consists of standard macro variables, i.e. real output, inflation and an interest rate measure. Finally, we include a group of three financial variables: asset prices, new bank loans to the private sector and bank loan losses.4

This set of variables allows us to identify four domestic shocks: aggregate demand and supply shocks, asset price shocks and loan supply shocks as well as two foreign ones: shocks to global financial stress and export demand shocks. The bi-variate foreign bloc is assumed to be fully independent of the domestic part, i.e. the Finnish economy does not affect foreign variables. Aggregate demand and supply shocks as well as asset price and loan supply shocks are identified by using a sign restrictions approach. Two of the shocks remain unidentified and can capture, for instance, monetary policy shocks.

Sign restrictions are set to the impulse response functions of the variables, summarized in Table 1. The sign of the response is required to hold on impact and for at least 5 periods after the shock. The signs highlighted in red circles denote the minimum set of restrictions necessary to make the structural shocks identifiable from each other. All black signs are motivated by economic theory but are not necessary to distinguish the shocks from each other. Question marks denote cases in which the shock impact on the variable is either not clear or in which economic

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4 We use quarterly data from 1Q/1986 until 4Q/2012. All series are stationary and, where appropriate, deflated by the GDP deflator. We use year-on-year (YoY) growth rates of the series, except for the interest rate measure, which is the difference between the bank lending rate and the short-term money market rate and loan losses and the global financial market stress indicator, which are measured in levels. The data on loan losses come from Pesola (2011) and from Vihriälä (1997), while the indicator of global stress is the level of the Composite Indicator of Systemic Stress (CISS), constructed by Hollo et al. (2012).
theory delivers opposing mechanisms that may offset each other. As an example, a positive loan supply shock stems from the sector of financial intermediaries. It may reflect changes in effective lending standards, which in turn may reflect changes in the regulatory environment. The key identifying assumption of this shock is that, as the availability of bank loans increases, lending rates go down, hence reducing the loan spread. However, ceteribus paribus, the amount of bad loans goes up.5

As another example, according to our interpretation, an asset price shock reflects asset price movements due to market exuberance or bubbles. A positive asset price shock will generate responses largely similar to demand shocks, stimulating both domestic demand and production through positive wealth effects. At the same time, as private sector balance sheets improve, loan spreads narrow. Narrower spreads should, in turn, increase the amount of new loans. Loan losses decrease mainly because of stronger balance sheets, but this drop can be reinforced by the Fisherian effect, in which higher price levels reduce the real burden of nominal loan contracts on debtors.

The impact on spreads allows us to distinguish the asset price shock from a standard aggregate demand shock. In the case of the latter, the loan spreads go up because of the directly higher demand for loans. The fact that positive asset price shocks decrease loan losses, in turn, allows us to distinguish an asset price shock from a loan supply shock.

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5 In order to capture the time lag between an increase in loan availability and the surge in banks’ loan losses, we impose restrictions in such a way that loan losses are allowed to increase for only one period after an impact.
The results – financial factors matter

In this section we discuss the results by performing a historical shock decomposition of Finland’s GDP growth rate. The historical decomposition tells how much each shock explains of fluctuations in the growth rate. We also simulate a counterfactual scenario by shutting down the effects of financial factors on the real economy in order to highlight the role of financial shocks in the Finnish business cycle.

Historical decomposition

The results from the historical decomposition are presented in Chart 1. First, the accumulation of dark and medium blue bars indicates a strong role for external shocks. This applies both to fluctuations in demand for Finnish goods and in the transmission to Finland of turbulence on the international financial markets. The importance of external factors emphasizes the small open economy character of the Finnish economy. In fact, historical decomposition shows clearly that the sharp downturn in the Finnish economy during 2007–2008 (and, to some extent, the mild recession of 2001) was driven predominantly by exogenous factors. The Finnish Great Depression was, however, very different.

The historical decomposition presented in Chart 1 allows us to make an assessment of how much the collapse in Soviet trade contributed to the decline in Finnish GDP. The drop in demand from the USSR can be classed as a shock in external demand. However, a considerable part of the ‘Soviet’ sector of the Finnish economy became obsolete after 1991, as many production plants concentrated on Soviet markets had to shut down. Hence, the collapse of Soviet trade can also be thought of as capital obsolescence, such that the Finnish–Soviet trade collapse can in principle appear in the historical decomposition both as a negative export demand shock and as a negative domestic supply shock.

The historical decomposition perhaps also picks up a drop in external demand peaking at the turn of 1990 as well as several quarters of negative impact from domestic supply between 1990 and 1994. The sum of the external demand shock and the domestic supply shock provides an upper bound for the impact of Soviet trade.

Another large part of the decomposition comprises domestic financial factors.

Chart 1.

Historical decomposition

1. Stress
2. External demand
3. Aggregate demand
4. Aggregate supply
5. Asset prices
6. Loan supply
7. Other shocks
8. Initial conditions
9. GDB growth rate

factors. These include both the asset price shock and the loan supply shock. The collapse of the asset price bubble plays an important role between 1990 and 1992. Negative loan supply shocks play a smaller part during the trough, but were dragging down the economy in the recovery phase, around 1994–1995.

The prelude to the crisis was characterized by an overheated economy and high growth rates fuelled by rapid growth in asset prices and strong domestic demand. The decomposition picks up the bubble on the stock and housing markets that followed the financial liberalization of the mid-1980s.

Counterfactuals

To gain further insight into the role of financial factors during the Finnish Great Depression, we analyse to what extent the domestic sector was the actual source of shocks and to what extent it was working as an amplifying mechanism for other shocks. This is done by use of counterfactual scenarios, whereby we first exclude the domestic financial shocks and then also exclude the feedback mechanism from financial variables to the real economy. The results are presented in Chart 2.

If the domestic financial shocks, i.e. the asset price and loan supply shocks, are excluded, the drop in GDP in the trough of the depression is smaller by one third (Counterfactual 1, red line). In 1992 and 1993 the difference is even more striking, and without these shocks the economy would have experienced only a rather mild recession.

In Counterfactual 2 (green line) we additionally exclude the feedback from domestic financial variables to the real economy. The picture changes further still. The recession becomes very moderate between 1992 and 1993. Now the drop in GDP is less than half of what was actually observed in the early 1990s. We interpret this result as strong evidence that financial factors indeed played an important role in deepening the ‘Great Depression’. The large role played by domestic financial factors is also clear during the prelude to the crisis, i.e. in the late 1980s. Positive financial shocks add around two percentage points to the GDP.

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6 The decomposition might be overemphasizing the role of asset price shocks relative to loan supply shocks in the boom phase, as high asset prices kept collateral values high and, in consequence, held loan losses at bay.
growth rate in 1987 and 1988. Amplification effects make this impact even more pronounced.

It is also worth noting some differences between the Finnish Great Depression and other episodes over the last quarter of a century. During the Great Recession, the financial sector acted mainly as an amplifier of negative shocks (green line). However, the shocks that drove the economy were almost exclusively of foreign origin. Comparison of red and black lines shows that the role of domestic financial shocks was essentially nil.

**Finnish Great Depression and Great Recession were different**

We conducted an empirical study of the Finnish business cycle, focusing on the Finnish ‘Great Depression’ and ‘Great Recession’ episodes. We find a significant feedback from financial variables to the real economy. This feedback is most clear during episodes of boom and bust. However, the role of financial factors is not only about shocks generated within the domestic financial sector; the financial sector also contributes to the business cycle as a transmitter of real economic shocks. Quite typically, the financial sector amplifies the effects of supply, demand and external shocks to the Finnish economy.

The set of factors that led to the Finnish Great Depression were very different from those of the Great Recession in the late 2000s. The former was associated with the bust of asset and lending bubbles followed by a financial and banking crisis together with the collapse of Soviet trade. In consequence, the decline was prolonged and turned into a depression, with a negative GDP growth rate lasting 13 consecutive quarters. The crisis of 2008–2009 was an imported recession originating from global financial markets and a slump in global demand, yet the feedback from the domestic financial sector to the real economy amplified the recession substantially, if to a lesser extent than in the early 1990s.

*Keywords: the Finnish ‘Great Depression’ of the early 1990s, financial crisis, business cycles*
References


Articles


Boxes

Bank of Finland Bulletin 5/2013, Economic outlook
- National accounts for the third quarter of 2013 (p. 11).
- Employment effects of structural change in manufacturing sector (p. 12–13).
- Weak economic trend reflected more in employment than unemployment (p. 25–26).
- Finland’s public finances (p. 36–38).
- Outlook for Finland’s cost-competitiveness (p. 40–41).

Bank of Finland Bulletin 3/2013, Economic outlook
- National accounts for the first quarter of 2013 (p. 12).
- Geographical and product structures of Finnish goods exports have changed (p. 23–25).
- Demographic factors obscuring the picture of labour supply (p. 30–31).
- Composition of Finland’s public debt (p. 36–38).
- Foreign trade statistics based on value added reallocate country-specific trade surpluses and deficits (p. 41–44).
- Finnish inflation above euro area average (p. 47–48).

Bank of Finland Bulletin 5/2012, Economic outlook
- National accounts for the third quarter of 2012 (p. 12).
- Precautionary savings push up household savings ratio in a recession (p. 24–26).
- The link between economic growth and the unemployment rate has changed (p. 30–32).
- Finland’s public finances (p. 36–40).

Bank of Finland Bulletin 3/2012, Economic outlook
- National Accounts for the first quarter of 2012 (p. 11).
- Finnish services exports still narrowly based (p. 21–23).
- Productivity developments reflect sectoral, structural and cyclical factors (p. 30–32).
- Current account decline based on several factors (p. 37–38).

Alternative scenarios
### 1. Balance of supply and demand, at reference year 2000 prices

<table>
<thead>
<tr>
<th>% change on previous year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP at market prices</td>
<td>–1.0</td>
<td>–1.4</td>
<td>0.0</td>
<td>1.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Imports of goods and services</td>
<td>–0.7</td>
<td>–1.8</td>
<td>1.0</td>
<td>4.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>–0.2</td>
<td>0.3</td>
<td>2.1</td>
<td>4.8</td>
<td>5.0</td>
</tr>
<tr>
<td>Private consumption</td>
<td>0.3</td>
<td>–0.8</td>
<td>–0.7</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Public consumption</td>
<td>0.5</td>
<td>0.8</td>
<td>0.5</td>
<td>–0.8</td>
<td>–0.2</td>
</tr>
<tr>
<td>Private fixed investment</td>
<td>–1.2</td>
<td>–6.4</td>
<td>–4.7</td>
<td>5.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Public fixed investment</td>
<td>1.7</td>
<td>6.8</td>
<td>–0.6</td>
<td>–1.1</td>
<td>–1.3</td>
</tr>
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</table>

### 2. Contributions to growth

<table>
<thead>
<tr>
<th>GDP, % change</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net exports</td>
<td>–1.0</td>
<td>–1.4</td>
<td>0.0</td>
<td>1.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Domestic demand excl. inventory change</td>
<td>0.2</td>
<td>0.9</td>
<td>0.4</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Consumption</td>
<td>0.1</td>
<td>–1.2</td>
<td>–1.1</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>– Investment</td>
<td>0.3</td>
<td>–0.3</td>
<td>–0.3</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Inventory change + statistical discrepancy</td>
<td>–0.2</td>
<td>–0.9</td>
<td>–0.8</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>–1.3</td>
<td>–1.1</td>
<td>0.6</td>
<td>0.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

1 Bank of Finland calculations. Annual growth rates using the previous year’s GDP shares at current prices as weights.

### 3. Balance of supply and demand, price deflators

<table>
<thead>
<tr>
<th>Index, 2000 = 100, and % change on previous year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP at market prices</td>
<td>120.4</td>
<td>122.8</td>
<td>124.6</td>
<td>126.4</td>
<td>128.4</td>
</tr>
<tr>
<td>Imports of goods and services</td>
<td>117.6</td>
<td>116.4</td>
<td>113.9</td>
<td>114.4</td>
<td>115.8</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>101.5</td>
<td>100.6</td>
<td>99.1</td>
<td>99.6</td>
<td>100.7</td>
</tr>
<tr>
<td>Private consumption</td>
<td>124.3</td>
<td>126.3</td>
<td>127.7</td>
<td>129.5</td>
<td>131.4</td>
</tr>
<tr>
<td>Public consumption</td>
<td>153.9</td>
<td>157.2</td>
<td>159.5</td>
<td>162.4</td>
<td>165.7</td>
</tr>
<tr>
<td>Private fixed investment</td>
<td>122.9</td>
<td>124.7</td>
<td>126.3</td>
<td>127.7</td>
<td>129.7</td>
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<tr>
<td>Public fixed investment</td>
<td>135.4</td>
<td>137.4</td>
<td>138.8</td>
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<tr>
<td>Terms of trade (goods and services)</td>
<td>86.3</td>
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</table>
4. Balance of supply and demand, at current prices

**EUR million and % change on previous year**

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
<th>2014f</th>
<th>2015f</th>
<th>2016f</th>
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</thead>
<tbody>
<tr>
<td>GDP at market prices</td>
<td>192,350</td>
<td>193,443</td>
<td>196,203</td>
<td>201,874</td>
<td>208,148</td>
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<tr>
<td>Imports of goods and services</td>
<td>80,026</td>
<td>77,799</td>
<td>76,903</td>
<td>80,399</td>
<td>85,502</td>
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<tr>
<td>Total supply</td>
<td>272,376</td>
<td>271,242</td>
<td>273,106</td>
<td>282,272</td>
<td>293,650</td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>78,056</td>
<td>77,577</td>
<td>77,999</td>
<td>82,175</td>
<td>87,218</td>
</tr>
<tr>
<td>Consumption</td>
<td>156,854</td>
<td>159,158</td>
<td>160,523</td>
<td>163,432</td>
<td>167,201</td>
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<tr>
<td>Private</td>
<td>108,546</td>
<td>109,433</td>
<td>109,835</td>
<td>112,626</td>
<td>115,065</td>
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<td>Public</td>
<td>48,308</td>
<td>49,725</td>
<td>50,687</td>
<td>51,170</td>
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<td>Fixed investment</td>
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<td>36,642</td>
<td>35,575</td>
<td>37,549</td>
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<td>Private</td>
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<td>31,196</td>
<td>30,108</td>
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<td>5,446</td>
<td>5,467</td>
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<td>Inventory change + statistical discrepancy</td>
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<td>−2,135</td>
<td>−991</td>
<td>−883</td>
<td>−800</td>
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<td>% of previous year's total demand</td>
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<td>−0.6</td>
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<tr>
<td>Total demand</td>
<td>272,376</td>
<td>271,242</td>
<td>273,106</td>
<td>282,272</td>
<td>293,650</td>
</tr>
<tr>
<td>Total domestic demand</td>
<td>194,320</td>
<td>193,665</td>
<td>195,107</td>
<td>200,097</td>
<td>206,432</td>
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5. Balance of supply and demand

**% of GDP at current prices**

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<th>2013</th>
<th>2014f</th>
<th>2015f</th>
<th>2016f</th>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
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<td>Imports of goods and services</td>
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<td>39.2</td>
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<td>40.1</td>
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<td>Consumption</td>
<td>81.5</td>
<td>82.3</td>
<td>81.8</td>
<td>81.0</td>
<td>80.3</td>
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<td>Private</td>
<td>56.4</td>
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<td>25.7</td>
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<td>16.1</td>
<td>15.3</td>
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<td>2.8</td>
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<td>2.7</td>
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<td>Inventory change + statistical discrepancy</td>
<td>−0.2</td>
<td>−1.1</td>
<td>−0.5</td>
<td>−0.4</td>
<td>−0.4</td>
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<tr>
<td>Total demand</td>
<td>141.6</td>
<td>140.2</td>
<td>139.2</td>
<td>139.8</td>
<td>141.1</td>
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<tr>
<td>Total domestic demand</td>
<td>101.0</td>
<td>100.1</td>
<td>99.4</td>
<td>99.1</td>
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### 6. Prices

**Index, 2000 = 100 and % change on previous year**

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<tr>
<td>Harmonised index of consumer prices, 2005 = 100</td>
<td>117.8</td>
<td>120.4</td>
<td>121.9</td>
<td>123.4</td>
<td>125.3</td>
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<tr>
<td>Consumer price index, 2005 = 100</td>
<td>116.6</td>
<td>118.3</td>
<td>119.5</td>
<td>121.3</td>
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<tr>
<td>Private consumption deflator</td>
<td>124.3</td>
<td>126.3</td>
<td>127.7</td>
<td>129.5</td>
<td>131.4</td>
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<tr>
<td>Private investment deflator</td>
<td>122.9</td>
<td>124.7</td>
<td>126.3</td>
<td>127.7</td>
<td>129.7</td>
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<tr>
<td>Exports of goods and services deflator</td>
<td>101.5</td>
<td>100.6</td>
<td>99.1</td>
<td>99.6</td>
<td>100.7</td>
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<tr>
<td>Imports of goods and services deflator</td>
<td>117.6</td>
<td>116.4</td>
<td>113.9</td>
<td>114.4</td>
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**Value-added deflators**

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</thead>
<tbody>
<tr>
<td>Value added, gross at basic prices</td>
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<td>123.1</td>
<td>124.6</td>
<td>126.2</td>
<td>128.0</td>
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<td>Private sector</td>
<td>111.9</td>
<td>113.2</td>
<td>114.2</td>
<td>115.6</td>
<td>117.1</td>
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<td>Public sector</td>
<td>172.9</td>
<td>179.3</td>
<td>183.2</td>
<td>186.2</td>
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### 7. Wages and productivity

**% change on previous year**

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</tr>
</thead>
<tbody>
<tr>
<td>Whole economy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index of wage and salary earnings</td>
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<td>2.0</td>
<td>1.1</td>
<td>1.6</td>
<td>2.0</td>
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<tr>
<td>Compensation per employee</td>
<td>3.5</td>
<td>1.8</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
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<tr>
<td>Unit labour costs</td>
<td>5.0</td>
<td>2.2</td>
<td>0.4</td>
<td>0.4</td>
<td>1.0</td>
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<tr>
<td>Labour productivity per employed person</td>
<td>−1.4</td>
<td>−0.3</td>
<td>0.5</td>
<td>1.1</td>
<td>1.0</td>
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### 8. Labour market

**1,000 persons and % change on previous year**

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<tr>
<td>Labour force survey (15–74-year-olds)</td>
<td>2,483</td>
<td>2,456</td>
<td>2,443</td>
<td>2,451</td>
<td>2,464</td>
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<tr>
<td>Employed persons</td>
<td>0.4</td>
<td>−1.1</td>
<td>−0.6</td>
<td>0.3</td>
<td>0.5</td>
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<tr>
<td>Unemployed persons</td>
<td>207</td>
<td>219</td>
<td>231</td>
<td>222</td>
<td>208</td>
</tr>
<tr>
<td>Labour force</td>
<td>−0.9</td>
<td>6.1</td>
<td>5.4</td>
<td>−3.9</td>
<td>−6.5</td>
</tr>
<tr>
<td>Working-age population (15–64-year-olds)</td>
<td>3,524</td>
<td>3,508</td>
<td>3,492</td>
<td>3,479</td>
<td>3,469</td>
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<tr>
<td>Labour force participation rate, %</td>
<td>66.0</td>
<td>65.5</td>
<td>65.3</td>
<td>65.0</td>
<td>65.0</td>
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<tr>
<td>Unemployment rate, %</td>
<td>7.7</td>
<td>8.2</td>
<td>8.6</td>
<td>8.3</td>
<td>7.8</td>
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<tr>
<td>Employment rate (15–64-year-olds), %</td>
<td>69.0</td>
<td>68.5</td>
<td>68.4</td>
<td>68.8</td>
<td>69.4</td>
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### 9. General government revenue, expenditure, balance and debt

#### % of GDP

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</thead>
<tbody>
<tr>
<td>General government revenue</td>
<td>54.5</td>
<td>56.0</td>
<td>56.3</td>
<td>56.4</td>
<td>56.2</td>
</tr>
<tr>
<td>General government expenditure</td>
<td>56.7</td>
<td>58.4</td>
<td>58.9</td>
<td>58.0</td>
<td>57.6</td>
</tr>
<tr>
<td>General government primary expenditure</td>
<td>55.3</td>
<td>57.1</td>
<td>57.6</td>
<td>56.7</td>
<td>56.2</td>
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<tr>
<td>General government interest expenditure</td>
<td>1.4</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>General government net lending</td>
<td>−2.2</td>
<td>−2.4</td>
<td>−2.6</td>
<td>−1.6</td>
<td>−1.4</td>
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<tr>
<td>Central government</td>
<td>−3.8</td>
<td>−3.7</td>
<td>−3.5</td>
<td>−2.6</td>
<td>−2.5</td>
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<tr>
<td>Local government</td>
<td>−1.1</td>
<td>−0.8</td>
<td>−0.9</td>
<td>−0.9</td>
<td>−0.8</td>
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<tr>
<td>Social security funds</td>
<td>2.7</td>
<td>2.1</td>
<td>1.8</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>General government primary balance</td>
<td>−0.8</td>
<td>−1.1</td>
<td>−1.3</td>
<td>−0.3</td>
<td>−0.1</td>
</tr>
<tr>
<td>General government debt (EDP)</td>
<td>53.6</td>
<td>57.0</td>
<td>60.3</td>
<td>61.6</td>
<td>62.9</td>
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<tr>
<td>Central government debt</td>
<td>43.6</td>
<td>46.4</td>
<td>49.0</td>
<td>49.8</td>
<td>50.8</td>
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<tr>
<td>Tax ratio</td>
<td>44.0</td>
<td>45.5</td>
<td>45.6</td>
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</table>

#### EUR million

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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Exports of goods and services (SNA)</td>
<td>78,056</td>
<td>77,577</td>
<td>77,999</td>
<td>82,175</td>
<td>87,218</td>
</tr>
<tr>
<td>Imports of goods and services (SNA)</td>
<td>80,026</td>
<td>77,799</td>
<td>76,903</td>
<td>80,399</td>
<td>85,502</td>
</tr>
<tr>
<td>Goods and services account (SNA)</td>
<td>−1,970</td>
<td>−222</td>
<td>1,096</td>
<td>1,776</td>
<td>1,716</td>
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<tr>
<td>% of GDP</td>
<td>−1.0</td>
<td>−0.1</td>
<td>0.6</td>
<td>0.9</td>
<td>0.8</td>
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<tr>
<td>Investment income and other items, net (+ statistical discrepancy)</td>
<td>560</td>
<td>264</td>
<td>163</td>
<td>−2</td>
<td>−24</td>
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<tr>
<td>Current transfers, net</td>
<td>−1,335</td>
<td>−2,120</td>
<td>−2,143</td>
<td>−2,168</td>
<td>−2,222</td>
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<tr>
<td>Current account, net</td>
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<td>−2,078</td>
<td>−1,210</td>
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<td>Net lending, % of GDP</td>
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<tr>
<td>Private sector</td>
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<td>Public sector</td>
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#### Net lending, % of GDP

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<td>3-month Euribor</td>
<td>0.8</td>
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<td>0.4</td>
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<td>Average interest rate on new loans</td>
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<td>1.8</td>
<td>1.9</td>
<td>2.1</td>
<td>2.3</td>
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<tr>
<td>Average rate of interest on deposits</td>
<td>1.9</td>
<td>1.9</td>
<td>1.8</td>
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<tr>
<td>Bank lending rate, average</td>
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<td>Yield on Finnish 10-year government bonds</td>
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1 Technical assumption derived from market expectations.
12. International environment

**Eurosystem staff projections**

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<th>GDP, % change on previous year</th>
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<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tbody>
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<td>World</td>
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<td>USA</td>
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<td>2.4</td>
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<td>Euro area</td>
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<td>Japan</td>
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<table>
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<th>Imports, % change on previous year</th>
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<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tbody>
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<td>3.2</td>
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<td>USA</td>
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<td>1.4</td>
<td>2.5</td>
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<td>Euro area</td>
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<th>Index, 2000 = 100 and % change on previous year</th>
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<th>2015</th>
<th>2016</th>
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<tr>
<td>Import volume in Finnish export markets</td>
<td>177.8</td>
<td>181.6</td>
<td>188.6</td>
<td>197.4</td>
<td>207.8</td>
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<td>2.4</td>
<td>2.1</td>
<td>3.8</td>
<td>4.7</td>
<td>5.3</td>
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<tr>
<td>Export prices (excl. oil) of Finland’s trading partners, national currencies</td>
<td>117.6</td>
<td>116.4</td>
<td>114.3</td>
<td>115.3</td>
<td>116.9</td>
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<tr>
<td></td>
<td>0.5</td>
<td>-1.0</td>
<td>-1.8</td>
<td>0.9</td>
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<tr>
<td>Export prices (excl. oil) of Finland’s trading partners, in euro</td>
<td>105.3</td>
<td>102.2</td>
<td>98.5</td>
<td>99.3</td>
<td>100.6</td>
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<td>3.2</td>
<td>-3.0</td>
<td>-3.6</td>
<td>0.8</td>
<td>1.3</td>
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<tr>
<td>Industrial raw materials (excl. energy),</td>
<td>204.8</td>
<td>199.2</td>
<td>197.2</td>
<td>200.8</td>
<td>210.1</td>
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<tr>
<td>HWHA index, in US dollars</td>
<td>-15.8</td>
<td>-2.7</td>
<td>-1.0</td>
<td>1.8</td>
<td>4.6</td>
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<tr>
<td>Oil price, USD per barrel&lt;sup&gt;1&lt;/sup&gt;</td>
<td>112.0</td>
<td>108.8</td>
<td>107.2</td>
<td>102.2</td>
<td>98.2</td>
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<tr>
<td></td>
<td>0.9</td>
<td>-2.8</td>
<td>-1.6</td>
<td>-4.6</td>
<td>-3.9</td>
</tr>
<tr>
<td>Finland’s nominal competitiveness indicator&lt;sup&gt;2&lt;/sup&gt;</td>
<td>100.1</td>
<td>102.6</td>
<td>104.5</td>
<td>104.7</td>
<td>104.7</td>
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<tr>
<td></td>
<td>-2.9</td>
<td>2.5</td>
<td>1.8</td>
<td>0.2</td>
<td>0.0</td>
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<tr>
<td>US dollar value of one euro&lt;sup&gt;3&lt;/sup&gt;</td>
<td>1.28</td>
<td>1.33</td>
<td>1.38</td>
<td>1.38</td>
<td>1.38</td>
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<td>-7.7</td>
<td>3.4</td>
<td>3.9</td>
<td>0.3</td>
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<sup>1</sup>The Eurosystem staff projections for macroeconomic developments in the euro area are prepared for the years 2014–2016.

<sup>2</sup>Technical assumption derived from market expectations.

<sup>3</sup>Narrow plus euro area, 1999 Q1 = 100.
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1 June 2014

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<td>Deputy Governor</td>
<td>Member of the Board</td>
</tr>
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