Finland's long-term growth outlook has deteriorated

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The prolongation of the recession, accumulation of public debt and ageing of the population are eroding the growth potential of the Finnish economy. Potential output growth is expected to remain below 1% over the next 25 years.

The prolonged recession, industrial restructuring and faster-than-predicted accumulation of general government debt are depressing the growth potential of the Finnish economy. What makes this particularly problematic is that the potential for growth is weak for demographic reasons, too. Even before the prolongation of the recession, growth was projected to remain much slower than that witnessed in Finland in recent decades.

In spring 2012, the Bank of Finland estimated an average annual growth rate of just under 1½% for approximately the next 20 years.[1] This is roughly consistent with the most recent official estimates, i.e. the European Commission projections and Ministry of Finance calculations, the latter primarily used for the fiscal sustainability analysis.

The recession, which is already in its fourth year, has had several implications for Finland's growth prospects. The loss of growth potential since 2008 reflects a reduction in labour supply, subdued corporate investment and a decline in the corporate resources devoted to research and product development.

The present article explores the growth outlook for the economy for the next two decades. The calculations are largely based on a growth accounting framework whereby the evolution of production inputs capture the changes in production structure and labour market developments. In addition, we employ the Aino model to simulate the growth effects of pension reform and fiscal consolidation measures. The time horizon of the model simulations extends as far as the start of the 2040s.

Prolonged recession has eroded growth base

The deterioration in Finland's growth prospects reflects factors identified as a common source of lower potential growth in advanced economies. The failure of economic growth to pick up despite the low interest rates has been attributed to e.g. demographic ageing, lower return on education and higher inequality, but above all to the accumulation of general government debt in these economies.[2]

Since 2008, growth in **productive capital** has been historically sluggish in Finland. Investment volumes have not been high enough to compensate for capital consumption and depreciation, resulting in a contraction in the capital stock. The net capital stock in manufacturing declined by around 12% between 2008 and 2013. The contraction in the capital stock has been particularly pronounced in the forest industries, amounting to around

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[1] See Kinnunen – Mäki-Fränti – Newby – Orjasniemi (2012) Long-term growth forecast for the Finnish economy. Bank of Finland Bulletin 3/2012. Bank of Finland.

[2] For a discussion on so-called secular stagnation, see e.g. http://www.voxeu.org/sites/default/files/Vox_secular_stagnation.pdf.

Finland's industrial base has deteriorated more during the present financial crisis than during the Finnish depression of the 1990s.

one fifth, while the figure in electrical engineering and electronics was 15% over the corresponding period. Across the economy as a whole, the net capital stock has hardly increased since 2008, and even declined in 2013 (Chart 1). Thus, Finland's industrial base has deteriorated sharply during the recession, much more so than during the Finnish Great Depression of the 1990s, when the contraction in net manufacturing capital stock was, at most, around 2% in 1993–1995.

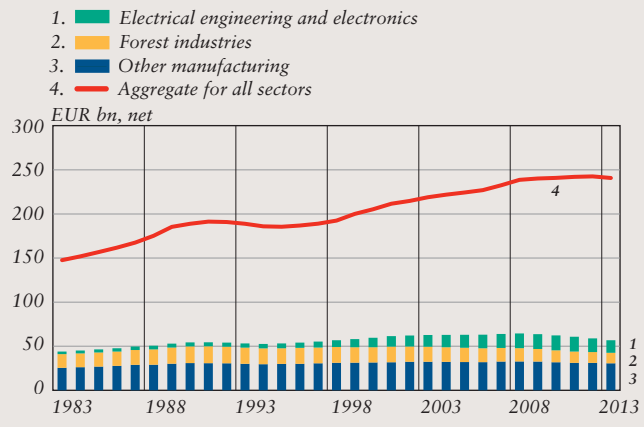
In **labour supply**, the economic crisis is reflected in a decline in the labour force participation rate (LFPR). In 2013, the LFPR was 2 percentage points lower than in 2008. Remaining outside the labour force has become unusually common. Recently, a new phenomenon has emerged, with the fall in the LFPR for cohorts who have generally remained active in the labour market irrespective of business cycle conditions. Notably, the decline in the LFPR for 30–34-year-olds has been stronger than average, over 4 percentage points. Similarly, a downward trend is noticeable in the LFPR for 35–39-year-olds (Chart 2). The broad picture on the labour market is that as the unemployment spell lengthens the higher is the proportion of unemployed job-seekers who do not engage in an active job search. The difference between registered data (Ministry of Employment and the Economy) and survey data (Statistics Finland) has grown exceptionally wide, as hidden unemployment has risen. The deterioration in the employment situation is also reflected in higher underemployment.

Developments in **total factor productivity growth** have been exceptionally muted historically, with total factor productivity declining markedly in the midst of the recession (2008). Whereas total factor productivity growth was spurred by the expansion of the electrical engineering and electronics industry, as well as other industrial changes, in the years following the 1990s depression, it has performed weakly since the global financial crisis. According to the European Commission's forecast, growth in total factor productivity will continue to be subdued, on average, for economies across the EU.

Growth prospects are dampened further by slower expansion in research and product development in Finland and other EU economies alike (Chart 3). With the rapid deterioration in general government finances, the increase in

Chart 1.

Capital stock by main sectors



Sources: Statistics Finland and calculations by the Bank of Finland.

spending on R&D came to a halt in 2011, and public spending on R&D has trended downwards since. Companies' own R&D efforts have also waned as the recession has persisted.

Average productivity in the economy is depressed by an increase in **the share of social welfare and health care services in the total economy**. In the recession years, the importance of these mainly publicly funded services for average labour productivity was still relatively modest. However, the future increase in the share of these services will slow down average productivity developments.

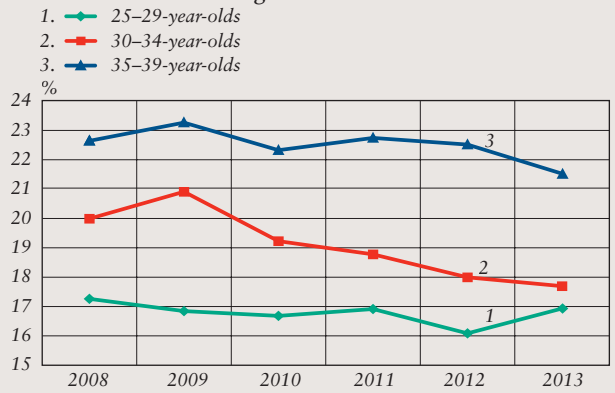
Many countries witnessed a surge in both private and public-sector debt ratios before the onset of the global financial crisis. In response, households, non-financial corporations and the public sector face the need for balance sheet adjustments, which will curb economic growth. In Finland, the need for debt consolidation primarily applies to general government finances, whereas there have not been clear signs of household over-indebtedness. As for non-financial corporations, some balance sheet adjustment has been undertaken, but debt ratios have remained relatively low despite subdued output growth.

Developments in growth factors

In what follows, we adopt a growth accounting approach to identify the contribution to economic growth from a variety of factors. This approach is consistent with the Bank of Finland's growth decomposition analysis performed in spring 2012. For the

Chart 2.

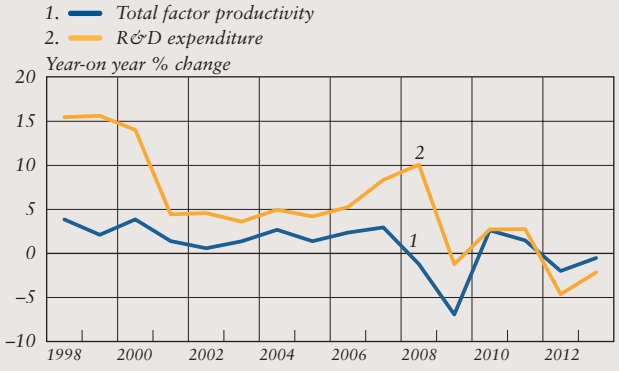
Labour force share of selected age groups: deviation from average



Source: Bank of Finland calculations.

Chart 3.

R&D expenditure and total factor productivity



Source: Statistics Finland.

purposes of this analysis, the economy is broken down into three sectors: general government, manufacturing and non-manufacturing private activities. The sectoral breakdown allows for the capture of differences in the growth rates for labour, capital and productivity across the three sectors of the economy.

The model is employed to generate a baseline scenario, which is supplemented by two alternative scenarios. The first alternative scenario assumes that the rise in the LFPR following the 2014 pension reform will be consistent with the recent estimate of the Finnish Centre for Pensions. The second, adverse scenario is based on an assumption that the prolongation of the recession will force part of the labour force out of the labour market permanently.

Growth in labour supply stronger than previously predicted

The labour supply forecast is based on the population forecast released by Statistics Finland in 2012, and the changes in the LFPR have been projected using a cohort-specific forecast model.[3] Using the population forecast and labour force share model, the LFPR (of 15–74-year-olds) is estimated to increase from the current level by around 1 percentage point as we enter the 2030s. The number of people employed would then be 40,000 higher than in 2004–2013, on average. The estimate of labour supply has been revised up from the 2012 forecast. The 2012 forecast was based on the 2009 population forecast, which provided a lower estimate of net immigration than the 2012 population forecast.

In the baseline scenario, the LFPR is expected to increase slightly as we enter the 2020s. Furthermore, the increase in the share of people of prime working age with better-than-average productivity in the total labour force will offset some of the effects of population ageing.[4] Consequently, the size of the labour force will remain practically unchanged in effective terms until the start of the 2030s. In the growth accounting analysis, the differences between the changes in the size of the effective and the real labour force have been accounted for by an upward adjustment of annual total factor productivity growth by 0.1 of a percentage point rather than by an adjustment of the size of the labour force.

In addition to the overall size of the labour force, economic growth is also affected by how the labour force is distributed between the different sectors of the economy. In the public sector, labour productivity growth is assumed to improve substantially compared with past experience, but to remain slow at only around 0.1–0.2% per annum.

Amid sluggish productivity performance, labour demand in the public sector closely mirrors output growth in public services, which, in turn, reflects a growing need for services to accommodate an ageing

[3] See Kinnunen – Mäki-Fränti (2013) Labour supply and population cohorts: impact of the business cycle on labour market attachment. Bank of Finland Bulletin 3/2013. Bank of Finland.

[4] For a description of the method employed to calculate effective labour force, see Box 7.

population. The calculation assumes that the volume of service production in other than age-related services remains unchanged from 2014. The remaining portion of the labour force is used in industrial and other private production. Under these assumptions, average growth in the public sector labour force will be 0.3% per annum over the years 2014–2030, while the private sector labour force will remain broadly unchanged.

A key determinant of labour supply is whether the recession will leave a permanent mark on the LFPR. In the worst case, some of those in prime working age may be permanently crowded out of the labour market if labour market conditions remain subdued. Cohort-specific analyses and recent developments on the labour market point to two phenomena that raise concern over developments in the long term. The LFPR for the cohorts born at the end of the 1970s and in the 1980s, who currently participate in the labour market, has been lower than average irrespective of the business cycle. Another finding from the cohort-specific studies is that, in response to the prolongation of unemployment, 45–59-year-olds have a relatively high probability to crowd out of the labour market. Both of these factors tend to reduce labour market participation.

Productivity developments subdued

Growth in the manufacturing capital stock will remain slow, due to subdued investment in manufacturing. A considerable portion of the manufacturing jobs that were lost during the recession will not be recovered for a long time. From 2016 on, the capital stock is expected to increase at an annual rate of 0.1%. This is much less than foreseen in the previous long-term growth forecast released 2 years ago. Growth in the capital stock will pick up slightly towards the end of the forecast horizon. According to the calculation, the annual growth rate for the capital stock in other private production will average 1.2%.

The public sector capital stock has grown around ½% per annum since 1995. The pace has, however, not been even, as part of public investment has been undertaken to smooth out business cycles. Public sector investment is expected to grow slightly during 2014–2032. Improvements in public sector productivity are conditional on additional investments in e.g. machinery and equipment. As growth in the capital stock is expected to outpace employment growth, public sector capital formation will make a positive contribution to growth.

The longer the horizon of the analysis, the stronger the dependence of the economic growth rate on developments in total factor productivity. During the past 40 years, total factor productivity in the Finnish economy has increased by more than 3% per annum, on average. In the 2012 long-term projections, the rate of total factor productivity growth was expected to slow down significantly but to remain around 1% over the next two decades. This estimate, too, has now been revised down to a modest 0.2 of a percentage point per annum, on

Over the long term, the growth rate of the economy will depend on developments in total factor productivity.

average, for the years 2014–2020 and around 0.5% for 2021–2030.

In response to the longer-than-expected recession, the outlook for total factor productivity growth has deteriorated EU-wide. According to the European Commission, average growth in total factor productivity will be 0.8% in the EU countries as a whole, and 0.7% in Finland, over the years 2013–2060. The estimate of total factor productivity growth for Finland presented in this article is still slightly more modest than that of the European Commission. The difference is explained above all by structural realignment in the economy and subdued productivity performance in the public sector. Both EU-wide and in Finland, growth in total factor productivity is also constrained by the muted developments in the capital stock. Especially investments in intangible assets, such as R&D, and immaterial rights, but also in organizational development, are crucial to the performance of total factor productivity.

Economic growth will depend on improvements in private sector labour productivity.

Productivity in general government hinges on growth in capital intensity. Total factor productivity in the public sector is expected to continue to decline slightly, albeit less than in the immediate past.

Economic growth clearly losing momentum

Following the sluggish economic developments in recent years, the rate of real GDP growth in Finland remained well below the long-term trend growth rate in the past ten-year period 2004–2013. A further moderation in economic growth is foreseen in the next two decades. Average GDP growth is projected to be around 0.8% in 2014–2020 and to pick up to a little over 1% in the 2020s (Table 1). Hence, over the years 2014–2030 economic growth will lag nearly 0.5 of a percentage point behind the growth rate projected by the Bank of Finland in 2012. The downward revision of the forecast for the first ten-year period is partly attributable to the weaker-than-expected situation at the outset, which is also reflected in the short-term growth forecast.

In both the ten-year periods, economic growth will depend on improvements in private sector labour productivity (Table 1). Although labour output in the public sector is expected to increase notably in 2014–2020, its contribution to GDP growth will remain modest. The growth impact of labour productivity in the private sector will be 0.9% in 2014–2020 and 1.4% over the next ten-year period, with growth in capital intensity and growth in total factor productivity making a roughly equal contribution to labour productivity. In the public sector, weak growth in total factor productivity will be offset by an increase in capital intensity.

Concentration of production in sectors with below-average productivity growth will contribute to the moderation of output growth in the economy as a whole over the forecast horizon (Chart 4). Improvements in within-sector productivity will also fall back relative to the past ten-year period. In the 2020s, improvements in productivity will have an upward effect

Table 1.

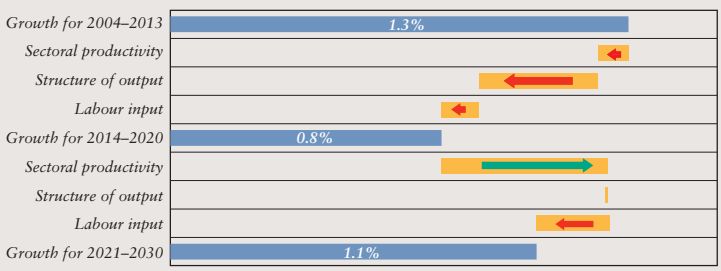
Average trend growth by sector and its components

	2004–2013	2014–2020	2021–2030
Total economy, %			
GDP	*1.3*	*0.8*	*1.1*
Labour input	*0.4*	*0.3*	*0.1*
Labour productivity	*0.9*	*0.5*	*1.0*
Total factor productivity	*0.4*	*0.1*	*0.5*
Capital intensity	*0.5*	*0.4*	*0.5*
Private sector, %			
Output	*1.7*	*1.0*	*1.3*
Labour input	*0.4*	*0.1*	*–0.1*
Labour productivity	*1.3*	*0.9*	*1.4*
Total factor productivity	*0.7*	*0.4*	*0.8*
Capital intensity	*0.6*	*0.5*	*0.6*
Public sector, %			
Output	*–0.4*	*0.6*	*0.5*
Labour input	*0.4*	*0.5*	*0.2*
Labour productivity	*–0.8*	*0.2*	*0.3*
Total factor productivity	*–1.0*	*–0.2*	*–0.2*
Capital intensity	*0.2*	*0.4*	*0.5*

Source: Bank of Finland calculations.

Chart 4.

Economic growth and its components



Source: Bank of Finland calculations.

on growth, whereas the slow increase in labour input will have a further downward effect.

The baseline scenario is supplemented by a sensitivity analysis based on two alternative assumptions of labour supply developments. This explores the impact on the forecast of both long-term unemployment and the 2014 pension reform. It turns out that the results of the baseline scenario are not very sensitive to these alternative assumptions.

More persistent long-term unemployment would translate into a moderation in economic growth of around 0.2 of a percentage point in 2014–2020. In addition to reducing labour input, long-term unemployment will also decrease average labour productivity by exhausting some of the labour reserves in high-productivity sectors. However, in the projections, the growth effects of long-term unemployment do not extend as far as 2021–2030.

The pension reform would have an equal but opposite effect, resulting in an increase in total labour input. While the production of publicly funded services will remain unchanged, the higher supply of labour will enhance the scope for expansion in private production and boost average labour productivity growth. Provided that the productivity gains from the pension reform are in line with the projections, economic growth will pick up by around 0.1% per annum, on average, over the years 2020–2030.

The deterioration in growth prospects also has adverse implications for general government finances. The medium-term projections which build on the Bank of Finland's forecast foresee a deepening of the fiscal deficit together with the surge in ageing-related spending. A reversal of the upward trend in the debt ratio calls for adoption of substantial fiscal consolidation measures (see Box 4, above).

In order to obtain a more complete picture of the impact of the pension reform and other structural measures on economic growth and the required fiscal adjustment, the effects of structural reforms on e.g. wage formation and the response of economic agents to fiscal adjustment measures are incorporated into the analysis.

To this end, we will now explore the Aino model simulations that also capture the effects of the macrodynamics of the economy.

Analysis of the pension reform and other structural reforms using a general equilibrium model

The pension reform and other structural measures, such as savings in local government spending and progress with the social welfare and health care reform, have broader implications for the economy than what can be captured with mechanical sustainability analysis and with growth accounting framework. To identify these other channels, the demographic parameters of the Aino model, i.e. pension funds and key fiscal rules, were calibrated so as to generate the same debt and fiscal revenue paths in the baseline as in the fiscal sustainability calculation. The

analysis extends as far as the beginning of the 2040s.[5]

The **impact assessment of the pension reform** is based on the assumption that both central government and pension fund tax rules will contribute to budgetary stabilisation so as to allow the central government debt-to-GDP ratio and the ratio of pension funds to payroll to move close to the target level balance by 2040. In the simulation, the pension reform effect is accounted for mechanistically by assuming a postponement of the retirement age in line with the new agreement. The calculation also captures the changes in the pension replacement rate projected by the Finnish Centre for Pensions.

The simulation finds that adoption of the pension reform would reduce the upward pressure on the overall tax rate by around 1.5 percentage points by 2040. This is slightly more than the result of the mechanistic sustainability calculation.

The key macroeconomic gains delivered by the pension reform arise from slower growth in labour costs in response to an increase in labour supply and a lower upward pressure on taxes. This will improve cost-competitiveness, thus fuelling export growth. The lower cost pressures are also reflected in a moderation of growth in public consumption. The employment rate will rise by around 1 percentage point. Notwithstanding the improvement in employment, the increase in private consumption will remain relatively modest. However, investment growth will pick up, spurring an increase in the capital stock. Overall, the positive growth effects of the pension reform will remain small. It would increase GDP growth by less than 0.1 of a percentage point compared with the baseline. In other words, over a 25-year-horizon, GDP would increase 1.7% more than the baseline in response to the pension reform.

In the following analysis, we will explore the macroeconomic effects of not only the pension reform but also the structural policy programme, assuming that the municipalities (local government) are successful in making spending cuts to achieve their savings targets of EUR 2 billion. The calculation assumes that the savings in spending will be in place by 2019.

Further, if the municipalities are able to agree on changes in the expenditure framework to accommodate the savings of EUR 2 billion set out in the structural reform package without changes in the taxation structure, this would further reduce the need to tighten taxation. Together, the pension reform and the local government savings package would lower the upward pressure on taxation by more than 3 percentage points by 2040 (Table 3).

The pension reform will reduce the pace of growth in labour costs.

The simulations find that the measures would reduce labour costs, and the employment rate would rise by close to 1½ percentage points. The ratio of public spending to GDP would decline by more than 1 percentage

[5] The model was simulated from 2007 onwards under the assumption that economic agents have knowledge of fiscal policy decisions, demographic developments and the pension reform. The long-term equilibrium of the model was calibrated to reflect the situation in 2007–2013.

Table 2.

Long-term effects of the pension reform

	2015–2020	*2021–2030*	*2031–2040*	*2040****
*GDP**	*0.05*	*0.05*	*0.06*	*1.71*
*Private consumption**	*0.06*	*0.04*	*0.05*	*1.44*
*Exports**	*0.01*	*0.04*	*0.05*	*1.10*
*Labour input**	*0.05*	*0.05*	*0.06*	*1.73*
*Capital stock**	*0.05*	*0.04*	*0.06*	*1.47*
*Pension expenditure/GDP***	*–0.10*	*–0.37*	*–0.60*	*–0.64*
*Public consumption/GDP***	*–0.02*	*–0.08*	*–0.20*	*–0.26*
*Pension funds/payroll***	*0.35*	*0.98*	*1.37*	*1.38*
*Public debt/GDP***	*–0.21*	*–0.70*	*–1.39*	*–1.60*
*Employment rate***	*0.09*	*0.44*	*0.89*	*1.06*
*Labour costs***	*0.10*	*–0.73*	*–1.89*	*–2.36*
Inflation	*0.00*	*–0.10*	*–0.10*	*–1.36*
*Income tax rate***	*–0.11*	*–0.47*	*–1.18*	*–1.49*
*Pension contribution***	*–0.24*	*–0.87*	*–1.22*	*–1.21*
*Overall tax rate***	*–0.15*	*–0.63*	*–1.25*	*–1.46*

Effects expressed as % or % point deviations from the baseline

**) Annual growth*

***) Average deviation from the baseline during the period*

****) Deviation from the baseline*

Source: Bank of Finland calculations.

point compared with the baseline, while GDP growth would be a little under 3% above the baseline. However, the growth contribution of the package would still be moderate.

Overall, the model simulations demonstrate that the pension reform and adjustments in local government spending would make a significant contribution to fiscal balance and foster economic growth. At its best, these measures could place general government on a much more sustainable footing. If the benefits delivered by the structural reforms are passed through in full to contain tax increases, they will strengthen the competitiveness of the economy and provide for an acceleration of export-driven growth. Given the external indebtedness of the economy as a whole, all measures that support export growth improve overall balance of the economy.

However, the simulations also show the failure of these structural reforms to create such dynamics in the economy as to facilitate a pronounced acceleration in GDP growth. The delivery of sustainable economic growth that is driven by exports and investments rather than accumulation

Table 3.

Combined effect of pension reform and EUR 2 billion savings in local government spending

	2015–2020	*2021–2030*	*2031–2040*	*2040****
*GDP**	*0.07*	*0.09*	*0.08*	*2.73*
*Private consumption**	*0.14*	*0.08*	*0.07*	*2.87*
*Exports**	*0.03*	*0.08*	*0.06*	*2.21*
*Labour input**	*0.05*	*0.08*	*0.06*	*2.16*
*Capital stock**	*0.10*	*0.08*	*0.08*	*2.86*
*Pension expenditure/GDP***	*–0.11*	*–0.52*	*–0.83*	*–0.87*
*Public consumption/GDP***	*–0.14*	*–0.63*	*–0.98*	*–1.07*
*Pension funds/payroll***	*0.25*	*0.08*	*0.78*	*1.02*
*Public debt/GDP***	*–0.42*	*–1.81*	*–3.04*	*–3.16*
*Employment rate***	*0.09*	*0.53*	*1.14*	*1.34*
*Labour costs***	*0.10*	*–2.27*	*–4.28*	*–4.81*
*Income tax rate***	*–0.29*	*–1.77*	*–3.55*	*–4.08*
*Pension contribution***	*–0.35*	*–1.08*	*–1.41*	*–1.38*
*Overall tax rate***	*–0.30*	*–1.54*	*–2.79*	*–3.10*

Effects expressed as % or % point deviations from the baseline

**) Annual growth*

***) Average deviation from the baseline during the period*

****) Deviation from the onset*

Source: Bank of Finland calculations.

of domestic debt would seem to warrant further measures. Achievement of a solid growth base requires productivity improvements in both the public and the private sectors.

Significant fiscal adjustment necessary amid slowing economic growth

The growth outlook for Finland has been weakened by the recession. In response to shifts in the industrial structure, the share of output taken by high productivity sectors has declined, which threatens to undermine the long-term potential output of the economy. Fixed investment, including immaterial investment, has also trended down. Whereas the Bank of Finland in spring 2012 projected that economic growth will hover around 1½% over the next few decades, the present calculations arrive at a potential growth estimate of 1% per annum.

The adverse outlook for labour input growth mirrors labour market conditions. Workers of prime labour market age who used to remain on the labour market irrespective of business cycle conditions have increasingly abandoned their job search as their period of unemployment has dragged

on. Economic growth is constrained by an increase in demand for public services driven by an ageing population. In the longer term, however, potential growth is supported by a decline in the labour force share of the youngest and oldest segments of the working-age population. The pension reform will increase the labour force and, hence, boost economic growth, but to a relatively modest extent. A key issue in terms of total factor productivity is that the expansion of service production means an increasing share of the labour force will be engaged in sectors of lower-than-average productivity.

Sluggish economic growth, higher ageing-related expenditure and a surge in the debt ratio following the recession imply that there is a significant need for fiscal consolidation in the economy. The Aino model simulations of the impact of the pension reform and savings in local government expenditure especially highlight the labour-cost effects on economic developments. The simulations show that, at their best, the reforms may result in a significant increase in the output share of exports and expansion of production capacity. Hence, the reforms may improve the economic sustainability of the growth base. As a counter-balance, the effect on private consumption growth would be negligible.

Keywords: recession, growth, general government, productivity, pension reform