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2018 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011

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EXECUTIVE SUMMARY

The positive economic outlook paves the way for further reforms which could lift Finland's growth potential and improve resilience. Economic activity is expanding owing to external demand and improved cost competitiveness as well as increasing investment. Despite the recently adopted measures, the recovery in the labour market could be hampered by skills shortages and low labour market participation. A higher employment rate and cost efficient public services are key issues to securing the long-run sustainability of public finances and the welfare system. Addressing these challenges would improve the resilience of the economy. ([1])

Finland is emerging from a protracted crisis. The country exited from economic recession in 2016 as real GDP expanded robustly and in 2017 economic activity is expected to have increased even more. In 2016, the expansion was quick-started by increasing investment, initially construction, supported by cheap borrowing for households and recovering profits for enterprises. In 2017, higher demand from abroad led to a vibrant revival in exports and strong equipment investment. The current account was moving close to balance and is set to reach positive territory this year. After a long stagnation, labour productivity started to improve, while enterprises consolidated profits. At the same time, labour participation increased, and unemployment declined only modestly.

Despite the recent upturn, the economy is still affected by the legacy of the double-dip recession. Overall economic activity is poised to pass its previous peak level of 2008 only in 2018 — four years after the EU as a whole. Employment is still below pre-crisis levels, while unemployment is still higher. Labour productivity declined in Finland between 2008 and 2016, while in the EU as a whole it increased. The volume of Finland's exports of goods and services was 10% lower than in 2008, while total EU exports increased by a quarter in the same period. Potential growth has recently accelerated but is not expected to return to pre-crisis growth rates in the medium term.

Equipment investment has picked up, but investment in R&D and intangible assets is lagging behind. Equipment investment rebounded in early 2017, as capacity utilisation increased, supported by the recovery in external demand, but remained one of the lowest in the EU as a share of GDP. After several years of decline, investment in R&D and intangible assets was close to the EU average, but, in 2017, started expanding again. The electronics sector is expected to record positive operating results for the first time since the start of the recession, creating scope for new investment in intangible assets. Finland's stock of inward FDI remains low among the EU Member States, but recent developments in greenfield investment are encouraging and the business environment is generally good.

Finland's cost competitiveness is recovering, but non-cost competitiveness is a concern. In the late 2000s, cost competitiveness deteriorated as a result of high wage increases. Cost competitiveness relative to the rest of the euro area has improved since 2016, thanks to the Competitiveness Pact agreed in tripartite social dialogue. The wage deals which have been concluded for the next two years are quite moderate. With respect to non-cost competitiveness, Finland experienced a shift in specialisation from higher value added goods towards intermediate goods after the setback of its electronics sector. Exports of services have become increasingly high-tech and are expanding.

The labour market is gradually recovering. More people have moved into the labour force, as confidence about the economy increased. However, this has not yet translated into strong employment growth. Structural unemployment remains high, which could reflect low incentives to accept work, lack of targeted and sufficient activation measures, skills shortages and lack of affordable housing in the growth centres. However, on the back of the positive economic outlook and reforms implemented recently, employment growth is expected to accelerate in 2018.

The overall private debt burden is unwinding and the public sector has started to reduce its

([1]) This report assesses Finland's economy in the light of the Commission's 2018 Annual Growth Survey published on 22 November 2017. In the Survey, the Commission calls on EU Member States to implement structural reforms to make the European economy more productive, resilient and inclusive. In so doing, Member States should focus their efforts on the three elements of the virtuous triangle of economic policy — boosting investment, pursuing structural reforms and ensuring responsible fiscal policies.

debt. Owing to continued consolidation efforts, the public deficit is expected to remain below 3 % of GDP in the near future. After a peak at 63.6 % of GDP in 2015, the gross public debt ratio has been on a decreasing path and is expected to fall below 62 % of GDP in 2019. The ratio of the private debt stock to GDP decreased in 2016. However, unlike the non-financial corporations' debt, the household debt has been moderately on the rise and the household saving rate is expected to remain exceptionally low. The Finnish Financial Supervisory Authority has adopted measures to contain the high indebtedness of households.

The banking sector remains sound overall, but structural weaknesses persist. Finnish lenders remain profitable, well capitalised and have a high loss absorption capacity. However, the risk weight for mortgages in capital ratios calculation was fairly low. Also, banks rely heavily on wholesale funding. The Finnish Financial Supervisory Authority has recently targeted these risks. The Parliament has strengthened macro-prudential supervision also by adding a Systemic Risk Buffer to the existing toolkit. Nevertheless, the banking sector remains rather concentrated and refinancing risks persist.

Overall, Finland has made some ([2]) progress in addressing the 2017 country-specific recommendations. Recent measures to reform unemployment benefits have already resulted in greater incentives to accept work, though challenges persist. Action has also been taken to facilitate (self-) employment and regional mobility. Wage negotiations for 2018 and beyond are ongoing and so far the outcomes are in line with productivity developments. The bill for social and healthcare services reform is expected to be approved by Parliament in spring 2018 so that the reform would enter into force in 2020. Furthermore, Finland has also made progress in other areas covered by the 2017 recommendations, including on reducing the administrative burden; improving the regulatory framework; increasing competition in services; and promoting investment.

As for progress in reaching the national targets under the Europe 2020 strategy, developments in 2017 were generally positive. Regarding the employment rate of 20-64 year-olds, Finland's goal is 78 % while in 2016 the rate stood at 74 %, improving from previous years. The poverty rate is low compared to the EU average and has been gradually decreasing recently. The early school leaving rate fell slightly below the target of 8 % for the first time in 2016 while Finland's tertiary educational attainment rate stayed above the target. The very ambitious R&D investment target of 4 % of GDP is likely to be missed, as R&D investment has decreased in recent years, standing at 2.8 % in 2016. Finland is broadly on track to reach its climate and energy targets.

Finland performs relatively well on the indicators of the Social Scoreboard supporting the European Pillar of Social Rights. Finland displays low levels of income inequality and few people at risk of poverty or social exclusion. It is recognised for its high quality and inclusive education system. A reform of the social and health care system is being prepared. This reform could have the potential to address the high self-declared unmet need for medical care.

The main findings of the analysis in this report, and the related policy challenges, are as follows:

- **The public debt-to-GDP ratio is projected to start increasing again in the early 2020s.** The age-related healthcare and long-term care services expenditure are expected to expand with a knock-on effect on public finances. An overhaul of the services accompanied by a reform of the local and regional administration, currently in the Parliament, is yet to be adopted. The reform aims at increasing the role of the private sector in the provision of social and healthcare services. Cost savings are expected through increased competition and better integrated service provision. The reform has the potential to increase productivity of social and healthcare services and therefore lower the expenditure pressure. However, despite the planned savings, the cost pressure from population ageing keeps medium-term debt projections on an increasing path.

- **Despite a recent increase, the employment rate at 69.7% of 15-64 year-olds remains low when compared to Finland's Nordic peers.**

([2]) Information on the level of progress and actions taken to address the policy advice in each respective subpart of a CSR is presented in the overview table in the Annex.

For some unemployed or people outside the labour force, particularly among those aged 25-49, taking up work is still not financially rewarding enough despite the action already taken. The efficiency of some of the activation measures are hampered by a lack of service integration. Another challenge is to ensure the long-term integration of refugees and other migrants in the Finnish labour market and society.

- **Wage setting practices are changing, and it is not yet known how the new model will keep wages and productivity aligned.** Cumulated losses of cost competitiveness have almost been compensated following years of wage moderation. Wage setting appears to move away from the centralised agreements made in 2013 and 2016 towards sectoral and local level bargaining. It has given some first positive results. Under the latest wage agreements, organized employers have more opportunities to carry out local bargaining while for non-organised employers some obstacles persist. However, it is yet to be seen whether a coordinated model will emerge, whereby the non-tradable sector follows the tradable one in keeping wages aligned with productivity and thus ensuring cost competitiveness as well as optimal employment outcomes.

- **The debt level of households remains high and rising.** Gross household saving rates are at half the level prevailing in the euro area as a whole and active debt reduction is not taking place. Several measures have been introduced to strengthen the stability of the financial sector and promote sustainable household lending. Despite the measures, and amid low interest rates, a significant decline in households' indebtedness in the coming years is not likely.

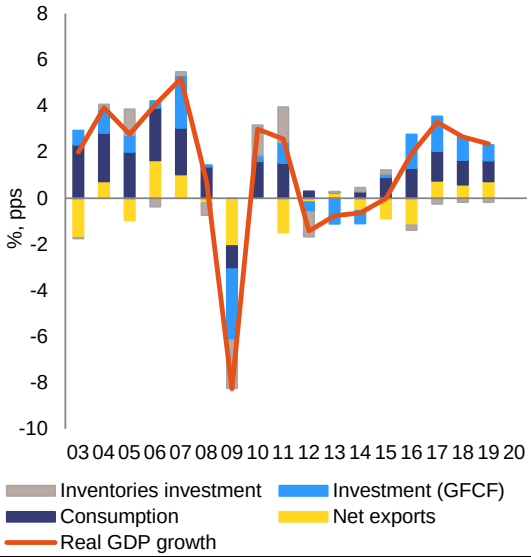
- **The expected move of Nordea's headquarters to Finland by end-2018 would significantly increase the size of the banking sector.** Following the expected relocation, the total assets of the country's banking sector are expected to reach about 420% of GDP and the deposit base is expected to expand from EUR 50 billion to EUR 140 billion. Due to strong regional interconnections with other Nordic and Baltic countries, this calls for reinforced supervision and strong regional supervisory cooperation. The Finnish Deposit Guarantee Fund will become responsible for deposits also at Nordea's foreign branches.

1. ECONOMIC SITUATION AND OUTLOOK

GDP growth

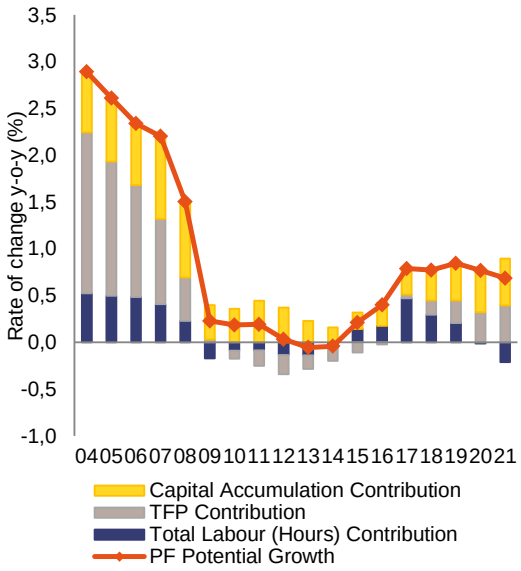
Finland's economic growth accelerated in 2017, confirming the brisk recovery of 2016 (Graph 1.1). In 2016, the economy grew by 1.9 %. In 2017 the Commission expects GDP growth to have accelerated to 3.3 %, supported by an upswing in exports and sustained growth in investment, especially in equipment. Investment growth is supported by favourable financing conditions and above-average business confidence. Private consumption growth remained positive, supported by high consumer confidence and improved employment prospects. The economy is projected to continue expanding by 2.8 % and 2.5 % in 2018 and 2019 respectively. Domestic demand is expected to remain the main growth driver. The contribution from net exports to growth will remain positive, as external demand continues to expand and Finland benefits from its recovered cost competitiveness.

Graph 1.1: **External and domestic demand — Contribution to growth — Finland**



Source: European Commission (autumn forecast 2017)

Graph 1.2: **Contributions to potential growth — Finland**



TFP: total factor productivity
PF potential growth: production function potential growth
Source: European Commission — Directorate-General for Economic and Financial Affairs

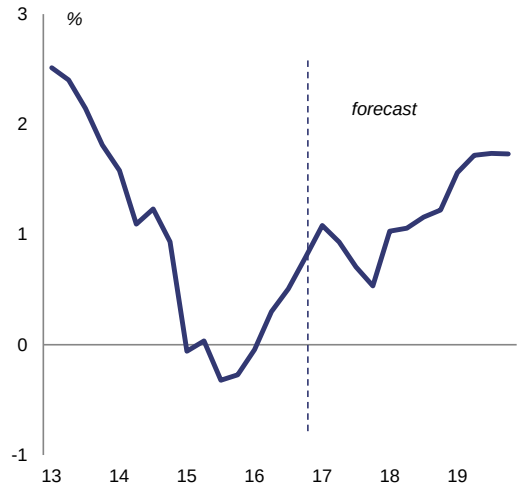
Potential GDP growth

Potential growth has accelerated recently but is not expected to return to pre-crisis growth rates in the medium term (see Graph 1.2). The crisis years and the setback faced by the electronics sector have considerably reduced the expected contribution of total factor productivity ([3]) to potential growth in the years to come. The low resilience to shocks in the recent past can partly be attributed to (i) the then relatively rigid labour market practices, although changes are under way (see Section 3.3); and (ii) limited diversification in higher-tech products (see Section 3.4). In the years to come, the decrease in the size of the country's workforce is expected to keep growth potential rather low, despite longer working hours and higher employment in 2018 and 2019. Contributions from capital and total factor productivity are projected to compensate partly for the loss in numbers of workers, as recovering external demand and higher cost competitiveness are leading Finland to higher capacity utilisation, higher investment and further positive developments in total factor productivity.

([3]) Total factor productivity captures the economic efficiency in the combination of production factors and relates to investment in intangibles.

However, Finland is performing less well than its EU peers in most categories of investment (share of investment in GDP). The one exception is construction, which is the least productive category. This is particularly true for intellectual property investment, which had constantly declined since end-2014, even though it started expanding again in 2017. At the same time, businesses are continuing to build up sizeable precautionary financial buffers, which may act as a brake on further investment. The economy risks therefore being trapped on a rather low-growth path (see Sections 3.4 and 3.5).

Graph 1.3: **Quarterly harmonised index of consumer prices, Finland, year-on-year %-change**



Source: European Commission

Inflation

Inflation is expected to remain moderate. In 2016, inflation recovered from its negative levels of 2015 (see Graph 1.3) and reached 0.8 % in 2017. Looking forward, it is set to increase only slowly in a context of higher price competition on the retail market and modest increases in housing expenses and fuel prices. Nevertheless, higher services prices, a strengthening US dollar and the low, but rising, interest rate are expected to pull inflation slightly upwards to around 1.4 % in 2018 and 1.6 % in 2019.

Labour market

Employment reverted to growth, supported by increased demand, rising investment and export growth. However, it still responded rather slowly to cyclical upswings. After several years of negative developments, in 2016 and 2017 employment grew by 0.5 % and is projected to continue to grow in 2018 and 2019. However, the unemployment rate only fell by 0.2 pps year-on-year to 8.7 % in 2017, as labour supply increased, with more previously inactive people actively looking for employment. In line with these developments, the employment rate (20-64) increased from 72.9 % in 2015 to 74 % in 2017. Nevertheless, skills shortages on the labour market, already visible for some sectors, are expected to intensify, with businesses reporting greater difficulties in filling vacancies for certain types of occupations, mainly in construction, health and specific niches of the ICT sector ([4]). The recent positions of the Beveridge curve ([5]) highlight difficulties in matching the unemployed to job vacancies (see Section 3.3). Similarly, high structural unemployment (around 7.3 % in 2017) suggests that the labour market is still some distance away from being flexible and efficient. Possible reasons for this include low incentives to accept work. Also, the long distances and lack of low-cost housing in the growth centres of Finland contribute to labour rigidity (IMF, 2017a and 2017b).

Social developments

Like its Nordic peers, Finland has one of the lowest levels of income inequality in the EU. The richest 20 % of the population had 3.6 times the income of the poorest 20 % in 2016, compared with 5.2 times in the whole EU ([6]). Owing to the redistribution of incomes via taxes and benefits, income equality has remained stable in Finland in recent years. Finland's ranking among the EU

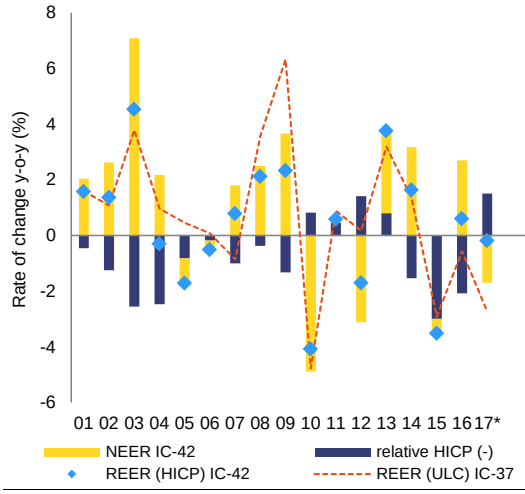
([4]) Skills shortages in these sectors have been rather recurrent in recent years. However, the flow of migrant workers from neighbouring Estonia into such sectors appears to be drying up, as workers there are now enjoying rapidly improving economic conditions and rising wages.

([5]) The Beveridge curve is a graphical representation of the relationship between unemployment and the job vacancy rate (the number of unfilled jobs expressed as a proportion of the labour force).

([6]) The S80/S20 income quintile share ratio refers to the ratio of total equivalised disposable income received by the 20 % of the country's population with the highest equivalised disposable income (top quintile) to that received by the 20 % of the country's population with the lowest equivalised disposable income (lowest quintile).

countries in terms of market income has deteriorated slightly since 2010.

Graph 1.4: **Breakdown of real effective exchange rate (REER), nominal effective exchange rate (NEER), relative harmonised index of consumer prices (HICP) — Finland**



(1) IC-42: with 42 industrial countries; IC-37: with 37 industrial countries

Source: European Commission

The risk of poverty has continued to decline since its peak in 2011, but inequality in access to healthcare remains a challenge. The latest information ([7]) on poverty and income inequality indicates that for Finland no significant changes are expected in the at-risk-of-poverty rate for income reference year 2016. In 2016, the at-risk-of-poverty rate after social transfers or pensions was among the lowest in the EU at 11.6%, about 5.5 pps lower than the EU average. However, the economic downturn has led to an increase in the inactive population and long-term unemployed. In addition, the the situation has been worsening in terms of self-reported unmet needs in medical care, in particular for low socio-economic groups (see Box 3.3.1).

([7]) In order to monitor in a timelier manner the effectiveness of social policies in the Member States, Eurostat, on the basis of statistical and econometric models, has produced experimental flash estimates for income reference year 2016 These complement the EU-SILC data and can be used in preliminary analysis until the final EU-SILC data becomes available. As any estimate, these flash estimates should be interpreted with caution – their accuracy depends on various factors therefore they cannot be expected to match perfectly EU-SILC 2017 results.

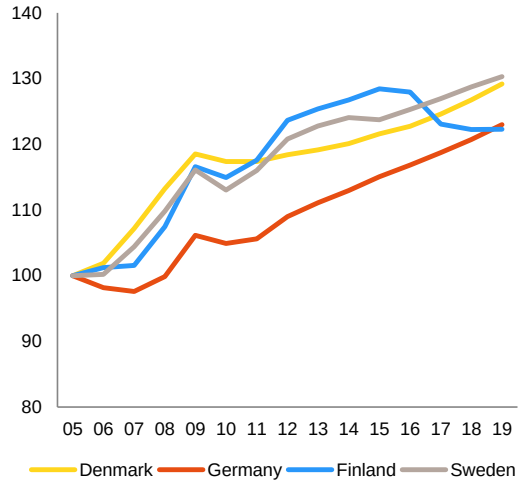
Competitiveness

In recent years, moderate labour cost increases have markedly improved cost competitiveness, but non-cost competitiveness has deteriorated (see Section 3.4). Since 2015, the country's real effective exchange rate has fallen each year, reflecting the moderate wage increases reached in the 2013 wage settlement (see Graphs 1.4 and 1.5). In 2016 and 2017, the Competitiveness Pact enabled unit labour cost to decrease (see Graphs 1.5 and 3.4.3). In 2017, productivity was higher than in the year before. As compensation of employees ([8]) was stable, nominal unit labour costs declined by 1.6 %, considerably more than in other euro area economies. The positive trend is expected to continue in 2018 and 2019 ([9]). Overall, this has resulted in improved cost competitiveness, while the long-term decline in the market share of exports has come to an end (see Graph 1.6). At the same time, following the setback experienced by its electronics sector, Finland has experienced a rapid shift in specialisation towards intermediate goods and from high-tech industries towards medium-tech. This implies that having competitive cost structures is more important than previously for Finnish firms. This resulted also in negative or stagnating productivity growth, which remains the main challenge for competitiveness. The small number of exporting SMEs is another challenge.

([8]) Compensation of employees consists of wages and salaries, and of employers' social contributions.

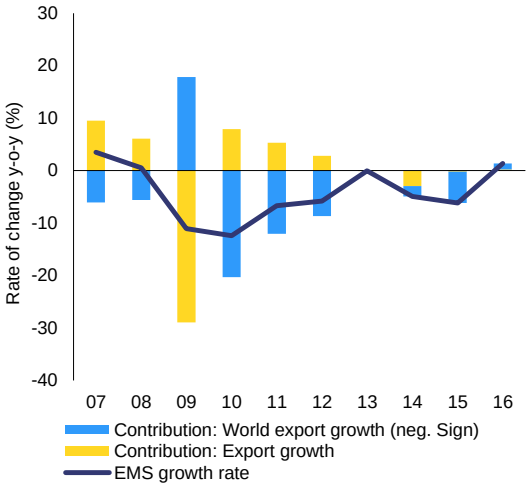
([9]) In late 2017, the real effective exchange rate was between 0 and 5% above the level consistent with macroeconomic fundamentals (supply, demand, growth, inflation, unemployment, fiscal & monetary policies) (IMF, 2017).

Graph 1.5: **Nominal unit labour costs in total economy — Denmark, Germany, Finland and Sweden (2005 = 100)**



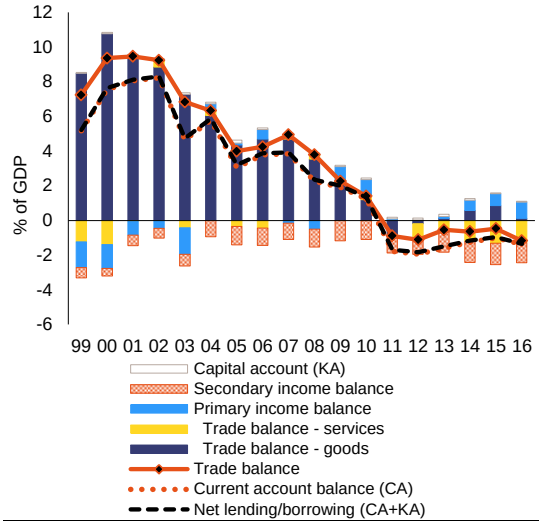
Source: European Commission

Graph 1.6: **Export market shares (EMS) of goods and services — Finland**



Source: European Commission

Graph 1.7: **Breakdown of external position (current and capital accounts) — Finland (to be updated)**



Source: European Commission

Current account

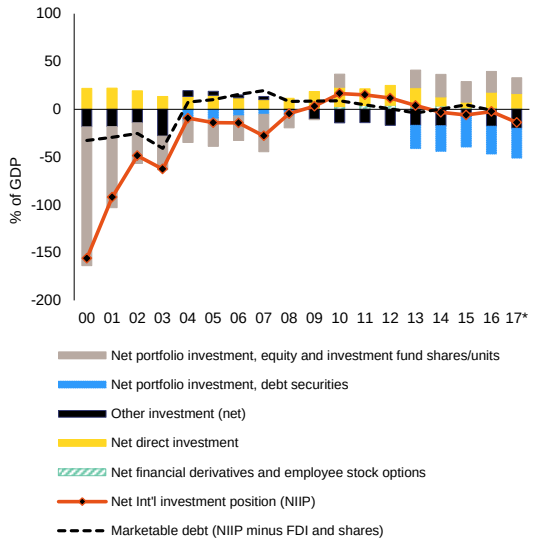
Finland's current account deficit narrowed in 2017. The strengthening of external demand and decline in the country's unit labour costs since 2015 (see Graph 1.4) has enabled the trade balance to revert to surpluses in 2017. The latter remained, however, largely below those registered before the financial crisis and the 2008-2009 crisis in the electronics sector. In 2017, however, the recovery in exports was broad-based, benefiting sectors such as metal production, petroleum, chemicals, machinery and equipment. In parallel, high equity investment returns and low interest payments kept primary income in surplus. Secondary income balance (contributions to EU — 0.19 % of GDP in 2015, overseas development and military aid) remained largely negative (see Graph 1.7). As a result, in 2017 the current account remained in deficit, but was expected to narrow to 0.2 % of GDP. The current account balance is expected to revert to positive values in 2019 and to consolidate in 2019, as the external balance of goods and services turns increasingly positive.

Overall external position

The net international investment position (NIIP) was stable and expected to remain close to balance in 2018-2019. After a few years in which the NIIP deteriorated somewhat on the back of depreciating assets held abroad (valuation effects), it improved from -6.1 % of GDP in 2015 to -2.3 % in 2016 as net foreign direct investment strengthened. However, in 2017, with net borrowing expanding and lower net investment,

the NIIP was expected to deteriorate again, but to remain very low in an EU comparison (see Graph 1.8). Higher borrowing and lower investment abroad are consistent with the present recovery and the higher investment levels currently registered in the country. Despite the expected improvement in the current account balance, the NIIP is expected to remain in deficit in 2018-2019 at around -5 % of GDP.

Graph 1.8: **Breakdown of the international investment position (NIIP) in % of GDP — Finland**



Source: European Commission

Financial sector

High private-sector debt creates vulnerabilities, but the financial sector remains stable and strong. In 2016, loan flows to households started expanding again. Also, the gross household saving rate is low and active debt reduction is not taking place. Furthermore, the share of new mortgages with variable rates is high. Fiscal and prudential measures are being applied, namely phasing out the tax deductibility of mortgage interest payments, introducing a maximum loan-to-value ratio for new mortgages, and having a minimum risk-weight level of 15 % for the average risk weight on mortgage loans to credit institutions. However, amid persistently low interest rates, a significant decrease in households' indebtedness is not likely. Banks appear well capitalised and profitable despite the currently low interest rate margins (see Section 3.2). The high reliance of banks on wholesale funding is a structural vulnerability.

Housing market

After negative growth in 2014-2015, real house prices remained broadly stable in 2016, but housing cycle developments suggest that prices are bottoming out. The nominal and deflated house price indices do not show clear signs of increases yet, and house prices relative to rent levels and relative to income are still on a declining trend. Nevertheless, developments in prices point to an upward trend in recent quarters, despite the sizeable number of dwellings completed and the rising number of building permits granted. This is particularly true for the Helsinki metropolitan area.

Public finances

The government has consolidated public finances mainly through expenditure cuts, while the improved economic outlook helps to reduce debt. The current government agreed in 2015 on a consolidation plan aiming for expenditure savings of about EUR 4 billion or 2 % of GDP by 2019. The cuts in the taxation of personal income in 2016 and 2017 have mitigated the impact of the expenditure-side measures, but all in all, consolidation has improved the general government balance. Expanding employment and higher economic activity are set to improve public finances further. With the agreed fiscal measures, the general government balance is projected to improve further, to 0.8 % of GDP in 2019.

The general government debt-to-GDP ratio peaked in 2015 and is expected to continue to decrease in the short run but to start increasing again in the medium term. The Commission projects the debt ratio to start increasing and reach about 68 % of GDP by 2028. This points to high fiscal sustainability risks over the medium term. The main driver for higher debt is the increase in age-related costs, in particular healthcare and long-term care expenditure. Therefore the reforms to improve productivity in the provision of these services are important. However, the implementation of the planned social and healthcare reform is surrounded by risks that could cause further delays.

Table 1.1: **Key economic, financial and social indicators - Finland**

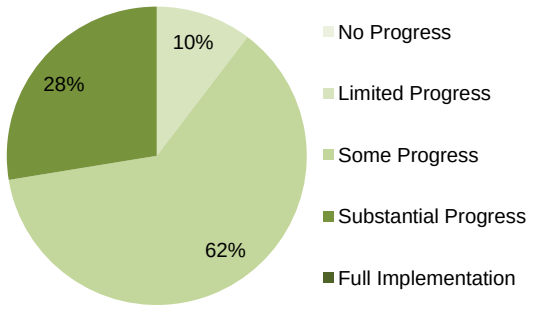
						forecast		
	2004-07	2008-12	2013-14	2015	2016	2017	2018	2019
Real GDP (y-o-y)	4.0	-0.8	-0.7	0.0	1.9	3.3	2.8	2.5
Potential growth (y-o-y)	2.5	0.4	0.0	0.4	0.8	1.5	1.6	1.6
Private consumption (y-o-y)	3.6	1.1	0.2	1.7	1.8	.	.	.
Public consumption (y-o-y)	1.5	0.7	0.3	0.0	1.2	.	.	.
Gross fixed capital formation (y-o-y)	4.7	-2.0	-3.8	0.7	7.2	.	.	.
Exports of goods and services (y-o-y)	8.7	-1.4	-0.8	0.8	1.3	.	.	.
Imports of goods and services (y-o-y)	8.3	0.6	-0.4	3.2	4.4	.	.	.
Contribution to GDP growth:								
Domestic demand (y-o-y)	3.2	0.3	-0.7	1.1	2.8	.	.	.
Inventories (y-o-y)	0.3	-0.2	0.1	0.2	-0.2	.	.	.
Net exports (y-o-y)	0.6	-0.8	-0.1	-0.9	-1.2	.	.	.
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.5	-0.1	-0.1	0.1	0.3	0.6	0.5	0.4
Capital accumulation (y-o-y)	0.7	0.5	0.2	0.2	0.3	0.5	0.6	0.6
Total factor productivity (y-o-y)	1.3	0.0	-0.1	0.0	0.2	0.4	0.5	0.6
Output gap	1.4	-1.2	-2.8	-3.5	-2.4	-0.7	0.4	1.1
Unemployment rate	8.0	7.7	8.5	9.4	8.8	8.6	8.3	8.0
GDP deflator (y-o-y)	1.3	2.2	2.1	2.0	0.9	0.5	1.7	1.7
Harmonised index of consumer prices (HICP, y-o-y)	0.9	2.7	1.7	-0.2	0.4	0.8	1.4	1.6
Nominal compensation per employee (y-o-y)	3.4	3.0	1.2	1.4	1.0	-1.1	1.3	1.7
Labour productivity (real, person employed, y-o-y)	2.4	-1.0	-0.1	0.1	1.4	.	.	.
Unit labour costs (ULC, whole economy, y-o-y)	1.0	4.0	1.3	1.3	-0.4	-3.8	-0.7	0.1
Real unit labour costs (y-o-y)	-0.3	1.8	-0.8	-0.7	-1.3	-4.3	-2.4	-1.6
Real effective exchange rate (ULC, y-o-y)	0.2	1.2	2.3	-2.5	-1.0	-3.5	0.0	-1.8
Real effective exchange rate (HICP, y-o-y)	-1.4	-0.8	2.6	-2.9	1.3	-1.2	2.0	.
Savings rate of households (net saving as percentage of net disposable income)	0.8	1.7	0.7	-0.5	-1.7	.	.	.
Private credit flow, consolidated (% of GDP)	10.3	7.2	2.2	6.9	2.2	.	.	.
Private sector debt, consolidated (% of GDP)	116.6	143.7	148.7	152.9	149.3	.	.	.
of which household debt, consolidated (% of GDP)	47.3	59.6	64.7	66.7	67.1	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	69.3	84.0	84.0	86.2	82.2	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	0.6	0.9	1.1	1.3	1.3	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	3.8	3.2	3.1	3.9	3.7	4.0	4.5	4.6
Corporations, gross operating surplus (% of GDP)	27.3	23.8	21.6	22.5	22.6	24.6	26.0	27.0
Households, net lending (+) or net borrowing (-) (% of GDP)	-2.9	-1.7	-1.7	-2.0	-3.3	-3.6	-3.6	-3.4
Deflated house price index (y-o-y)	6.0	0.3	-1.5	-0.3	-0.3	.	.	.
Residential investment (% of GDP)	6.4	6.0	5.8	5.6	6.1	.	.	.
Current account balance (% of GDP), balance of payments	4.1	0.3	-1.4	-1.0	-1.4	-1.1	-0.3	0.4
Trade balance (% of GDP), balance of payments	4.9	1.1	-0.6	-0.5	-1.2	.	.	.
Terms of trade of goods and services (y-o-y)	-2.2	-1.1	1.0	3.4	1.0	-1.2	0.6	0.0
Capital account balance (% of GDP)	0.1	0.1	0.1	0.0	0.0	.	.	.
Net international investment position (% of GDP)	-16.4	8.4	0.3	-6.1	-2.3	.	.	.
Net marketable external debt (% of GDP) (1)	13.2	8.6	-1.8	4.7	-0.9	.	.	.
Gross marketable external debt (% of GDP) (1)	117.6	225.9	248.9	243.8	231.1	.	.	.
Export performance vs. advanced countries (% change over 5 years)	3.9	-10.4	-23.5	-20.0	-16.5	.	.	.
Export market share, goods and services (y-o-y)	-1.1	-7.2	-2.3	-6.1	1.9	.	.	.
Net FDI flows (% of GDP)	-1.4	1.8	-3.6	-8.3	9.2	.	.	.
General government balance (% of GDP)	3.5	-0.8	-2.9	-2.7	-1.7	-1.4	-1.2	-0.8
Structural budget balance (% of GDP)	.	-1.0	-1.3	-0.7	-0.4	-1.0	-1.4	-1.4
General government gross debt (% of GDP)	38.7	44.8	58.3	63.6	63.1	62.7	62.1	61.6
Tax-to-GDP ratio (%)	42.0	41.7	43.8	44.1	44.3	43.1	41.9	41.3
Tax rate for a single person earning the average wage (%)	30.9	29.6	30.4	30.9	30.8	.	.	.
Tax rate for a single person earning 50% of the average wage (%)	20.1	18.6	19.0	19.3	18.7	.	.	.

(1) NIIP excluding direct investment and portfolio equity shares
(2) domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
Source: Eurostat and ECB as of 30 Jan 2018, where available; European Commission for forecast figures (Winter forecast 2018 for real GDP and HICP, Autumn forecast 2017 otherwise)

2. PROGRESS WITH COUNTRY-SPECIFIC RECOMMENDATIONS

Progress with implementing the Council recommendations addressed to Finland in 2017 ([10]) has to be seen as part of a process which started with the introduction of the European Semester process in 2011. Looking at the multi-annual assessment of the implementation of the CSRs since these were adopted, 90 % of all the CSRs addressed to Finland recorded at least 'some progress'. 10 % of these CSRs recorded limited progress, but none of them recorded "no progress" (Graph 2.1). Over the past years, Finland has been addressing the challenges in the area of the long-run sustainability of public finances by adopting a pension reform that came into force in 2017. External sector challenges have abated and cost competitiveness has improved, in particular owing to the measures in the Competitiveness Pact of 2016. Finland has also taken action to increase incentives to accept work and to strengthen active labour market policies.

Graph 2.1: **Overall multiannual implementation of 2011-2017 CSRs to date**



Notes: The overall assessment of the country-specific recommendations related to fiscal policy excludes compliance with the Stability and Growth Pact.
2011-2012: Different CSR assessment categories.
The multiannual CSR assessment looks at the implementation since the CSRs were first adopted until the 2018 Country Report.
Source: European Commission

Finland has been given recommendations to improve the long-run sustainability of public finances. In particular, the challenges for Finland have been the sustainability of the pension system and increasing expenditure on long-term healthcare given the aging population. On the one hand, the reform of the earnings related pension system, which linked statutory retirement age to life expectancy, was legislated in late 2015. In accordance with the reform, the lowest statutory retirement age has gradually started to rise as of 2018 from 63 to 65. This should consequently raise the actual retirement age, which was 61.1 in 2016, towards the target of 62.5 years. On the other hand, efforts to improve cost-efficiency of the provision of public healthcare services are still ongoing.

The gradual improvement of cost competitiveness has been supported by the implementation of the CSRs since 2014. Progress has been made in aligning wage growth with productivity developments which has resulted in a slower increase of unit labour costs and improved cost competitiveness relative to competitor economies. In 2016 the social partners agreed on measures that would reduce labour costs further in 2017. This so-called Competitiveness Pact increased annual working time without additional compensation, included a wage freeze of 12 months and shifted social security contributions partly towards the employees. In addition, policy action to boost non-cost competitiveness, such as export and investment promotion under *Team Finland*, has been taken.

Reforms in the labour market have been advanced. In order to increase incentives to work, the earnings-related unemployment insurance has been shortened. Also several measures to activate unemployed job seekers, such as increasing the conditionality of the benefits, have been introduced. Measures to increase entrepreneurship were also introduced.

Several measures to improve the functioning of the services market have also been implemented. The rules governing retail trade establishment, including local and regional planning and zoning, have been amended. Opening hours of retail outlets were liberalised. Taxi services regulation has been streamlined and modernised, and a regulatory framework for collaborative economy service providers is in place.

([10]) For the assessment of other reforms implemented in the past, see in particular Section 3.

Table 2.1: **Progress with Council's Country Specific Recommendations**

Finland	**Overall assessment of progress with 2017 CSRs: Some progress**
CSR 1: *Pursue its fiscal policy in line with the requirements of the preventive arm of the Stability and Growth Pact, which entails achieving its medium-term budgetary objective in 2018, taking into account the allowances linked to unusual events, the implementation of the structural reforms and investments for which a temporary deviation is granted.* *Ensure timely adoption and implementation of the administrative reform to improve cost-effectiveness of social and healthcare services.*	Finland has made **limited progress** in addressing the fiscal-structural part of CSR 1 ([1]): • The government has presented the majority of the reform bills in Parliament, but the formal adoption of the reform has not taken place yet. • The effective implementation of the reform has been delayed by one year (January 2020). • In other areas of the reform, the government has advanced development of ICT systems which are thought to enable more efficient provision of services.
CSR 2: *Promote the further alignment of wages with productivity developments, fully respecting the role of social partners.* *Take targeted active labour market policy measures to address employment and social challenges,* *provide incentives to accept work and* *promote entrepreneurship.*	Finland has made **some progress** in addressing CSR 2: • Some progress has been made in promoting cost competitiveness during the labour market negotiations. • Some progress has been made in addressing the employment and social challenges. • Some progress was made in providing incentives to accept work. • Some progress was also made in promoting entrepreneurship.
CSR 3: *Continue to improve the regulatory framework and reduce the administrative burden* *to increase competition in services and* *to promote investment.*	Finland has made **substantial progress** in addressing CSR 3: • Substantial progress has been made regarding administrative burden reduction and regulatory framework improvements. • Substantial progress has been made regarding competition in services. • Some progress has been made on the promotion of investment.

(1) This does not include an assessment of compliance with the Stability and Growth Pact.
Source: European Commission

To address the Council recommendations 2017, Finland has taken measures in several policy areas. To improve the long-run sustainability of public finances, work to reform the social and healthcare services continued in 2017 as Parliament started to discuss the reform bills. However, formal adoption is expected in 2018. If legislated, the reform moves into the implementation phase and temporary administration of future counties is expected to start working in July 2018.

On addressing labour market and social challenges, new measures to activate jobseekers and to introduce incentives to work have been introduced as of 2018: a wider scope of the mobility allowance, financial sanctions for jobseekers who do not demonstrate "being active". Childcare fees were lowered for low and middle income families from 2018. The government has allocated more resources to the public employment service (PES) to support the above-mentioned measures and to facilitate employment in South-West Finland where shipbuilding and car assembly are experiencing labour shortages. The unemployed are now allowed to receive unemployment benefits during the first four months when starting a business. In addition, jobseekers now have the possibility of enhancing their skills during a period of six months without losing unemployment benefits and some changes have been made to the rules of housing allowance.

The wage negotiations concluded in autumn 2017 and early 2018 indicate that cost competitiveness is maintained or marginally improved in 2018. Addressing CSR 2 is in line with Recommendation 3 on the labour market for the euro area.

Substantial progress has been made in reducing the administrative burden and in improving the regulatory framework. Competition in services is expected to increase on the back of revised rules for retail establishments. The first phase of the regulation of transport services has been adopted with higher regulatory support for the collaborative economy. The government has implemented measures to promote entrepreneurship and start-ups and it has also improved the availability of loans and export guarantees for small and medium-sized enterprises which should also promote investment. The state support systems for innovations and exports are being merged for synergies. In addressing CSR 3, the Finnish authorities are also solving issues highlighted in the 2018 Recommendation 1 on the Single Market for the euro area.

ESI Funds are important in addressing key challenges to inclusive growth and convergence in Finland, notably by supporting competitiveness and boosting research and innovation, creating employment and facilitating education and training. ESI Funds also contribute to enhancing labour market access for migrants and other vulnerable groups.

Box 2.1: Tangible results delivered through EU support to structural change in Finland

Finland is a beneficiary of European Structural and Investment Funds (ESI Funds) support and can receive up to EUR 3.7 billion until 2020. This represents around 5 % of public investment ([1]) annually over the period 2014-2018. By 31 December 2017, an estimated EUR 2.1 billion (57 % of the total) was allocated to projects on the ground. Some 1 900 enterprises have been supported, with over 630 enterprises to introduce new products to the markets; 840 start-ups were supported; enterprises are supported for the creation of 8 900 new jobs; the access for over 11 000 long-term unemployed to labour market has been facilitated or they have been helped to gain a qualification; people at risk of poverty or social exclusion have been provided assistance; over 2 200 agricultural investment projects have received support, over 1.8 million ha farmland was under measures improving water protection, 2.7 million people in the countryside benefit from better infrastructures and services and over 40 broadband projects are being realised. Finland adopted a new financing instrument under ESI Funds: the SME Initiative, which started its operation in 2017. This instrument addresses the gap in SME finance opportunities and it has already provided over 240 guarantees for SME loans.

ESI Funds help address structural policy challenges and implement country-specific recommendations. The ESI Funds support competitiveness and boost research and innovation. They create employment and facilitate education and training. ESI Funds contribute to making use of the full potential of the workforce by enhancing labour market access for the unemployed and inactive as well as migrants and other vulnerable groups. Operations funded by ESI funds promote social inclusion and bring people furthest from the labour market back to activity and employment. The implementation of the youth guarantee is partly funded by the ESI Funds through one-stop guidance centres. In the area of research and innovation ESIF support has helped 900 enterprises to launch R&D&I activities with research institutes in their areas of excellence.

Reforms were undertaken already as precondition for ESI Funds support ([2]). Smart Specialisation Strategies for research and innovation were developed to focus efforts on specialisation with strong market potential. This has also helped improve cooperation between enterprises and public research institutions and encouraged regions to participate in European smart specialisation platforms.

Finland is advancing the take up of the European Fund for Strategic Investments (EFSI). As of December 2017, the overall financing volume of operations approved under the EFSI amounted to EUR 1.4 billion, which is expected to trigger total private and public investment of EUR 5.6 billion. More specifically, 26 projects involving Finland have been approved so far under the Infrastructure and Innovation Window (including 13 multi-country projects), amounting to EUR 1.3 billion in EIB financing under the EFSI. This is expected to trigger about EUR 5.2 billion in investments. Under the SME Window, two agreements with financial intermediaries have been approved so far. European Investment Fund financing enabled by the EFSI amounts to EUR 35 million, which is expected to mobilise approximatively EUR 369 million in total investment. Energy ranks first in terms of operations and volume approved, followed by RDI.

([1]) Public investment is defined as gross fixed capital formation + investment grants + national expenditure on agriculture and fisheries

([2]) Before programmes are adopted, Member States are required to comply with a number of so-called ex-ante conditionalities, which aim at improving conditions for the majority of public investments areas.

3. REFORM PRIORITIES

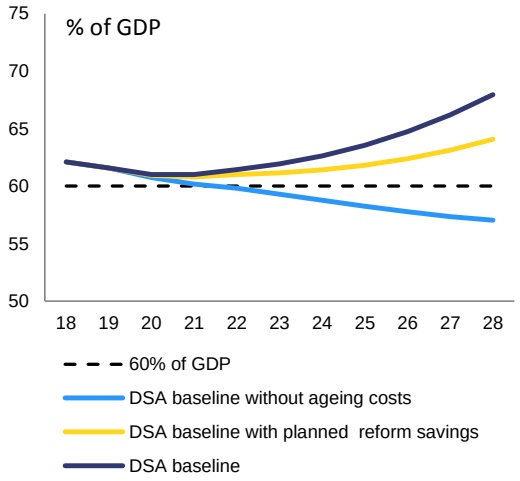
3.1. PUBLIC FINANCES AND TAXATION

3.1.1. SUSTAINABILITY OF PUBLIC FINANCES

Sustainability risks have diminished as the economic outlook has improved. In the short run, there are no fiscal or competitiveness-financial risks to the sustainability of public finances. In the long run, the risks are assessed as 'medium' as the S2 indicator ([11]) is estimated at 2.8 %. The estimate has improved by 0.4 percentage points from a year earlier, owing to an improved initial budgetary position and a more favourable estimated contribution from pension expenditure. The medium-term risk assessment has improved too. The objective of the assessment scenario is to reach a 60 % of GDP debt ratio by 2032 (taking into account the increasing costs of ageing) by adjusting the general government primary balance over 5 post-forecast years, i.e. 2020-2024. As the short-run economic outlook has improved, the estimated additional cumulative adjustment has also declined from 2.8 % to 1.5 %. However, due to the increase in the government debt ratio in the baseline projections, the overall fiscal risk in the medium-run is still assessed as 'high'.

The costs of ageing will continue to weigh on public finances in the medium term and the long run. On the basis of the Commission 2017 autumn forecast and commonly agreed assumptions on debt sustainability analysis ([12]), the debt ratio is first projected to decline to about 61 % of GDP (around 2021) and then to rise to about 68 % of GDP by 2028. If the costs of ageing (pensions, long-term care and health expenditure) were left out of the debt projections, the debt ratio would gradually decline to about 57 % of GDP by 2028 (Graph 3.1.1). Under the 2017 pension reform, the lowest old-age retirement age will gradually rise from 63 years in 2017 to 65 years in 2027. Over the same period, the upper age limit until which people can continue working will rise from 68 to 70. These changes are expected to reduce the large impact of the strongly ageing population by 2030. However, according to the Economic Policy Committee's Ageing Working Group (EPC-AWG) projections, pension and other age-related costs expenditure are expected to increase steadily through to the end of the 2020s.

Graph 3.1.1: **Debt projections according to social and healthcare reform proposals and Debt Sustainability Analysis (DSA)**



(1) Planned reform savings as projected in the government proposal.
Source: European Commission

Social and healthcare services reform and administrative reform

Finnish healthcare and social care systems perform relatively well. The health status of the population ranks in the highest third among EU countries if measured as life expectancy. Moreover, 70 % of the population report being in good health, a slightly higher percentage than the EU average (of 67 %). As for expenditure, at 9.4 % of GDP in 2015, Finland is just below the EU average of 9.9 % of GDP while per capita expenditure is slightly above the EU average.

Weaknesses stemming from decentralised primary healthcare service provision and uneven access to services are visible. The healthcare system has three parallel providers: occupational, private and public healthcare. Finland's 300+ municipalities fund and organise

([11]) S2 indicates the long-run sustainability gap and measures the required adjustment as % of GDP to balance public finances.
([12]) A mechanical projection based on the current primary balance and assumptions on nominal growth and interest rates. Subsequently an equilibrium debt level and equilibrium interest services can be calculated.

the provision of primary healthcare, and form 20 hospital districts to fund and provide (secondary) hospital care. The most demanding treatment is provided by five university hospitals. The occupational healthcare and private services exist alongside the public services. However, the system appears not to treat residents equally. First, people who are not employed have no access to the occupational healthcare system which offers quick access to primary healthcare services in private hospitals. Secondly, private clinics might require high out-of-pocket payments or private insurance, excluding lower income households. Therefore for some patients, such as most of the retirees, the public primary healthcare is the only option. Due to long waiting times ([13]), Finns, especially low-income patients, report more unmet needs of healthcare services than in the rest of the EU (see Box 3.3.1).

The parliament is expected to adopt this spring a legislative reform package for the social and healthcare services with a reform of local and regional administration. Under the reform, a new level of regional public administration, to be called counties, will be set up. The plan is that these will take care of the social and healthcare services from 2020. Responsibility for the organisation of these services, public healthcare facilities and staff would be moved to the counties. The amount municipal taxes and central government transfers to municipalities would be reduced accordingly given their reduced responsibilities. Instead, the central government would collect more taxes and finance the counties via a 'county transfer system'. In parallel, emergency services and specialised medical care are undergoing structural reform. Under this reform, the division of tasks between the hospitals at secondary and tertiary healthcare levels will be reviewed. At the secondary level, the reform will reduce the number of hospitals offering the most demanding emergency healthcare services, from 19 to 12. At the tertiary level, university hospital profiles are reviewed and some fields of medicine centralised.

The main aim of the reforms is to improve the sustainability of public finances through more cost-effective service provision. The reform pools resources that can be used more effectively at county level in future. The integration of primary and specialised healthcare as well as healthcare and social care should be more effective in the hands of a larger organiser. In addition, increased use of digital and electronic services should also increase productivity and improve cost efficiency. From 2021, social care and primary healthcare services would be available from a county or private social and health centre. This would give patients increased freedom of choice between the service providers operating in their region. The competition between service providers is expected to yield savings for the tax-payers.

Most of the measures are expected to increase productivity in healthcare services possibly reducing waiting times. However, making sure that this objective is reached will require careful monitoring in the implementation phase of the reform. The possible efficiency gains from improved integration of primary and higher level healthcare services and integration of service chains that involve both social and healthcare services could be compromised if the increased freedom to choose is not implemented carefully. This is particularly the case for the incentives to provide services also in remote areas, and also to avoid that some service providers 'cherry-pick' patients with better health status.

An effectively implemented budget framework for the counties should slow down the increase in public debt. On a projected baseline, healthcare expenditure is projected to grow by 2.4 % in real terms per year but the reform would reduce the growth rate to 0.9 %. The target for reducing expenditure growth is ambitious given Finland's past performance. Sustaining such a real growth rate for a longer period would also be an achievement (compared with the rest of the EU), but not necessarily exceptional. If taken at face value, the planned savings would result in a 3 pps lower debt-to-GDP ratio by 2028 compared to the Debt Sustainability Monitor baseline scenario (see graph 3.1.1) (European Commission 2018b). Therefore, if the reform is implemented successfully, it also has the potential to improve fiscal sustainability in the medium run. However, there is a risk that the actual savings will fall short of expectations as they seem to have been derived using a top-down approach rather than from specific efficiency-increasing actions. In addition, some municipalities in more remote areas of the country have recently become afraid of services

([13]) Other reasons could be financial or geographical barriers.

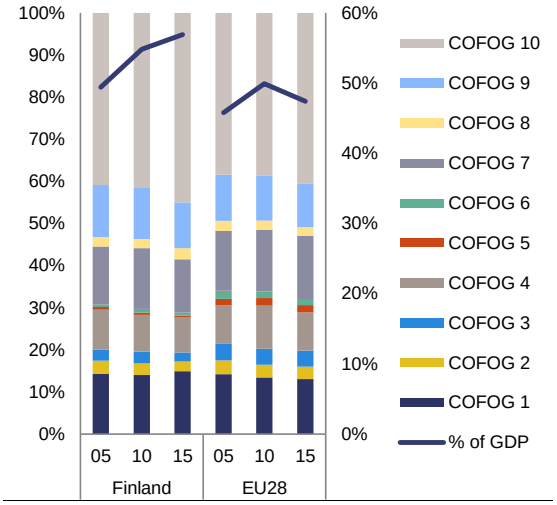
moving to a handful of central cities in the future counties. To prevent this, they have started to outsource their healthcare services to private hospitals under multiannual service contracts. These agreements could complicate the implementation of the reform.

3.1.2. QUALITY OF PUBLIC FINANCES AND TAXATION

Increased social protection expenditure has driven public expenditure in Finland to one of the highest levels in the EU and has crowded out other spending. Total government expenditure was 56.9 % of GDP in 2015, nearly 8 pps higher than 10 years earlier. About 6 pps of this increase is driven by higher social protection spending, including on old-age pensions ([14]) as the number of old-age pensioners increased by one-third from 2005 to 2015. Adequate pension insurance guarantees a decent quality of life after retirement and brings stability to households' disposable income and consumption, both of which have increased constantly since 2005. The relative shares of other government consumption categories have remained broadly stable. In 2016, the tax-burden was 44.3 % of GDP, up by 1.8 pps of GDP from 2005. Since 2009, the general government has recorded primary deficits. Consequently, Finland's gross debt-to-GDP ratio increased from 40 % in 2005 to 63.6 % in 2015.

Finland spends 50 % more than the average EU country on state aid. According to the Commission State Aid Monitor, Finland allocated about 1 % of GDP to State aid whereas the average EU Member State used 0.7 % of GDP in 2015. In a recent study by the Ministry of Economic Affairs and Employment (Rothovius 2017) the annual expenditure on business subsidies was estimated at EUR 4 billion (about 2 % of GDP). Of this expenditure about EUR 2.9 billion is granted through the tax system in the form of tax deductions, exemptions and reduced rates on specific industrial activities and fuels. Subsidies solely aimed at supporting the cost competitiveness of non-innovative, established, business structures and activities are particularly inefficient in supporting long term productivity growth. In addition, they do not contribute to economic renewal and tend to distort resource allocation (investment, finance and labour) (Maliranta et al., 2016, Rauhanen et al., 2015).

Graph 3.1.2: **General government consumption, as a share of GDP and as broken down by function, 2005, 2010, 2015, Finland and the EU**



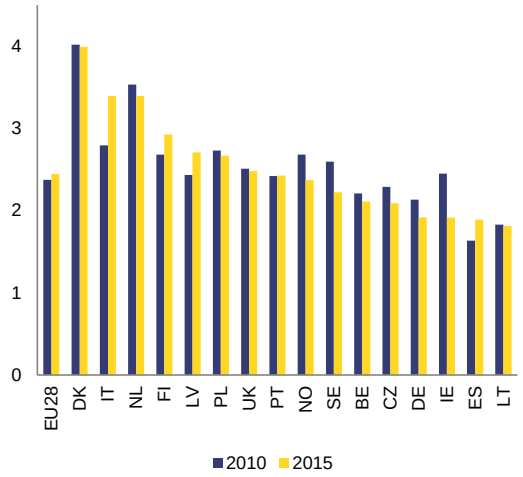
(1) The classes of the functions of government (COFOG) are 1 General public services, 2 Defence, 3 Public order and safety, 4 Economic affairs, 5 Environment protection, 6 Housing and community amenities, 7 Health, 8 Recreation, culture and religion, 9 Education and 10 Social protection.
(2) Share of GDP on the right-hand axis
Source: European Commission

Finland remains a relatively high-taxation country. In 2016, the total tax burden amounted to 44.3 % of GDP. The gradual easing of personal income taxation while increasing indirect taxation has contributed to a tax shift from labour towards other tax bases. This has improved the growth-friendliness of the tax structure. Nonetheless, the level of personal income taxation (13.3 % of GDP) remains among the highest in the EU. The high personal income taxation is accompanied by social contributions, accounting for almost 13 % of GDP in 2015 (mainly paid by the employers). These were recently driven up by increases in pension contributions. When the Finnish government presented its latest pension reform, which came into force in 2017, it was indicated that there would be no need to increase the contribution rates further to safeguard the sustainability of the earnings-related pension system. According to the

([14]) General government gross total pension expenditure was 10.7 % of GDP in 2005 and 13.1 % of GDP in 2015, with old-age pension expenditure alone increasing from 6.7 % to 10.1 % of GDP during the same period. Total old-age related social protection benefit spending increased from 8.3 % of GDP in 2005 to 12.4 % of GPD in 2015.

latest projections endorsed by the EPC-AWG, contributions to pension insurance are forecast to increase in the future to guarantee the financing of the pension system. These would push the tax burden higher.

Graph 3.1.3: **Tax revenues from environmental taxes, 2010 and 2015**



(1) Energy taxes include taxes on energy products used for both transport and stationary purposes. (2) Transport taxes include taxes related to the ownership and use of motor vehicles. They also include taxes on other transport equipment such as planes and on related transport services. (3) Pollution taxes include taxes on measured or estimated emissions to air (except taxes on carbon dioxide emissions) and water, on the management of waste and on noise. (4) Resource taxes include any taxes linked to the extraction or use of a natural resource.
Source: European Commission

Finland faces the challenge of supporting investment that meets the long-term needs of the economy. While investment levels in Finland remain slightly above the EU average, they have been declining during the past few years. The share of private investment is lower than elsewhere in the EU, on average (European Commission, 2017a). The design of the tax system can help to stimulate productive investment. However, an expert group set up by the Ministry of Finance to review the level and structure of corporate taxation, concluded in early 2017, that in international comparison the corporate tax system was competitive as it is. Substantial reform has therefore not been planned. The group proposed certain changes to the taxation of dividends (from unlisted companies) and earned income. These changes aim to increase the efficacy and neutrality of taxation, thus boosting productivity and economic growth (Järvikare et al. 2017).

While recurrent property taxation is low, environmental taxation in Finland is high compared to other EU countries and continues to increase. In 2015, at 0.8 % of GDP, revenues from recurrent immovable property taxation, one of the least distortive taxes to economic growth, were considerably below the EU average of 1.7 % of GDP. By contrast, at 2.9 % of GDP, the revenue from environmental taxation was above the EU average of 2.4 % (see graph 3.1.3). The share of environmental taxes in tax revenues has also gradually increased, while the composition has changed: taxes on CO_2 from heating, power plants and machinery gradually increased as well as the waste tax.

Fiscal framework

Finland is the only euro area country where the macroeconomic forecasts underpinning the budgetary planning are prepared by the Ministry of Finance. The management of the Economics Department of the Ministry is separated from the Budget Department and according to the law adopted in spring 2015, the Economics Department is independent in its forecasting activities. However, in the 2017 stability programme the macroeconomic projections for 2018-2020 were based on the 'development according to the targets of the government programme'. Thus, it appeared that instead of proposing concrete measures enabling the government to achieve its fiscal targets, the macroeconomic scenario underlying the stability programme was calibrated so that the government's fiscal targets were met. This raised questions about the realistic and unbiased nature of the macroeconomic scenario, and thus the compliance of the latter with the Two-Pack Regulation ([15]) to prepare medium-term fiscal plans on the basis of independent macroeconomic forecasts.

([15]) In May 2013, the Two-Pack regulations introduced common budgetary rules for euro area Member States strengthening the budgetary surveillance cycle and further improving the economic governance of the euro area.

3.2. FINANCIAL SECTOR

3.2.1. BANKING SECTOR

The financial soundness indicators show that the banking sector is overall in good condition. Finnish lenders remain remarkably well capitalised and have high loss absorption capacity. At end-2016, the average Tier 1 capital ratio ([16]) was 23.1 %, one of the highest in the EU (Table 3.2.1) and Tier-1 instruments accounted for the majority of capital. Also, the largest banks achieved good results in the 2016 European Banking Authority stress test, with resilient capital levels in both baseline and stress scenarios. Furthermore, the ratio of non-performing loans to gross loans remained low ([17]). The sector also performs generally well in terms of profitability, albeit with some variation among banks ([18]), with return on equity hovering around 9 %. In the current low interest rate environment, net interest income fell about 4 %, while the operating costs of the sector, particularly IT investments, increased. Nonetheless, the system's cost-to-income ratio remained fairly stable and well below the EU average ([19]). The banking sector is large (10 banks in total), but rather concentrated, with the three largest banks controlling a combined 72.2 % of lending and 77.7 % of deposits.

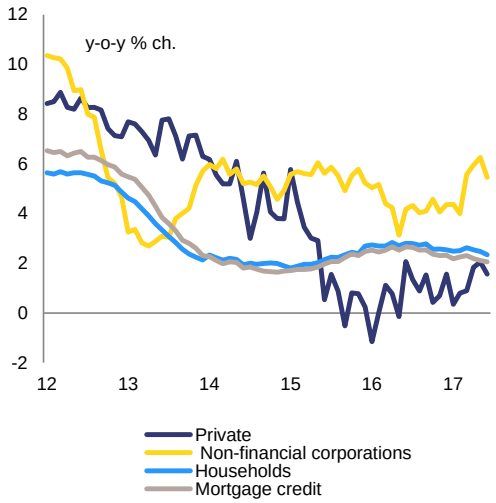
Table 3.2.1: **Financial soundness indicators, all banks in Finland**

(%)	2011	2012	2013	2014	2015	2016
Non-performing loans	0,8	0,8	0,7	1,4	1,3	1,3
Coverage ratio	-	-	-	36,0	37,9	36,3
Loan to deposit ratio*	142,3	139,9	139,2	139,6	136,7	139,1
Tier 1 ratio	13,7	16,3	15,5	16,6	22,4	23,1
Capital adequacy ratio	14,4	17,2	16,3	17,5	23,8	24,6
Return on equity	7,6	8,9	8,1	9,1	8,3	8,7
Return on assets	0,3	0,3	0,4	0,4	0,5	0,5

(*) European Central Bank aggregated balance sheet: loans excluding to government and MFI / deposits excluding from government and MFI
Source: ECB CBD

The high reliance on wholesale funding has recently been targeted by the Finnish Financial Supervisory Authority, but refinancing risks persist. The share of private-sector deposits in the domestic banking system remains low ([20]). Instead, Finnish banks rely heavily on borrowing from merchant banks, so-called wholesale funding, albeit extensively in the form of covered bonds with average maturities above one year. As a result, the banking system's loan-to-deposit ratio is rather high, at close to 140 % (2016). However, given the low interest rate environment and Finnish households' low saving rate, there is limited room to expand the deposits base. Therefore, banks maintain large portfolios of liquid assets available for sale to generate emergency cash. Also, as wholesale funding remains a volatile funding source, the Finnish Financial Supervisory Authority has recently recommended that banks extend funding maturities, reduce short-term funding and prepare adequate contingency plans. Nevertheless, many lenders remain exposed to the risk of a freeze in unsecured wholesale funding. This could still generate funding gaps in the event of major market stress.

Graph 3.2.1: **Lending to the private sector — Change in stock of loans (y-o-y)**



Source: European Central Bank

Strong interconnections with other Nordic and Baltic countries create a risk of spillover effects through the financial system (see European Commission, 2018a). Sweden faces sources of imbalances in the form of high private debt and overvalued house prices. The elevated private indebtedness, in particular of households, makes the economy vulnerable to macroeconomic shocks. In the event of a large, disorderly downturn in the housing market, there is a risk of negative spillover

([16]) The tier 1 capital ratio is the comparison between a bank's core equity capital and its total risk-weighted assets.
([17]) 1.3 % in December 2016, against 5 % on average in the EU.
([18]) In 2016, the return on equity was 8.7% against an average of 3.3 % in the EU.
([19]) 54 % in 2016 against 51 % in 2015. The EU average was 66 %.
([20]) 33 % of total liabilities, against 54 % in the euro area.

effects to other Nordic countries through the financial system, including Finland.

In September 2017, the board of Nordea took the decision to move its headquarters from Sweden to Finland by end-2018. The decision still needs to be confirmed by the bank's shareholders. While Nordea's operations in Finland are not expected to markedly change in terms of size and interconnectedness, the move will have implications for the supervisory and the resolution framework. It puts Nordea, the Nordic region's only globally systemically important bank, under the supervision of the European Central Bank (ECB) and the Single Supervisory Mechanism (SSM) and on a level playing field with its peers ([21]). For Finland, given the size of the bank, hosting Nordea's headquarters creates both opportunities and risks. Following the move, the total assets of Finland's banking sector are expected to reach about 420 % of GDP, and by assets Nordea will be the biggest company operating out of Finland. If the move of Nordea's headquarters to Finland materialises, a buffer requirement for global systematically-important institutions (G-SII) will automatically come into play. Also, a systemic risk buffer has been added to the Finnish regulator's toolbox.

3.2.2. ACCESS TO FINANCE

Credit has continued to expand modestly in Finland. Lending to the economy is on a stable upward trend, along with GDP. By September 2017 lending to firms (loans stock — moving annual average) was growing by 5.4 % year-on-year, while the mortgage loans segment kept increasing by 2.0 % year-on-year (Graph 3.2.1). Changes in loan flows to households were even stronger (6.9 % in September 2017 — moving annual average), suggesting an acceleration. These developments reflect the low interest rates and improving consumer confidence, in particular consumers' increasingly favourable view of their personal finances.

Banks play a key role in financing the economy. In general, businesses and retail clients can afford bank lending, since the banking system rapidly passes the record low interest rates on to the real economy. Large firms are able to obtain financing through equity and debt issuers, whereas bank lending is the main source of funding for small and medium-sized businesses.

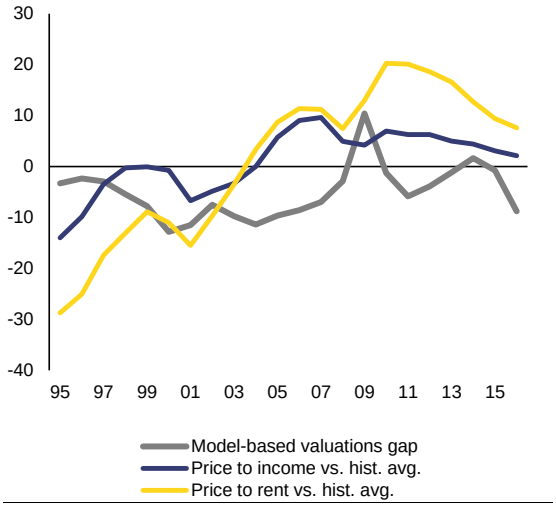
Access of SMEs to finance has remained easy compared with most other EU countries. In 2016, SMEs in Finland did not face restricted access to bank financing and obstacles to financing appeared limited. Banks appeared more willing to lend, particularly thanks to the improving general economic outlook. That said, the cost of borrowing was rising and the presence of collateral most often required. On the face of it, bank financing appeared less attractive for SMEs than other forms of financing such as crowdfunding, peer-to-peer lending or business angels funding (ECB, 2017), but more easily accessible. In 2015, the total amount of annual venture capital investments in Finnish companies was stable at 0.05 % of GDP and remained the second highest in the EU after Luxembourg (0.08 % of GDP).

3.2.3. HOUSING MARKET

Real house prices have bottomed out. Real house prices recovered slightly in the first half of 2017 (+0.8 %), after negative growth in 2015-2016 and a somewhat more rapid decline in 2013-2014. Also, the valuation gap appears to have closed (see Graph 3.2.2), even though prices in the Helsinki region continue to increase. There are no signs of a price overvaluation overall at national level.

([21]) UK banks are outside the euro area and under the supervision of the Prudential Regulation Authority, established in 2012. It is a United Kingdom financial regulatory body structured as a limited company wholly owned by the Bank of England.

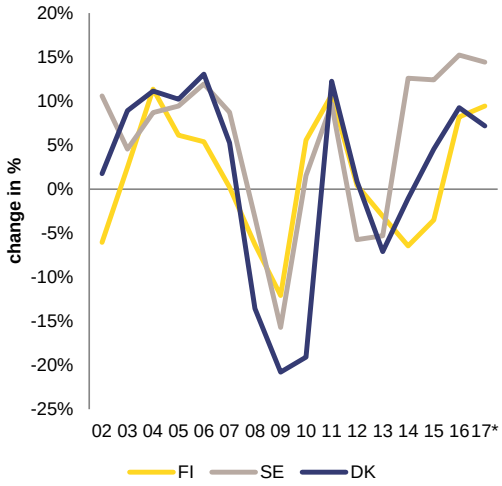
Graph 3.2.2: **Overvaluation gap for price/income, price/rent and fundamental model valuation gaps — Finland**



Overvaluation gap estimated as an average of the price/income, price/rent and fundamental model valuation gaps. See Philiponnet and Turini (2017) for methodology.
Source: European Commission calculations

The Finnish housing market has very large regional disparities. In the greater Helsinki area, the average price per square metre in 2017 was twice the level registered elsewhere. Most new jobs are created in the greater Helsinki area. The move from the countryside to urban areas is continuing. Housing demand is therefore large in the greater Helsinki area and housing supply in Finland does not always keep up with increasing demand (Marrez et al., 2013). As a result, house prices are increasing faster than income there. In many other areas, prices have actually dropped relative to income and market rents, as the population migrates to urban centres and declines (Nordea, 2017). This appears to be an impediment to labour mobility, especially for lower-skilled workers and families with limited revenues.

Graph 3.2.3: **Share of dwelling construction in GDP — Annual change in %**



Source: European Commission

Since 2015, dwelling construction has been on the rise. In the three Nordic countries (Denmark, Finland and Sweden), dwelling construction has a strong cyclical character. It is closely linked to interest rates and so evolves in line with the ECB's monetary policy decisions and the EU business cycle ([22]). Along the cycle, the share of dwelling construction in GDP oscillates between 5 % and 6.7 % in Finland ([23]). In 2017, construction growth seemed to be levelling off, with the share of dwelling construction in the country's GDP nearing its peak (see Graph 3.2.3). However, more residential building permits (in m² of useful floor area) were still granted in the first three quarters of 2017, suggesting that a larger supply of new dwellings can be expected in 2018. At the same time, policies that push households' preferences towards house purchases, most notably tax incentives on mortgages, are being phased out (see Section 3.2.1). In parallel, from 2018 the ECB's monetary policy is expected to become progressively less accommodative with a negative impact expected on household investment and thereby on dwelling construction in Finland and elsewhere.

([22]) The respective impact of the business cycle and of regional migration on housing demand and prices in Finland's growth centres will be examined more in detail in a separate publication.

([23]) By contrast, in Sweden, the share oscillated between 2.5 % and 6 %, with a clear upward trend across the recent cycles (2001-2017).

3.2.4. PRIVATE-SECTOR DEBT

The overall private debt burden is unwinding, but household debt may slowly be building up. In 2016, the private consolidated debt stock in Finland declined by 3.6 pps. At 149.3 % of GDP, it remained significantly above the macroeconomic imbalance procedure (MIP) indicative threshold of 133 %. On the other hand, credit growth to the private sector slowed to 2.2 % of GDP, far below the MIP threshold of 14 %. Nevertheless, the slowly rising household debt deserved closer monitoring (see section 3.2.6).

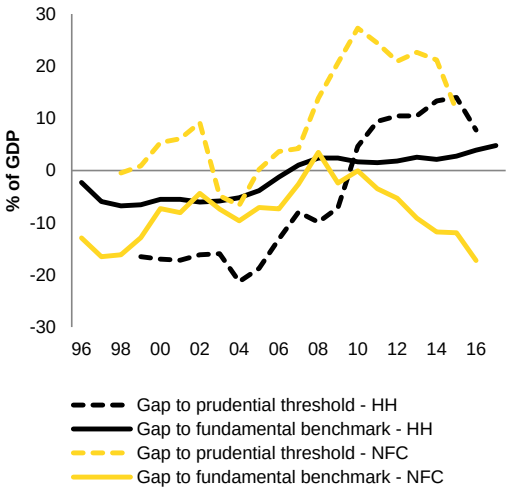
3.2.5. NON-FINANCIAL CORPORATIONS' (NFC) DEBT AND FINANCING

Risks related to the NFCs debt appear limited and decreasing. At 82.1 % of GDP in 2016, the consolidated debt of the NFCs remained quite high, but stable and even slowly contracting. As for the new benchmarks developed by the LIME working group ([24]) (European Commission, 2017b, Philiponnet *et al*. 2017), the non-financial corporations' debt was slightly above its prudential threshold (75 % of GDP), but largely below its fundamentals-based benchmarks (99.4 % of GDP) ([25]). Moreover, in recent years, the positive gap to the prudential threshold has been rapidly decreasing, while the negative gap to the fundamentals-based benchmark has been widening (see Graph 3.2.4).

([24]) The Lisbon methodology working group (LIME) is the technical and methodological group of the Economic Policy Committee.

([25]) Fundamentals-based benchmarks are derived from regressions capturing the main determinants of credit growth and taking into account a given initial stock of debt. Prudential thresholds represent the debt threshold beyond which the probability of a banking crisis is high, minimising the possibility of missed crisis and that of false alerts.

Graph 3.2.4: **Gaps to prudential thresholds and fundamental benchmarks for non-financial corporations and households**



Source: European Commission

3.2.6. HOUSEHOLD DEBT

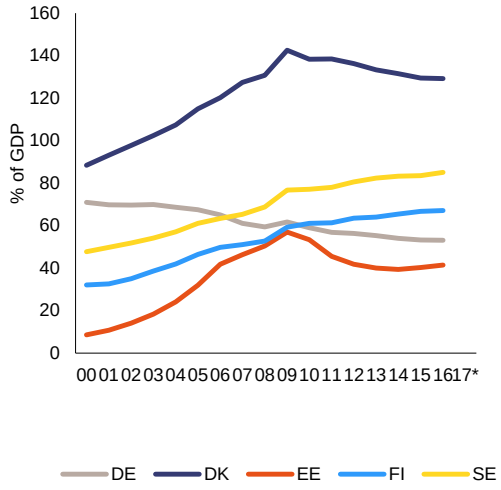
At 67.1 % of GDP in 2016, the debt level of Finnish households was high and moderately on the rise ([26]) (see Graph 3.2.5). In terms of debt-to-gross disposable income ratio, in Q1-2017 (three-year average) Finland ranked eighth in the EU-28 ([27]). However, households' assets, both financial and non-financial (mainly real estate assets), were also sizeable, at 138 % of GDP and 205 % of GDP respectively. Household debt stock increased only moderately (2.5 %) in 2017.

The household savings rate is low, and there is no active process of debt reduction. Consumption has risen faster than disposable income in recent years, supported by higher consumer confidence and low interest rates. As a result, consumer credit is growing rapidly, and a large share of mortgage loans is held by highly indebted borrowers. That said, in 2016 the non-performing loan ratio remained one of the lowest in the EU, even though slightly on the rise. The gross household saving rate is low at about 6 % only, half the level prevailing in the euro area.

([26]) Corresponding figures for Finland's Nordic peers, Sweden and Denmark, were comparatively higher.

([27]) Lower than Denmark, the Netherlands, Cyprus, Sweden, Ireland, Luxembourg and the UK.

Graph 3.2.5: **Leverage of households (households' debt stock to GDP ratio) (1)**



(1) ESA 2010
Source: European Commission

Households seem to be moving slowly away from their debt fundamentals-related benchmark. According to the benchmarks for assessing private debt, Finland's household debt appears slightly above both its prudential threshold (59.1 % of GDP in 2016) and its fundamentals-based benchmarks (63.1 % of GDP in 2016). In 2016, the positive gap to the prudential threshold was rapidly contracting, but the positive gap to the fundamentals-based benchmark appeared to be widening (see Graph 3.2.4). Also, the rather high medium-term and long-term debt sustainability indicators (respectively S1 and S2) ([28]) highlight that the excessive households' indebtedness derives from a low savings rate (S1) and could be aggravated in the long-term due to demographic changes and other long-term factors (S2).

Variable-rate mortgage lending to households is the dominant category of credit in Finland. Mortgage lending accounted for 75.3 % of the total household credit. The share of new mortgage lending with variable rates was very high (97%). In June 2017 the average interest rate on housing loans was low at 1.54 %, with an average rate of 1.07 % for new housing loans. However, interest rates can be expected to rise in the medium term. A risk for households and for banks therefore exists, especially as, recently, only 27% of new mortgage loan contracts with variable rates are loans with fixed instalments, while, for the others, monthly payments would increase.

Several measures have been introduced to contain risks related to the high and rising household indebtedness. In November 2016, the European Systemic Risk Board published a set of warnings on medium-term vulnerabilities in the residential real estate sector for eight Member States, including Finland. The key vulnerabilities in the country include the uneven distribution of mortgage-related risks among households, the high loan-to-value ratios and the low risk weight of mortgages in bank balance sheets ([29]). The Finnish government is phasing out the tax deductibility of mortgage interest payments, with the deductibility limited to 35 % of the interest rate payments in 2018 and to 25 % in 2019. Also, since July 2016 a law imposes that banks apply a maximum loan-to-value ratio for new mortgages (90%, 95% for first home buyers). In addition, from January 2018 an institution-specific minimum level of 15 % shall be applied for the average risk weight on mortgage loans to credit institutions that have adopted what is called the internal ratings-based approach. However, amid persistently low interest rates, a significant decrease in households' indebtedness in the coming years is not likely. Consumer lending practices are a source of concern. A rising share of this lending is granted by banks or companies that are not registered as banks in Finland (banks registered abroad, non-financial companies e.g. those selling consumer goods and peer-to-peer lending, and crowdfunding). In this respect, the lack of a comprehensive credit registry collecting both positive and negative information on debtors could prevent banks from having a clear overview of households' actual indebtedness (IMF, 2017a).

([28]) Debt sustainability indicators correspond to the permanent adjustment in the savings rate to (i) reach the fundamental benchmark for debt within 15 years (S1) and (ii) ensure that net financial liabilities are eventually reimbursed (S2).

([29]) As a result, the overall equity-to-asset ratio was one of the lowest in the OECD (OECD, 2016a).

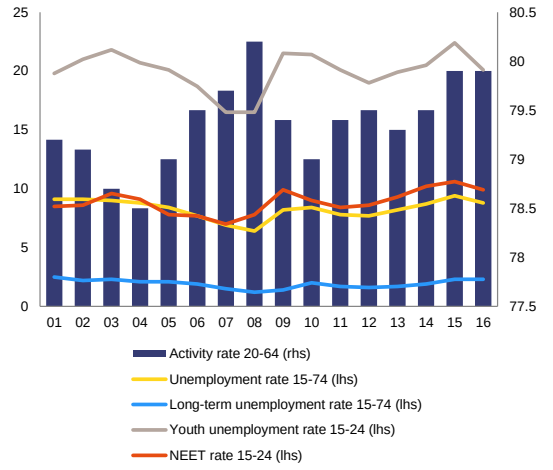
3.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES

3.3.1. LABOUR MARKET

Labour market

The labour market situation has been improving since 2016. The number of people in employment grew by 0.5 % in both 2016 and 2017 and is expected to continue to rise in 2018 and 2019 (Graph 3.3.1). Increasingly confident about economic expansion, more inactive people have started looking for work and move back to labour force. This explains the slow decrease in the headline unemployment rate, from 8.8 % in 2016 to 8.7 % in 2017. The employment rate has gradually increased from 68.5 % in 2015 to close to 70 % in 2017, still below Nordic peers, and mainly driven by older workers ([30]). In 2016, the youth unemployment rate contracted markedly by 2.3 pps to 20.1 %, approaching the EU average of 18.8 %. The rates of 15-24 year olds not in employment, education or training started to improve as well, at 9.9 % after 10.6 % in 2015.

Graph 3.3.1: **Labour market indicators**

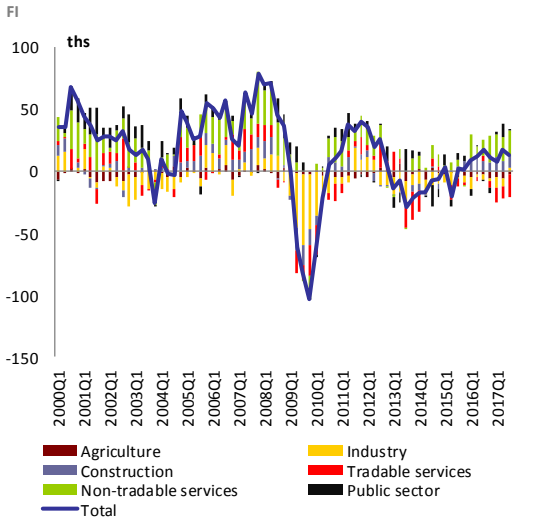


Source: European Commission

Labour market trends and matching

The moderate rate of job creation since 2016 is characterised by increasing regional and sectoral differences. Recently the biggest increases in the share of employment year-on-year are observed in manufacturing and non-tradable service sectors, including business services and construction (Graph 3.3.2) while tradable services have lost some jobs. Among the growing regions, South-West Finland especially is currently doing particularly well thanks to its shipbuilding and car assembly industries. To alleviate specific skill shortages in South-West Finland, a new cooperative university education venture for the manufacturing sector called FITech is being established, which will provide tailored support for industrial growth in the region. In addition, there is a need to ensure sufficient housing and transport links in that part of the country (Aho, 2017) (see also Section 3.2.3).

Graph 3.3.2: **Evolution of employment by sector**



Source: European Commission

While the job vacancy rate continues to increase, recent survey data point to labour shortages especially in construction and services. Companies are increasingly looking for new workers as indicated by an increasing number of vacancies registered at the public employment service (Graph 3.3.3). In 2017 the job vacancy rate continued to increase to 1.8 %, just slightly below the EU average of 2 %. The competition for jobs should have eased, as recently there were about 7 unemployed job seekers per open vacancy, down from about 10 job seekers 2 years ago.

([30]) The employment rate of older workers (55-64) has increased in recent years, reaching 74.0 % in Q2-2017.

Box 3.3.1: **Monitoring performance in light of the European Pillar of Social Rights**

The European Pillar of Social Rights, proclaimed on 17 November 2017 by the European Parliament, the Council and the European Commission, sets out 20 key principles and rights to benefit citizens in the EU. In light of the legacy of the crisis and changes in our societies driven by population ageing, technological change and new ways of working, the Pillar serves as a compass for a renewed process of convergence towards better working and living conditions.

FINLAND		
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24)	On average
	Gender employment gap	Good but to monitor
	Income quintile ratio (S80/S20)	Best performers
	At risk of poverty or social exclusion (in %)	Best performers
	Youth NEET (% of total population aged 15-24)	On average
Dynamic labour markets and fair working conditions	Employment rate (% population aged 20-64)	On average
	Unemployment rate (% population aged 15-74)	On average
	GDHI per capita growth	On average
Social protection and inclusion	Impact of social transfers (other than pensions) on poverty reduction	Best performers
	Children aged less than 3 years in formal childcare	On average
	Self-reported unmet need for medical care	To watch
	Individuals' level of digital skills	Best performers

Members States' are classified according to a statistical methodology agreed with the EMCO and SPC Committees. The methodology looks jointly at levels and changes of the indicators in comparison with the respective EU averages, and classifies Member States in seven categories (from "best performers" to "critical situations"). For instance, a country can be flagged as "better than average" if the level of the indicator is close to EU average, but it is improving fast. For methodological details, please consult the draft Joint Employment Report 2018, COM (2017) 674 final.

Finland performs relatively well on the indicators of the Social Scoreboard ([1]) supporting the European Pillar of Social Rights. 76 % of the population have basic or above basic digital skills, Social transfers effectively address poverty.

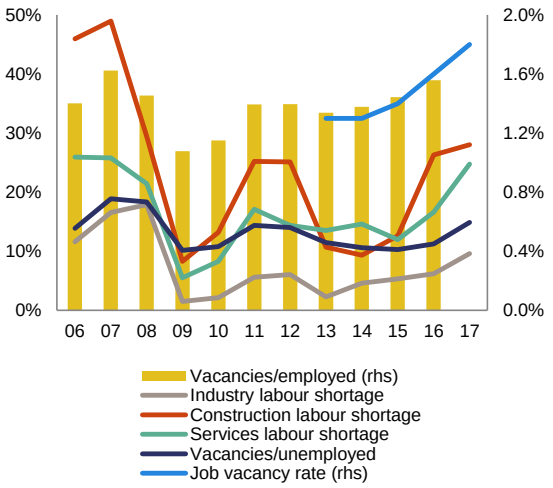
Self-reported unmet needs for medical care suggest challenges. Access to services in the healthcare system is currently uneven and the proportion of people reporting unmet medical care needs due to the waiting time is relatively high, 4 %. The current organisation of the healthcare system results in a strong contrast between occupational healthcare with fast access and public healthcare with long queues. At the same time the need for social and health services is growing as the population is aging. The upcoming social and health care reform (see section 3.1.3) aims to address some of the reasons for uneven access to healthcare.

Finland has a generally well performing education system. The quality of education is shown by particularly good educational outcomes, even if they have seen some decline in in science and mathematics (OECD 2016b). There is a high degree of equity as the influence of socioeconomic background on educational outcomes is relatively weaker. The system benefits from well-educated and motivated teachers as well as a high level cooperation among all the relevant stakeholders.

[1] The Social Scoreboard includes 14 headline indicators, of which 12 are currently used to compare Member States performance. The indicators "participants in active labour market policies per 100 persons wanting to work" and "compensation of employees per hour worked (in EUR)" are not used due to technical concerns by Member States. Possible alternatives will be discussed in the relevant Committees.. Abbreviation: GDHI – gross disposable household income.

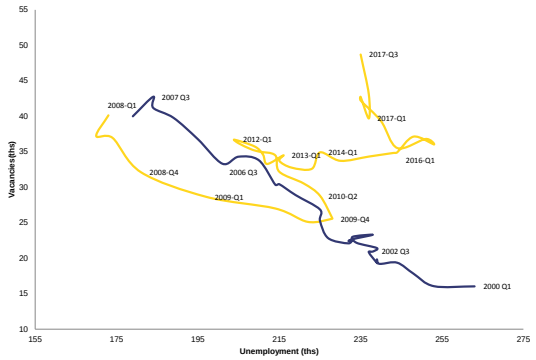
However, in 2017, approximately one construction or service sector company in four said that labour shortage limited their production. In manufacturing also labour shortages are on an increasing trend, although the level is still relatively low. In addition, since late 2016 the reduction of unemployment has almost come to a standstill while more jobs are vacant (Graph 3.3.4), implying that vacancies are more difficult to fill than before. According to the Beveridge curve, matching problems increased until 2015. Matching has remained broadly unchanged since then. To some extent this could also either reflect the fact that typically previously inactive workers started looking for work after the recession, resulting in a gradually decreasing unemployment rate. Another possible explanation is that the structure of the economy has changed meaning that some workers' skills would need updating to improve employment prospects.

Graph 3.3.3: **Labour shortages**



(1) Vacancies/FTE and vacancies/unemployed refer to the ratio of vacancies registered at the PES to registered employment (in full-time units) and unemployment, respectively. Vacancies/jobs refer to the standard enterprise survey-based job vacancy rate. Labour shortage is measured as percentage of firms reporting labour shortage as a factor limiting production (annual average of seasonally adjusted quarterly data)
Source: Calculations based on Eurostat data and European Commission data of business surveys for Business Climate Indicators

Graph 3.3.4: **Beveridge curve**



(1) Vacancies as registered at the State Employment Agency
Source: European Commission

Wage developments and collective bargaining

Wage negotiations are ongoing for the year 2018 and beyond, and the first results are promising. The sectoral collective agreements in the largest exporting sectors (technology, forest industries, chemical) concluded so far point to continued moderate wage increases in 2018-2019 (see section 3.4). The wage level agreed so far could ensure that the competitiveness gains made in the context of the Competitiveness Pact are not lost, while securing a potential increase in the purchasing power of households. It remains to be seen whether the sectors that will negotiate in early 2018 will limit their wage increases to the anchor set by the exporting sectors.

Under sectoral agreements concluded in late 2017 and early 2018, certain industries were given the opportunity to carry out local bargaining for collectively agreed wage increases. Under the main exporting sector agreements, a part of the agreed total wage increase takes the form of a general increase to all workers of the sector, while part of the increase can be agreed locally at the firm-level ([31]). The exact share of the part subject to local bargaining varies by industry ([32]). In some sectors, this local allocation of part of the wage increases has been in place for some time (Tulo- ja kustannuskehityksen selvitystoimikunta, 2014). To some extent, the possibilities for local bargaining were opened up in the context of the Competitiveness Pact in 2016 (European Commission, 2017c).

Companies that are not members of employer organisations cannot use some of the available local bargaining possibilities. These employers (mostly SMEs) are bound by the sectoral collective agreements. Currently, some 75 % of all employees work for organised employers, and some 89 % are covered by these collective agreements (Ahtiainen, 2016). Non–organized employers are currently prohibited from using certain possibilities (e.g. on working time) for local bargaining included in the collective agreements. This may make it harder for such firms to ensure that real labour cost increases are aligned with their productivity growth. In general, capacity building of employees and employers, especially in non-organized companies, appears as a prerequisite for successful local bargaining.

Labour supply

The shrinking of the labour force and the decline in activity in prime working age

([31]) Most increases have a fall-back option where the whole wage increase is allocated as a general increase if no agreement is reached locally.
([32]) These are included in all the agreements concluded so far, but are particularly significant for the technology sector.

population (30-44) presents challenges to the Finnish labour market policies. The working age population (15-64) has been shrinking since 2010. This phenomenon, coupled with inactivity rates among the prime working age population (30-44) which have increased faster than in the rest of the EU, could challenge the sustainability of the Finnish welfare state.

While activity rates have been improving for the general population 20-64, they have been deteriorating for specific age groups. The phenomenon is not limited to Finland, as the activity rate among prime age workers of category 30-44 across the EU has gone down from 94.1 % to 93.3 % between 2008 and 2016. However, the fall was sharper in Finland (from 93.6 % to 90.8 %) and continued in 2017 (90.3 %), resulting in the fourth lowest activity rate in the EU in this age group. While the activity rate for the higher skilled appears constant across time, it declines markedly for the low and medium skilled ([33]).The economic dependency ratio is thus at risk to increase in the medium and long term.

The reasons for the increase in the inactivity rate of the prime working age group are multiple (see Table 3.3.1). The main drivers seem to be education and training, especially for the medium skilled. Disability and illness are also reasons for inactivity. Moreover, the share of discouraged workers has increased from 2008 to 2016.

Women have moved from employment into inactivity even more than men, due mainly to family duties and caring responsibilities. However, education and training as a reason for inactivity increased over the same period ([34]). Overall, women in Finland are more likely to be present on the labour market than in other EU countries ([35]), as they tend to return to work after the inactivity period related to family duties. However, the recent trend has been for women's participation in the workforce to decrease more. This explains the increased gender employment rate gap (see Box 3.3.1).

([33]) Cumulated activity rates for low and medium skilled of 58.7 % in 2008 decreasing to 51.9 % in 2016.

([34]) From 16.22 % in 2008 to 20.03 % in 2016 for the 30-44 female population.

([35]) Activity rate (ages 20-64) in 2016: Finland 77.7 %, EU average 71.4 %.

Table 3.3.1: **Inactivity rates in Finland and the EU in 2008 and 2016 — Stock in percentage of total 25-49 age population**

	Finland						EU28	
	Men		Women		Total		Total	
	2008	2016	2008	2016	2008	2016	2008	2016
Education	1,6	2,9	2,9	3,9	2,3	3,4	1,3	1,5
Own illness, disability	3,2	3	2,3	3	2,8	3	2,4	2,7
Looking after children	:	0,3	6,2	6,6	3,1	3,4	3,6	3,9
No work available	0,3	0,7	0,3	0,5	0,3	0,6	0,8	1,1
Others	1,8	2,5	8,4	9,6	5,2	6	9,7	9,5
Total	7,6	10,2	14,7	18,3	11,1	14,4	14,4	14

Source: European Commission

Labour market outcomes of the non-EU born people are worse than for natives. In 2016, the employment rate gap was one of the highest in the EU (at 20.9 pps) and particularly high for women (27.6 pps), mainly due to the low activity rate among non-EU born women. There is also an above average difference in school performance of natives and non-EU born, which affects second generation pupils as well. This translates into a high at-risk-of-poverty or social exclusion gap ([36]).

Incentives to accept work and activation measures

While some inactivity traps remain, Finland took considerable action in 2016 and 2017 to encourage jobseekers to accept work. Reforms of unemployment benefits were implemented as from 2017, shortening the duration of earnings-related unemployment benefits and tightening the conditions for granting unemployment benefits. Currently, as for unemployment benefits, Finland is above EU average regarding the coverage, adequacy and length (European Commission, 2018c). From the beginning of 2018, a revised benefit scheme with financial sanctions for those jobseekers who do not demonstrate "being active" for 18 hours in a 3-month period (i.e. working or being self-employed) or for five days in employment services entered into force. The scope of the mobility allowance is also widened to better cover part-time work There are plans to enable jobseekers to enhance their skills related to entrepreneurship or areas with high labour demand during six months without losing unemployment benefits. However, there has been less progress to address the bureaucratic traps, which cause uncertainty regarding both the level of benefits and the duration of waiting times before the reinstating of benefits. A real-time income register, which

([36]) 27.4 pps: the fifth highest in the EU.

may address some of the bureaucratic traps, is expected be in place in 2019.

The activation measures could have a positive impact if coupled with good and sufficient activation services. The measures introduced so far include interviews with all unemployed as of 2017. The impact of the interviews has been deemed to be positive, but may be limited to updating the statistics as many unemployed registered as jobseekers have been found no longer to be looking for work. Furthermore, not all jobseekers have yet been interviewed at all, and the target of interviews every 3 months is not reached. This measure may also be diverting public employment services resources away from catering the services to those who need them most. The public employment services offices do not currently appear to have sufficient staff to provide adequate activation services to all unemployed. The requirement to "demonstrate being active" aims at active job search during the whole period of unemployment insurance but could direct jobseekers to accept even very short-term work or training courses. Increases of some EUR 10 million in the budget for active labour market policies are planned to accommodate these requirements, but it is unclear whether this is sufficient to ensure activation measures to all those who need them. This could reduce the income of the most vulnerable jobseekers in regions where no work or active labour market measures are available.

In view of the increasing employment, integrated services for the inactive and unemployed are important. Many of the currently existing integrated services are aimed at certain groups only, such as young people or the long-term unemployed. The services could be combined with measures improving the employability of the unemployed, paying special attention to vulnerable groups (e.g. rehabilitation). The range of services is appropriate but the services are dispersed among a number of separate providers and the coordination is not good enough to produce a seamless services chain. Therefore, the vulnerable claimants are falling between different measures. Services for certain groups (young, long-term unemployed) appear to be adequate.

Some recent policy decisions may have negative effects on women's earnings. The gender pay gap in Finland is higher than the EU average: 17.3 % in 2015, while the EU average is 16.3 %. Long family leaves, mainly taken by women, together with a gender segregated labour market, contribute to this. A reform of the parental leave system was explored to increase the employment rate of women and to promote gender equality (European Commission, 2017) but no reform is expected to take place during this parliamentary term. The Competitiveness Pact, which entered into force in 2017, contains measures such as the 30 % reduction in holiday bonuses only for the female-dominated public sector. This is likely to increase the pay gap further.

The migrant population could contribute to a more balanced economic dependency ratio in the long run, provided that migrants are well integrated into the labour market. As the number of asylum seekers has fallen since the peak in 2015, the key challenge now is to ensure the long-term integration of not only the refugees, but of all migrants in the Finnish labour market and society. Previously, integration policies have been focused on language trainings, with little emphasis on early labour market integration. Finland has made some efforts to take a more comprehensive approach to integration, through faster and more flexible study paths and recognition of existing qualifications. Nevertheless, in practice, it often takes years from arrival to move into the labour market. The Social Impact Bond model and the Skills Centre of the City of Helsinki are good pilot examples of a more comprehensive approach to integrating migrants. Integrated services that make it possible to follow appropriate education and training paths while also developing language skills alongside other studies could be helpful. The government is also trying to attract more highly skilled migrants and better utilise the skills of those already in the country through the Talent Boost programme.

Self-employment and social protection

There are some weaknesses in the social protection of entrepreneurs and self-employed and entrepreneurship is generally not considered an attractive career choice. In Finland self-employment rates and the number of self-employed people were significantly above

pre-crisis levels in 2016, although recent trends are pointing downwards (OECD, 2017a). Necessity-driven entrepreneurship is relatively low in Finland (15 % of all entrepreneurs), as is transition from unemployment to self-employment (European Commission, 2015). However entrepreneurship is considered a good career choice only by 40 % of people in Finland, one of the lowest ratings in the 65 countries surveyed (Global Entrepreneurship Monitor, 2016). The relative risk of poverty for the self-employed in Finland is seven times higher than that of employees. This is the second highest poverty risk gap in the EU (Eurostat, 2015). In some cases, the self-employed are inadequately insured to cover old-age, sickness, work accidents, pregnancy and unemployment (Suomen Yrittäjät, 2016).

The Finnish government has introduced new inclusive entrepreneurship measures to encourage the unemployed to start businesses. As of 2018 it will be possible for the unemployed to receive their unemployment benefit in the first 4 months after starting a business. This scheme is most likely to be successful if combined with training and coaching (EEPO, 2014), but the short duration can limit its impact. Furthermore, a recent working group has been evaluating possibilities of combined unemployment benefits for those combining part-time work with part-time entrepreneurship, enabling them to ensure that both their wages and income from self-employment contribute to their unemployment benefits. There are also plans to prepare a new bankruptcy law, to enable a new start for bankrupt entrepreneurs.

3.3.2. SOCIAL POLICIES

Income equality

In general, social safety nets in Finland contribute to reducing poverty and to guaranteeing adequate social protection for all. Finland has a strong legislative basis under the Constitution. Those who cannot obtain the means necessary for a life of dignity have the right to receive indispensable subsistence and care. The Finnish income transfer system consists of three different parts: income-related social insurance, flat-rate basic security benefits administered by the Social Insurance Institution and additional and preventive assistance benefits delivered by municipalities To qualify for social assistance, the claimant is required to apply for all other social benefits. The risk of poverty has continued its declining trend since its peak in 2011. The risk of poverty and social exclusion is one of the lowest in the EU and Finland has one of the lowest income inequalities (measured by the income quintile ratio). However, the national Europe 2020 target, of no more than 770 000 people at risk of poverty or social exclusion, seems unlikely to be reached. In 2016, the corresponding number in Finland was 896 000, a decrease of 14 000 since 2008. Recent policy decisions to freeze certain benefits could have an impact on the very good performance. It is expected that the government budgetary plan and freezes on certain benefits will have a detrimental impact on equality in the coming years (2017-2019) (Mukkila et al, 2017).

Inactivity traps and social benefits

The high inactivity traps constitute an obstacle to a more extensive use of the labour force. Nearly half of the inactivity trap consists of the social assistance, with housing allowance forming a substantial component thereof. Despite the design of the social assistance as a temporary ‘last resort’, an increasing share of the population relies on it as income support on a regular basis. The number of recipients with no other income (excluding housing allowances) almost doubled during the first half of 2017 (Kela, 2017). Two recent decisions have likely contributed to this trend: i) the transfer of the administration of this assistance from the social office of the municipalities to the Social Security Institution (or KELA), reducing its stigma and ii) the cuts and freezing of most other social benefits, which is likely to encourage recipients to seek social assistance to supplement their income. The phasing out of the social assistance in particular is currently problematic, as this heavily means-tested benefit is fully phased out as the income increases.

Box 3.3.2: **Policy highlight: Ohjaamo: from a pilot project to a structural reform to provide support to young people**

A few years ago the Public Employment Services of the City of Vantaa launched a pilot project funded by the European Social Fund to bring employment, educational, social and health services under one roof to help young people between 17 and 24 years to find a job, a place to study or to provide assistance in social and health issues. The project supported over 4000 people out of whom approximately 1800 found a job, internship or a place to study. Numerous people were directed to health, mental health or social services. The pilot project prepared the ground for a nationwide project to launch one-stop guidance centres throughout Finland. Approximately 40 one-stop guidance centres called Ohjaamo are currently operating in different parts of Finland and a majority of them received support from the ESF until February 2018. Currently aggregated data on national level is not available on the number of clients received by Ohjaamos. However, the Ohjaamo in Helsinki received almost 4000 clients in 2016, 75% of whom found employment, a place to study or other service. In 2017 the government decided to grant national funding for Ohjaamo services, thus securing their continuation and making them as permanent structure for implementing the youth guarantee in Finland. The approach of this successful reform could also be used to provide tailored services to support jobseekers through integrated service chains.

Reforms are being planned to address some aspects of the inactivity traps. Housing benefit reform is being planned for 2018, with partial changes in the capping and indexation of the benefit. Lower childcare fees for low and middle income families will enter into force in 2018 freeing more than 6 000 families from childcare fees. However, these planned changes in benefits are expected to precede a more comprehensive reform of the social security system (Ministry of Finance, 2017). The basic income experiment, running 2017-2018 with first results expected in 2019, could provide some information for the revision of the social security system (European Commission 2017c).

3.3.3. EDUCATION

Finland has a generally well performing education system, although there has been some decline in the performance and divergence between different groups has been detected. Early school leaving rates have declined from about 9 % in 2012 to 7.9 % in 2016, but foreign-born young people have much higher rates than natives (15.1 % against 7.6 %). This is combined with the worsening performance of second generation pupils ([37]). This points to deep integration challenges likely to impact on labour market integration. At the same time, slowly increasing differentiation is observable between regions and between schools. The causes for this increasing inequality in education are yet to be fully understood (European Commission 2017c).

Education outcomes in Finland remain among the best in the EU but declined slightly in science and mathematics. International IEA-PIRLS testing in reading confirmed the important performance gap between boys and girls (IEA, 2017). According to the 2015 OECD programme for international student assessment tests, Finland continued to remain among the countries with the smallest number of low achievers in basic competences. However, in science, low performance increased and high performance declined (European Commission, 2017c). The 2012 Survey of Adult Skills (PIAAC) test placed the numeracy and literacy skills of Finnish adults among the best of all participating countries. Nevertheless some Finnish participants ([38]), showed markedly lower results.

The education system has been subject to considerable public spending cuts, but the government is taking some measures to promote equality. Recently, the government allocated EUR 105 million additional funds for

([37]) The OECD PISA 2015 share of low performing students among 15-year-old students in science was 10.2 % among pupils without a migration background vs 40.2 % among foreign-born pupils and 31.4 % among second generation pupils with foreign-born parents. However, the proportion of people with a migrant background is extremely low so the results are not statistically significant (OECD, 2016a).

([38]) Older than 55 years, who did not attend comprehensive schools reformed in the 70s and Vocational education and training (VET) students.

education and research for the financial period 2017-2019. However, this did not really reverse the longer term downward funding trend (European Commission 2017c). A continued negative trend in education spending risks undermining competitiveness, reducing equity and education outcomes. Reducing the number of education outlets particularly in VET, can reduce easy access to and even the provision for all in a country of the size of Finland.

Finnish universities perform as well as their Nordic peers in terms of, for example, completion rates (OECD, 2016c), **skills of tertiary graduates** (Kivinen et al., 2016a) **and student satisfaction** (Eurostudent, 2017). The employment rate of recent graduates has been below the EU average during the last few years, which might be due to the unfavourable economic conditions. When adjusted for the small size of the country, the number of international publications by researchers based in Finnish universities is significant ([39]), but not higher than in other well performing Nordic countries (Academy of Finland, 2016; Kivinen et al. 2016b). Collaboration on innovation between firms and universities is one of the highest in OECD countries (OECD 2015). In recent years, Finnish universities have become more international (Vipunen, 2017). The new vision for higher education and research in 2030 aims at raising tertiary attainment to 50 %.

The government's new funding model since 2017 encourages higher education institutions to become more productive and internationally-oriented. The financial pressure caused by the funding cuts from 2015 onwards had an initial positive effect by facilitating the sharpening of research and teaching profiles of higher education and fostering cooperation between institutions. However, some universities had to reduce their staff ([40]), which arguably diminishes the breadth of the academic offer, and may have an important impact on drop-outs and study quality. Bachelor-level studies are being made more generic and suitable for several careers and specialisation should, increasingly, happen at master's level. The University of Helsinki, with its 'Big Wheel' reform is an example for this.

Finland is implementing a comprehensive reform of its vocational education and training system as of 2018. This is a key reform to address the need for new skills and strengthen provisions for life-long learning. It has the potential to address existing problems of skills shortages in some industries. VET for young people and adults will be consolidated, forming a single system with its own steering, regulation and financing model. VET will become competence-based and customer-oriented: each student will be offered the possibility to follow an individually appropriate path towards finishing an entire qualification or supplementary skill modules for re-skilling and upskilling. Digital and workplace learning will also be increased. The new funding model will encourage VET providers to improve the effectiveness and quality of learning. If implemented successfully, the reform could contribute to reduce skills mismatches and increase the employment rate.

The success of the VET reform in guaranteeing access to education is crucial. This is the case especially in the context of the relatively high inactivity rate of the working age population and the low employment rates of the low-skilled, who are the target of the Upskilling Pathways Recommendation. Ensuring sufficient access and study place in VET for each cohort is particularly important. However, successful implementation of the reform could be challenging due to the significant cuts in the VET budget. It will be essential to monitor the reform and have the possibility to take corrective action on several aspects of it ([41]). Additional funding of EUR 60 million is allocated for the reform for the period 2017-2020.

([39]) Vipunen (2017) - Education Statistics Finland shows a 4 % decrease in university staff between 2015 and 2016 resulting in increasing student-to-staff ratios.

([41]) These aspects are discontinuation of studies, the impact on the regional availability and linguistic accessibility of education, the increase in the number of places for apprenticeship training and training agreement, the quality of training places.

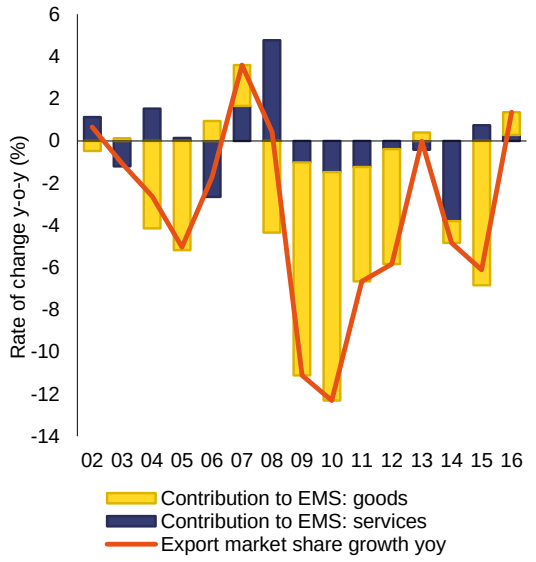
3.4. INVESTMENT

3.4.1. COMPETITIVENESS DEVELOPMENTS

Market share developments

Over the 2008-2015 period, Finland experienced a sharp decrease in its export market shares for goods and services (Graph 3.4.1). In addition to the global economic slowdown, the country was hit by several severe external shocks: electronics exports and demand for paper shrank. Also, exports to Russia fell dramatically as the Russian rouble depreciated sharply and a set of sanctions and countersanctions affected EU trade with that country. Finland's exports of goods fell sharply, whereas exports of services, although affected as well, behaved comparatively better. Also, from 2007, ill-timed wage increases enforced by broad collective agreements prevented companies from adjusting swiftly, while productivity fell. In this context, overall both cost and non-cost competitiveness deteriorated (see Graph 3.4.2). As a result, in the past 10 years, Finland has registered a 40 % cumulative decrease in its share of the global export markets for goods and services.

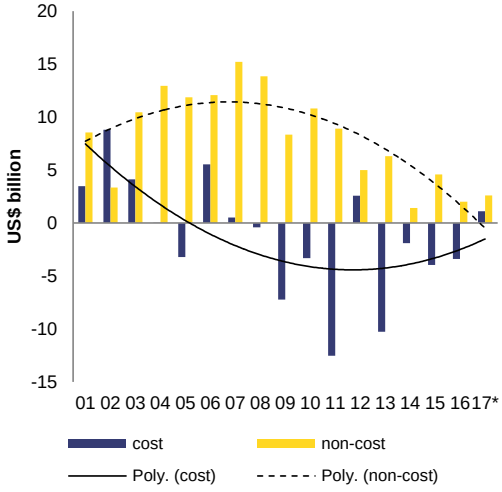
Graph 3.4.1: **Export market share growth by type (goods or services)**



Source: European Commission

In 2016, the long-term decline in export market shares seems to have come to an end. This was largely on the back of a progressive improvement in cost-competitiveness conditions ([42]) (Graph 3.4.2). The improvement appeared relatively strong in the equipment sector and in textiles. Without taking trade flows of fuels into account ([43]) as fuel prices are generally volatile and their weight in trade is rather large, the improvement of the trade balance originating in cost competitiveness appeared even clearer. In 2017, Finland's trade balance is expected to have reverted to positive values, especially as wage moderation and recent productivity gains have led to a fall in unit labour costs.

Graph 3.4.2: **Breakdown of the balance of trade for goods (fuels included) 2001-2017 — Cost and non-cost competitiveness impact**



(1) Values for 2017 are based on the first 5 months of the year and annualised ((sum/5)*12)
(2) Only goods for which both imports and exports, as well as volumes, are registered are taken into account
Source: European Commission calculations

By contrast, non-cost competitiveness remains a source of concern. The trade balance surplus

([42]) Cost and non-cost competitiveness are defined in the report by comparing the unit values of exports (UVX) and imports (UVM) and the trade balance for each category of goods (four digits categories). If UVX > UVM, and if the trade balance for the particular category of goods TB > 0, we have a case of non-cost competitiveness. Another case of non-cost competitiveness is when UVX < UVM and TB < 0. When UVX < UVM and TB > 0 or when UVX > UVM and TB < 0), we again have cost competitiveness. Where there is strong non-cost competitiveness in a category of goods, there is a trade surplus, and where non-cost competitiveness in a category of goods is weak there is a trade deficit. The same applies to cost competitiveness (ECB, 2012).

([43]) Finland is a refiner of Russian oil and exporter of petroleum products.

originating in non-cost competitiveness has been declining rapidly since 2009 (see Graph 3.4.2) and is now close to balance. This both reflects and explains the negative or stagnating productivity growth over the last decade, which remains the main challenge for Finland's competitiveness (see below).

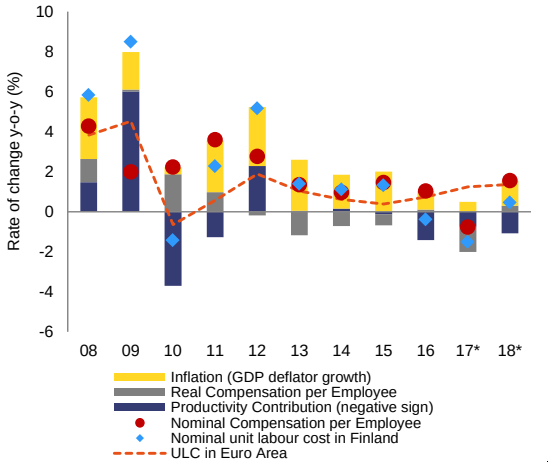
Wage trends and cost competitiveness

Cost competitiveness has become of particular relevance to Finland. After the setback faced by its electronics sector, the country has increasingly specialised in intermediate goods (Ali-Yrkkö et al. 2016). As exporters of intermediate goods tend to compete chiefly on price, Finnish firms need to have competitive cost structures more than previously in order to remain part of global value chains and to capture value added (Ali-Yrkkö et al. 2016). Similarly, more rapidly rising service prices than in the rest of the euro area may be a cause for concern (Bank of Finland, 2015).

In the late 2000s, high multi-year wage increases deteriorated cost competitiveness. Wages continued to progress steadily after the onset of the 2008 global crisis, even when productivity growth fell sharply (see Graph 3.4.3). This pushed Finland's unit labour costs growth far above that of the euro area, Denmark, Germany and Sweden (see Graph 1.5). As a result, cost competitiveness declined sharply. This had a clear negative impact on the trade balance (see Graph 3.4.2).

However, more recent wage agreements and labour market policy measures have progressively reversed the trend. The wage agreement reached in 2013 led to negative growth in real compensation per employee (see Graph 3.4.3), and wage moderation continued: in summer 2016, the government and social partners signed the 'Competitiveness Pact', which is intended to improve the cost competitiveness of Finnish economy ([44]). It has been agreed that collective agreements will increase opportunities for local agreements. The current status of the wage negotiations points to an outcome with a broadly neutral impact. Major agreements have been reached in the technology, forest and chemical industries (1.6 % annually over the 2018-2019 period) (see Section 3.3).

Graph 3.4.3: **Breakdown of rate of change of nominal ULC in Finland by change in inflation, real compensation of employee, productivity contribution), rate of change of nominal ULC in EA — Finland**



Source: European Commission

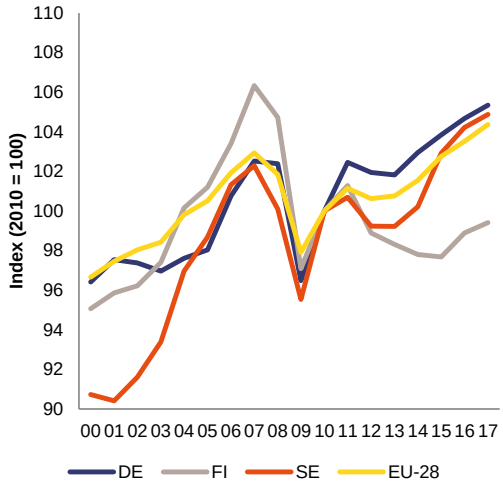
Productivity

After several years of decline, total factor productivity growth has eventually turned positive. Unit labour cost growth can be mitigated through productivity gains, but in Finland, these have been slow or even negative in recent years. Beyond the fall in exported volumes, the shift from high-tech goods towards medium-tech goods reduced market power and mark-ups. Value added, and thereby productivity, was further affected. Wage moderation and the lower level of technology embedded in the lower tech output also contributed to the fall. In 2015, Finland remained among the strongest EU performers in labour productivity in the manufacturing sector ([45]). However, it ranked ninth instead of fifth in 2008. In particular, total factor productivity had been severely affected, but in 2015 it bottomed out (see Graph 3.4.4).

([44]) To monitor the implementation and impact of the Competitiveness Pact, the Information Committee on Cost and Income Developments reports regularly on the labour market and wage formation, consumer prices, productivity and unit labour costs. Its latest report was in 01/2018 (Valtioneuvosto Kanslia, 2018).

([45]) In EUR thousands per person employed (not adjusted for differences in purchasing power): Belgium (103.5), Denmark (89.3), Germany (73.6), the Netherlands (93.1), Austria (82.6), Finland (74), Sweden (90.1), the UK (89).

Graph 3.4.4: **Total factor productivity (total economy) — EU28, Germany, Finland and Sweden**



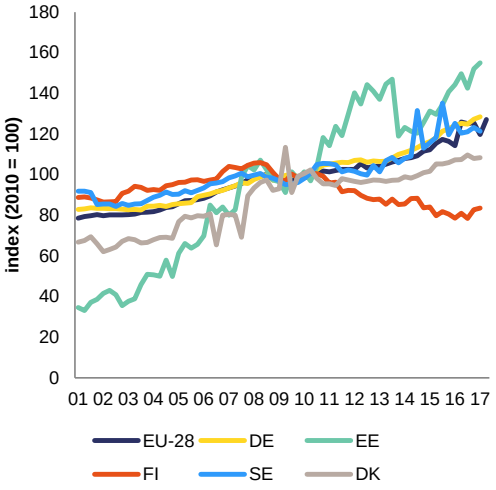
Source: European Commission

In parallel, productivity growth has become increasingly polarised, with large differences in patterns from firm to firm. Before the crisis years, the most productive firms, and to a lesser extent the least productive, experienced a process of recovery, with robust gains in labour productivity, notably in manufacturing. Moreover, since the start of the crisis, the vast majority of firms in the middle of the distribution have had meagre growth rates or even negative rates in the case of services (Criscuolo, 2018). This has led to an increasing polarisation of the labour productivity performance of Finnish firms. This highlights a relative lack of policies for increasing the speed of structural change. These would include policies on spreading innovation, including those that target higher public investment in R&D and other intangible assets and stronger science-business links. Such policies ensure the wider participation of companies in innovation and sustain upwards convergence towards higher-productivity activities (see also Section 3.5.1).

Investment

Overall investment in Finland remained above the EU average, but was predominantly devoted to construction. At around 23 % of GDP in the first three quarters of 2017, overall investment remained among the highest in the EU, and was increasing. However, construction accounted for 56.4 % of overall investment and was equivalent to 12.8 % of GDP, the highest proportion in the EU, and on a rising trend. In particular, dwelling construction was high, with very limited impact on total factor productivity. At around 5.7 % of GDP and 25.3 % of total investment, equipment investment (gross) in Finland remained one of the lowest in the EU and far lower than the level for the share of industry and major market services (retail, transport, accommodation and food services, information and communication) in the country's GDP. However, equipment investment rebounded as capacity utilisation by businesses increased. It was nearing the EU average, with a likely higher impact on total factor productivity.

Graph 3.4.5: **Intellectual property product investment in volume — EU (28), Denmark, Germany, Estonia, Finland and Sweden**



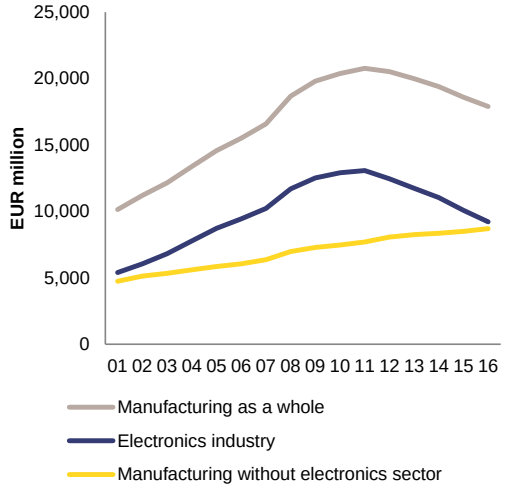
Source: European Commission

Investment in intellectual property ([46]) in Finland reflects the increased specialisation in lower value-added industries. At around 4.2% of GDP in the first three quarters of 2017, investment in intellectual property bottomed out, slightly above the EU average (3.8 % of GDP). Over the 2009-2016 period, investment in intellectual property product by non-financial corporations increased by almost 25 % in the EU as a whole, and especially in Estonia, Sweden and Germany

([46]) Intellectual property products is a national account concept (NA.117) that comprises research and development (NA. 1171), mineral exploration and evaluation (cost of drilling, aerial or other surveys, transportation, etc.) (NA.1172), computer software and large databases (NA.1173) and entertainment, literary or artistic originals of manuscripts, models, films, sound recordings, etc. (NA.1174).

(see Graph 3.4.5). Finland's negative growth in this respect almost exclusively reflected Nokia's major setback in its electronics/phone businesses, in which the R&D capital stock declined sharply over the period (see Graph 3.4.6). The share of business R&D investment declined from 2.7 % of GDP in 2009 to 1.8 % of GDP in 2016. In parallel, after peaking at 1.11 % of GDP in 2010, public R&D expenditure ([47]) also declined, by almost 1 % annually, after annual 5 % increases on average from the early 2000s to 2010 (Section 3.5.1). Preliminary signals indicate that the negative trend might be reversing in both the public and private sectors (see also Section 3.5).

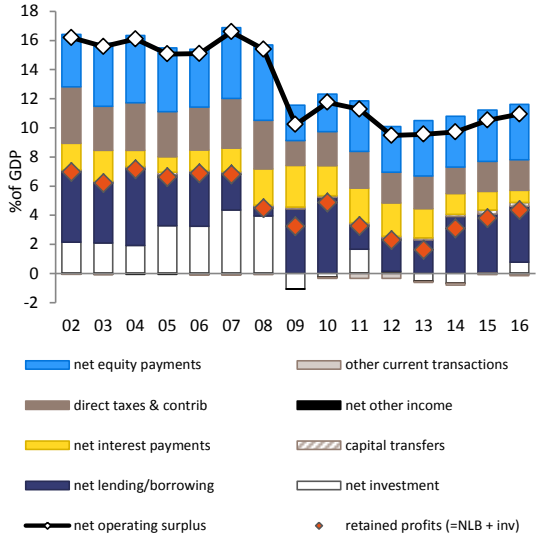
Graph 3.4.6: **Research and development gross capital formation — Net capital stock by industry and year**



Source: European Commission

Lower retained profits by non-financial corporations have meant less room for equipment and intellectual property investment in recent years. In 2009, the operating surplus of non-financial corporations had declined by almost 40 % compared to 2007 and is only slowly recovering (+1 % each year on average). Dividend payments declined even more (-50 %) and are still 20 % below their 2007 level. Over the 2009-2016 period, retained profits by non-financial corporations were only half their level in 2001-2008. This resulted notably in a fall in net investment in that period (see Graph 3.4.7). At the same time, businesses continued to build up sizeable precautionary financial buffers. This practice seems to date back from the financial crisis of the early 1990s. More recently, companies were likely more motivated by the weak external demand and uncertain external environment after the 2009-2010 crisis years.

Graph 3.4.7: **Non-financial corporations surplus redistribution — Finland**



Source: European Commission

Recurrent losses made by the electronics sector heavily affected the overall profits of firms and affected R&D investment. This highlights how much Finland's electronics industry has been one of the main determinants of changes in the country's economy. In 2016, however, and despite delays in the development and expansion of advanced telecommunications networks ([48]), the manufacture of computer, electronics and optical products recorded a positive operating result for the first time since 2009. Business profits are a major determinant of investment in intangible assets, and the electronics sector is one of the most important sectors in this respect (see Graph 3.4.6). Banks are often reluctant to finance R&D and innovation activities, as these are generally considered risky operations.

([47]) Government, private non-profit and higher education sectors.

([48]) The fourth and fifth generations of broadband cellular network or wireless technology. The commercial goal seems to remain 5G for all by 2020.

Foreign direct investment (FDI)

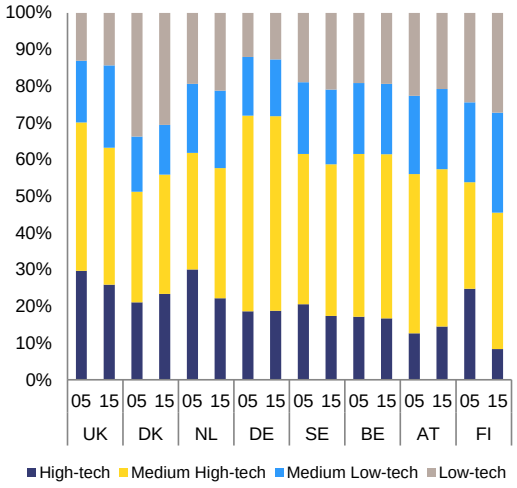
Finland's stock of inward FDI remains relatively low, but greenfield investment ([49]) is expanding very fast. Despite Finland's generally favourable climate for investment, the country's stock of FDI (in 2015 about 40 % of GDP) has been low, and stable, since 2011. This may limit sources for financing growth ambitions and can also lead to less technology transfer. That said, in 2016 greenfield FDI inflows increased by 50 % and reached EUR 4 billion, with manufacturing (especially forest industry) absorbing the lion's share (54 %) ([50]). This largely reflects the expanding trade with China, and may also reflect the country's cost-competitiveness gains in recent years. However, projects might be delayed as prior compliance with environmental legislation is required.

Non-cost competitiveness developments

Finland's rank as one of the best EU performers in quality of products is increasingly challenged. The relative demise of the country's electronics sector (specifically the mobile phone industry) has had a strong negative impact on the volumes of high-tech products it exports. Among the best EU performers in productivity terms (see above), Finland currently has the lowest proportion of high-tech exports. At the same time, a sizeable increase in exports of medium- and medium-to-high tech exports has to a certain extent compensated for this (see Graph 3.4.8). Also, contrary to export quality indices, the country's export sophistication index seemed to have improved over the same period (Hausmann's export sophistication index) (IMF, 2017b). This at least partly attenuates worries about losses of non-cost competitiveness.

Exports of services by Finland are increasingly sophisticated and expanding. The country's trade balance in services has been negative for some time, but the deficit is slowly closing. In 2012, Finland accounted for 4.4 % of the total exports of IT services by the EU, slightly less than Sweden's share (6 %). This is noteworthy as Finland's overall weight in the EU economy is only about 1.5 % (Sweden's is 3.1 %). In 2016, exports of IT services (telecommunications, computer and information services) from Finland to the rest of the world were equivalent to 3.1 % of the country's GDP and represented almost one third of its total exports of services. That said, the balance of IT services exports might be slowly deteriorating, but this is compensated for by a swift rise in other business services.

Graph 3.4.8: **Share of high, medium-high, medium-low and low technology in total manufacturing exports — UK, Denmark, Netherlands, Germany, Sweden, Belgium, Austria, Finland**



Source: European Commission

Outlook

After several years of decline, non-cost competitiveness has become a concern, but cost competitiveness has almost recovered. The Finnish economy is immersed in a process of economic renewal, with a declining share of high-tech manufacturing in total value added and a growing share of high-tech knowledge-intensive services ([51]). However, the negative trend in total factor productivity growth in the past decade is worrisome for the sustainability of economic growth and highlights an insufficient level of innovation. Also, productivity increases are crucial to foster a transition to a more diversified economy (OECD, 2017b). As regards cost

([49]) A greenfield investment is a form of foreign direct investment where a parent company builds up its operations from scratch.

([50]) 17 projects originating in Canada, China, Germany, Japan, Russia, Sweden, Switzerland, UAE, the UK and the US.

([51]) The share of high-tech manufacturing in total value added declined from 6.7% in 2008 to 3.0% in 2015. The share of high-tech knowledge-intensive services grew from 4.7% in 2008 to 5.9% in 2015.

competitiveness, ongoing gains could be undermined if the current bargaining round were to set wage growth ahead of labour productivity growth for the remaining sectors (see Section 3.3).

3.4.2. BUSINESS ENVIRONMENT

Finland's institutional performance remains outstanding. In areas such as institutions, rule of law, judicial efficiency and independence, transparency of policies and public trust of politicians, Finland is still a world leader and continues to benefit from competitive advantages. According to the World Bank's Worldwide Governance Indicators (WGI), Finland is a world leader, or very close behind the leader, in all six WGI areas: voice and accountability; political stability and absence of violence and terrorism; government effectiveness; regulatory quality; rule of law; control of corruption. Its leading position is also generally stable over time (World Bank Group, 2017). Similar strengths are identified in the World Economic Forum's Global Competitiveness Index, where Finland ranks very high on all institutional aspects except investor protection (World Economic Forum - WEF, 2017).

In Finland there are no explicit national rules and procedures for companies to directly transfer their registered offices into and out of the country. This lack makes it more difficult and costly for companies to take advantage of cross-border business opportunities. Finnish Company Law contains specific rules only on transfers of registered office in the case of *societates Europaeae* (SEs) (i.e. public limited liability companies registered in accordance with EU corporate law).

Administrative and regulatory burden reduction is a priority. The country is benefiting from recent reforms to boost job creation and diminish regulatory burdens, e.g. the amended Postal Act and Decree, which entered into force in 2017 (Ministry of Transport and Communications, 2017a). Also, the Land Use and Building Act and building regulations have been modernised. However, Finland's performance on product market regulations remains below the EU average, even though it ranks quite high among the 35 OECD Members countries plus several emerging economies (OECD, 2017c). Cutting red tape and reducing the regulatory burden on businesses, in particular SMEs, are priority areas for the government. These are reflected in the government's key projects on deregulation, streamlining legal provisions and on improved conditions for businesses and entrepreneurs (Prime Minister's Office, 2017). Regular reports on progress made are published every 6 months (Ministry of Transport and Communications, 2018). The Council of Regulatory Impact Analysis was set up in 2016 to ensure the quality of legislative proposals and impact assessments.

Despite its electronics sector setback, Finland has become a world leader in digital transformation. After Denmark, Finland is the second most digital country in the EU and among the most digital countries in the world (European Commission, 2017d). Despite a lack of specific skills in several ICT niches, Finland's performance is particularly strong in digital skills, digital public services and integration of digital technologies. Strong e-leadership in combination with advanced digital infrastructure ensures that digitisation is well embedded in the overall entrepreneurial environment (European Commission, 2017d-e). Although the digital divide between urban and rural areas is still an issue, a decision in principle has been adopted to improve rural digitalisation. This will promote service provision and facilitate entrepreneurship in rural areas (Ministry of Transport and Communications, 2017c).

3.4.3. INFRASTRUCTURE INVESTMENT

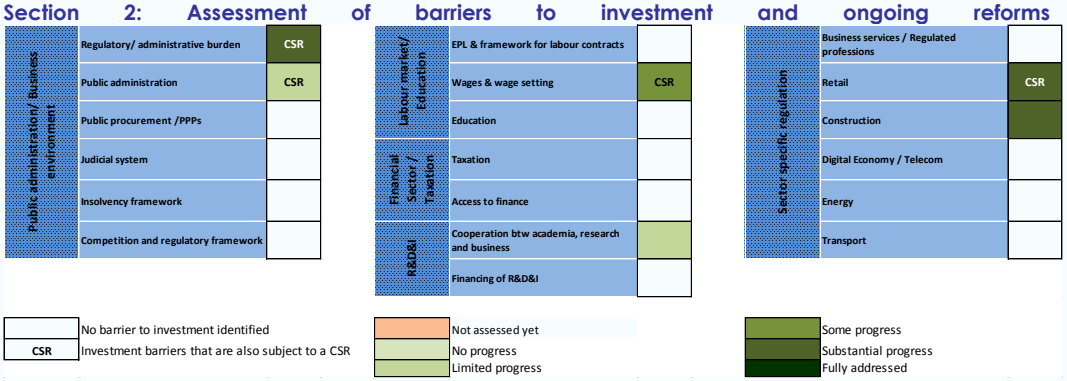
The quality of infrastructure investment has declined. The quality of roads, the rail network, ports, airports and energy networks remains high by EU standards (WEF 2017). In the past, this underpinned the competitiveness of Finnish firms, including in rural and remote locations. However, the recession has put public finances under pressure and led to some regular maintenance and upgrading of infrastructure having to be scaled down or postponed, especially with respect to roads and railways. This has caused a gradual and relative decline in quality compared with other economies.

Box 3.4.1: **Investment challenges and reforms in Finland**

Section 1: Macroeconomic perspective

At around 23% of GDP in the first three quarters of 2017, overall investment in Finland remained above EU average. Construction, the least productive thereof, accounted for about 13 % of GDP. This was the highest proportion in the EU, and on a rising trend. Investment in machinery and equipment remained below EU average, but has been catching up. Since 2009, investment in intellectual property had constantly declined, reflecting the major setback suffered by Finland's electronics industry. However, in the first three quarters of 2017, it bottomed out at around 4.2% of GDP, slightly above the EU average (3.8 % of GDP).

Section 2: Assessment of barriers to investment and ongoing reforms



Finland has maintained a good environment for doing business and cost competitiveness has clearly improved. The new wage setting practices in accordance with the Competitiveness Pact are under discussion between the social partners (see section 3.3). The government is working on improving the business environment further.

Main barriers to investment and priority actions under way

1/ The main barriers to investment are the cumulated loss of cost competitiveness and continued challenges in non-cost competitiveness. Wages have been frozen or even cut in the past few years, and the deals which have already been concluded for the next 2 years are rather moderate (see section 3.4). However, cumulated losses of cost-competitiveness have not yet been fully compensated. Also, it is not yet fully clear that wages agreed by export-oriented sectors will set the trend for the other sectors this year and in the future. The chronology of sectoral wage negotiations has some importance. Finally, certain obstacles to local bargaining persist for unorganised employers, mostly SMEs and start-ups (see section 3.3). Nevertheless, non-cost competitiveness, together with stagnating productivity growth has become the more fundamental issue. Economic activity has rebounded in key export markets, and higher capacity utilisation is prompting a rebound in equipment investment. However, after the setback of its electronics sector, Finland is experiencing a shift in specialisation towards intermediate goods and from high-tech industrial sectors to medium-tech industrial sectors. The decline in total factor productivity in the past decade is worrisome in this respect: it highlights an insufficient level of R&D and innovation investment to kick-start growth and diversify exports towards higher-tech goods. There is potential for further increasing cooperation between academia and businesses as an incentive to investment (see section 3.5).

2/ The regulatory environment continues to improve, as cutting red tape and reducing the regulatory burden on businesses, in particular SMEs, remain priority areas for the government. A lack of national rules and procedures for companies to directly transfer their registered offices into and out of Finland is among the country's weak points (see section 3.4).

3.5. SECTORAL POLICIES

3.5.1. INNOVATION AND R&D POLICIES

Finland's innovation leadership is being challenged. On the European Innovation Scoreboard, Finland is classified as an 'innovation leader'. However, its performance declined between 2010 and 2014 and has been static since then. Its strong points are the favourable framework conditions such as high-quality human resources, attractive R&D systems, an innovation-friendly environment, public and private funding of R&D and innovation, and intellectual assets. However, Finland experienced a drop in investment with the onset of the economic crisis in 2009. This led to a strong decrease in GDP, including in R&D, productivity and competitiveness.

Between 2009 and 2015, business R&D intensity sharply declined. One of the reasons for the decline is linked to disruptive technological change, which impacted on Nokia, by far the country's largest private spender on R&D (see also Section 3.4 on 'Investment'). Business expenditure on R&D decreased from 2.7 % of GDP in 2009 to 1.8 % in 2016, the steepest drop among EU countries (see Section 3.4). Public R&D intensity also fell sharply, from 1.1 % in 2009 to 0.9 % in 2016. However, Finland's improved economic outlook provides fiscal space for enhancing investment, including in R&D. The proposed 2018 budget includes an increase in grant and loan funding for research and innovation activities of over 10 %.

Finland's scientific performance, although good in overall terms, does not yet match in all areas the high level of public spending. On the positive side, Finland has witnessed an increase in international research cooperation ([52]), with improved scientific openness and internationalisation. Measures to improve financial incentives in the research system were initiated in 2013 and are being pursued, including through a new university funding model. However, despite being third among Member States for public R&D intensity, Finland ranks 11th for scientific publications within the top 10 % most cited worldwide as a percentage of the country's total publications, posting a score of 10.7 % (2014 results, EU average: 11.1 %)**(**[53]**)**. Basic research, including programmes to tackle grand societal challenges (Reale, 2017), still receive strong funding from the government, and the funding of applied research is expected to increase as of 2018. Indeed, Business Finland, a new organisation created from the merger of Tekes and Finpro ([54]) to provide funding for innovation and the internationalisation of firms has received a larger budget than its predecessor organisations ([55]).

The proportion of fast-growing innovative firms remains below the EU average ([56]). Despite activities fostering start-ups ([57]), start-up rates remain relatively low and there is potential for more targeted policy action. At the same time, Finland's policy focus is currently shifting towards creating an attractive business innovation environment and increasing the diversification and competitiveness of the country's economy. Recent action includes the identification of priority areas (cleantech, bioeconomy, digital ICT and health) to focus investment on technology-intensive sectors with the potential for upscaling.

Despite the increased focus on building a well-functioning innovation ecosystem, public support remains low. Public-sector funding of business R&D stood at only 0.08 % of GDP in 2015, a modest proportion compared to other innovation leaders, and has been stagnating since 2011. At the same time, private co-financing of public research, which is an important basis for knowledge transfer and an indicator for science-business cooperation, is below the EU average

([52]) International co-publications as a percentage of total scientific publications increased from 48.5% in 2007 to 64.2% in 2016.

([53]) The proportion of highly-cited publications relative to public R&D intensity provides a measure of the efficiency of the Finnish research and innovation system.

([54]) Tekes was the funding agency for innovation, while Finpro was the agency responsible for supporting the internationalisation of Finnish SMEs. The Act on Business Finland entered into force on 1 January 2018.

([55]) Grant authorisations of Business Finland are proposed to reach EUR 271 million in 2018 (+12.4% compared to 2017) and loan authorisations EUR 157 million (+6.8%), while key project funding is due to reach EUR 49 million (+12.2%) In addition, the budget of the VTT Technical Research Centre will receive an extra EUR 2 million to support SMEs and help firms enter growing export markets.

([56]) The share of employment in high-growth enterprises is 10.1% in 2015, down from 11.7% in 2013 and ranking 17th in the EU.

([57]) Including schemes such as Aalto University's 'Start-Up Sauna'.

(2015, Finland: 0.047 % of GDP, EU 0.049 % of GDP). There is also still potential for further boosting knowledge transfer (OECD, 2017b). In its national reform programme released in spring 2017, the government declared science-industry collaboration as one of its priorities for raising entrepreneurial activity and the commercialisation of scientific output. However, the programme does not directly address: (i) investment in R&D and other intangibles; (ii) the obstacles that hamper innovation and technology diffusion between firms; and (iii) the issue of disruptive or radical innovations.

The Research and Innovation Council chaired by the Prime Minister has published a joint 2030 vision to make Finland an attractive system for research and innovation (Valtioneuvosto, 2017). The vision includes a target to achieve an R&D intensity of 4 % of GDP by 2020. Additional public R&D funding schemes to support skills developments and training are being considered by the government. Of particular note is the plan to boost the number of science and engineering graduates.

3.5.2. CLIMATE AND ENERGY

Finland is projected to only slightly miss its 2020 greenhouse gas emission reduction target in the non-emissions trading system (non-ETS) sectors. In fact, it is expected to miss it by less than 1 percentage point. However, according to preliminary estimates, Finland has missed its 2016 interim target by 3 pps. To comply with the Effort Sharing Decision ([58]), Finland will need to make use of the flexibility mechanisms: surplus allocations accumulated over 2013-2015 when Finland over-achieved its target should suffice to cover deficits in some of the later years of the period. In the land use, land use change and forestry sector, Finland only has a slight accounted CO2 emission ([59]) (+0.7 Mt CO2-eq. on average in the period 2013-2015), despite the size of its forests ([60]). For comparison, the annual average of the EU-28 accounted for removals of -119.0 Mt CO2-eq.

The share of renewable energy in gross final energy consumption reached 38.7 % in 2016, already exceeding its 2020 target of 38 %. This recent decrease needs to be put in perspective with a constant increase in the longer term, and reflects the fact that companies have flexibility concerning the amount of biofuels to be allocated to each year.. The renewable energy share is more than 50 % in the heating and cooling sector and about a third in electricity generation. Finland has recently announced the testing of a premium scheme to look for cost-effective options to support renewable electricity by inviting tenders for a total of 2 TWh of annual electricity production. The intention is to open up the different forms of renewable energy production to competition, but the specific design of this instrument is still under discussion.

Finland's 2016 primary and final energy consumption figures were already below their 2020 targets. The economy's energy intensity is high and above the EU average. That can be partly explained by climatic and structural factors: the energy-intensive pulp and paper sector on its own represents a quarter of Finland's energy consumption. This is the case even if Finland's industries are progressive in comparison to their global competitors. Energy efficiency agreements (voluntary agreements) are used to promote energy savings in a broad range of industrial sectors and local communities. New agreements for the period 2017-2025 have been signed and are expected to contribute about half of Finland's energy savings obligations linked to the implementation of the EU Energy Efficiency Directive.

Finnish industry shows strong leadership in clean energy innovation and private R&D spending, including the development of bioenergy from by-products. It is also the EU country investing the most in public R&D in areas related to the Energy Union. However, the government has reduced energy-related R&D expenditure sharply, from around EUR 270 million in 2010 to EUR 153 million in 2017. The number of patents in Energy Union areas per million

([58]) The Effort Sharing Decision establishes binding annual greenhouse gas emission targets for Member States for the period 2013–2020. These targets concern emissions from most sectors not included in the EU Emissions Trading System (EU ETS), such as transport, buildings, agriculture and waste.

inhabitants is also significantly above the EU average. Based on a long history of promoting a sustainable management of its forests, Finland aims to develop further bio-economy activities, although it will have to take account of the potential implications of future EU legislation on climate policies post-2020.

The electricity market is competitive. In 2017, the electricity interconnection level of Finland was 29 %, well above the 2020 target of 10 %. Finland has a very dynamic electricity market. There is widespread deployment of smart meters and high annual switching rates by consumers from one electricity supplier to another. However, wholesale electricity prices in Finland remain higher than in its Nordic neighbours because of insufficient capacity in the transmission interconnections in periods of high demand. An additional interconnection with Sweden is planned, and the European Commission granted it the status of project of common interest in November 2017. The Olkiluoto-3 new nuclear power plant project is experiencing significant delays, but could be operational in 2019.

Until recently, Finland imported all its natural gas from Russia, by pipeline. Since 2016, a new floating liquefied natural gas (LNG) import terminal has been opened in Pori and two more are under construction for industrial use. A third LNG import terminal will be connected to the grid. The Baltic Connector gas infrastructure project linking the Finnish gas grid to the Baltic states will also help diversify sources of imports. Once this project is operational, the gas markets will be open to competition (by 2020). However, additional steps are needed to create a regional gas market with the Baltic states and to ensure effective competition.

Finland has adopted concrete targets and objectives to contribute to the EU's medium- and long-term climate and energy objectives. In 2016, the government adopted a report on its national energy and climate strategy for 2030 and, in 2017, a report on its medium-term climate change plan for 2030. Finland notably plans to: (i) phase out the use of coal for energy by 2030; (ii) have renewable energy sources account for over 50 % of energy consumption by 2030; and (iii) increase the share of biofuels in road transport to 30 % by 2030. The design of the policies and measures to implement such objectives is ongoing. Particular attention is paid to the transport sector for meeting Finland's non-ETS greenhouse gas emission reduction target for 2030.

3.5.3. COMPETITION IN SERVICES

The regulatory environment for the retail sector continues to improve thanks to recent reforms. Amendments to the Land Use and Building Act came into force in May 2017 ([61]). As a result, the size threshold for large stores, which have to meet additional requirements when setting up, has been raised from 2 000 to 4 000 m^2. Also, the level of detail in local plans has been decreased for the retail sector, which should allow stores to develop their concepts more freely without limitations on their location. The government also intends to publish new national land-use guidelines based on the reformed Land Use and Building Act. This would allow for the establishment of significant retail units outside built-up areas. In the longer term, there is an intention to propose a fully modernised legislative framework on planning.

Reform of the Alcohol Act is under way. The comprehensive reform of the Alcohol Act was approved by Parliament in December 2017. Most provisions entered into force on 1 March 2018, some on 1 January 2018. The reform shifts the balance somewhat away from preventing the negative impact of alcohol use and closer to the legitimate interests of Finnish businesses and industry. At the same time, it modernises the rules and does away with outdated, cumbersome and unnecessary regulation.

Reform pressure in the pharmacy sector is building. Regulations governing entry, conduct and transfer of ownership of pharmacies are relatively strict from an EU perspective (Ecorys 2007). Also, the Finnish Competition and Consumer Authority (FCCA) has received complaints about the sector, for instance on the pricing of pharmaceuticals, and has carried out sector investigations (FCCA, 2012). In its mid-term review, the government announced that towards the end of its term it would focus on reforming the pharmacy system and medicine services (Prime Minister's Office, 2017).

([61]) Act 230/2017 amending Act 132/1999 on land use and building.

Upstream distributors are less strictly regulated. There are three wholesalers serving all private pharmacies. All three are single-channel distributors who have exclusivity agreements with the pharmacies so that each private pharmacy buys its full range of pharmaceuticals from one wholesaler. The advantage of a single-channel system, which is not unique to Finland but less common in the EU than multichannel distribution, is that counterfeit medicines are unlikely to enter the pharmacy system whereas the use of generic medicines is promoted (OECD, 2014). The disadvantage — as witnessed in 2017 — is exposure to operational problems at either of the two wholesalers, as pharmacies are unable in such a situation to source their supplies from the other wholesaler (FCCA, 2017).

The reform of taxi services will enter into force in 2018. As part of the government's key projects (Prime Minister's Office, 2017), an overhaul of all legislation governing land, water and air transport is under way. The intention is to bring modernised transport market legislation together under a single framework that will be implemented in three phases. In the first phase, the new Act on transport services will replace the previous Taxi Act as well as the Act and Decree on the professional qualifications of taxi drivers. The new rules on the taxi sector will enter into force on 1 July 2018 (Ministry of Transport and Communications, 2017e).

3.5.4. COLLABORATIVE ECONOMY

The collaborative economy is a small but rapidly growing segment of the economy. It is estimated that the value of transactions in the Finnish collaborative economy accounted for a little over EUR 100 million in 2016. The market is expected to grow more than tenfold in value until 2020 (Ministry of Economic Affairs and Employment, 2017d). Collaborative financing (crowdfunding — see also section 3.2) represented around 65 % of the total peer-to-peer value in 2016 and is expected to remain the most important form, while the fastest growth is expected in peer-to-peer transportation and car-sharing services (Ministry of Economic Affairs and Employment, 2017).

Finland is generally keen to promote the entrepreneurship and innovation opportunities offered by the collaborative economy. The preparation and adoption of the new Act on transport services (see section 3.5.3) did, however, prompt intense political debates. With the new Act, the government aims to modernise the provision of transport services and enable new business models (Ministry of Transport and Communications, 2017e). Following intense debates and political opposition, the law omits core aspects initially intended to promote collaborative transport services. Nevertheless, to encourage competition and new business models, the law includes rules on opening up transport registers and data, as well as rules on the interoperability of ticketing and payment systems.

A recent Supreme Court ruling sets a precedent for all platform-based ride-hailing services in Finland. In 2017, the Supreme Court upheld an earlier ruling in lower courts to the effect that a taxi licence is needed for drivers offering platform-based ride-hailing services on a professional basis (Supreme Court, 2017).

Regulations are supportive of peer-to-peer accommodation. Collaborative accommodation services are widely used in Finland, facilitated by a regulatory framework that enables citizens to rent out their properties short-term. Income is taxable as capital income from the first euro. However, incurred costs can be deducted (pro rata), except for the value of any own work carried out, which is not deductible (Vero, 2015; Ministry of Economic Affairs and Employment, 2016).

ANNEX A: OVERVIEW TABLE

Commitments	Summary assessment ([62])
2017 Country-specific recommendations (CSRs)	
CSR 1: Pursue its fiscal policy in line with the requirements of the preventive arm of the Stability and Growth Pact, which entails achieving its medium-term budgetary objective in 2018, taking into account the allowances linked to unusual events, the implementation of the structural reforms and investments for which a temporary deviation is granted. Ensure timely adoption and implementation of the administrative reform to improve cost-effectiveness of social and healthcare services.	Finland has made **Limited Progress** in addressing CSR 1. This overall assessment of CSR 1 does not include an assessment of compliance with the Stability and Growth Pact.
• Pursue its fiscal policy in line with the requirements of the preventive arm of the Stability and Growth Pact, which entails achieving its medium-term budgetary objective in 2018, taking into account the allowances linked to unusual events, the implementation of the structural reforms and investments for which a temporary deviation is granted.	• **The compliance assessment with the Stability and Growth Pact will be included in Spring when final data for 2017 will be available.**
• Ensure timely adoption and implementation of the administrative reform to improve cost-	• **Limited Progress** has been achieved in ensuring the adoption and implementation of the social and health care reform. The government has

([62]) The following categories are used to assess progress in implementing the 2017 country-specific recommendations (CSRs):

No progress: The Member State has not credibly announced nor adopted any measures to address the CSR. This category covers a number of typical situations, to be interpreted on a case-by-case basis taking into account country-specific conditions. They include the following:
no legal, administrative, or budgetary measures have been announced
in the national reform programme,
in any other official communication to the national Parliament/relevant parliamentary committees or the European Commission,
publicly (e.g. in a press statement or on the government's website);
no non-legislative acts have been presented by the governing or legislative body;
the Member State has taken initial steps in addressing the CSR, such as commissioning a study or setting up a study group to analyse possible measures to be taken (unless the CSR explicitly asks for orientations or exploratory actions). However, it has not proposed any clearly-specified measure(s) to address the CSR.

Limited progress: The Member State has:
announced certain measures but these address the CSR only to a limited extent; and/or
presented legislative acts in the governing or legislative body but these have not been adopted yet and substantial further, non-legislative work is needed before the CSR is implemented;
presented non-legislative acts, but has not followed these up with the implementation needed to address the CSR.

Some progress: The Member State has adopted measures
that partly address the CSR; and/or
that address the CSR, but a fair amount of work is still needed to address the CSR fully as only a few of the measures have been implemented. For instance, a measure or measures have been adopted by the national Parliament or by ministerial decision, but no implementing decisions are in place.

Substantial progress: The Member State has adopted measures that go a long way towards addressing the CSR and most of them have been implemented.

Full implementation: The Member State has implemented all measures needed to address the CSR appropriately.

effectiveness of social and healthcare services.	presented large parts of the draft legislation on the reform of the social and healthcare services in the Parliament. However, the formal adoption of the reform has not taken place yet and the effective implementation of the reform has been delayed by one year (January 2020). The 'Freedom of Choice' legislation was subject to a second public consultation round which finished in the end of 2017. The government's proposal for the law is expected to be presented in the Parliament during the first half of 2018.
CSR 2: Promote the further alignment of wages with productivity developments, fully respecting the role of social partners. Take targeted active labour market policy measures to address employment and social challenges, provide incentives to accept work and promote entrepreneurship.	Finland has made **Some Progress** in addressing CSR 2.
• Promote the further alignment of wages with productivity developments, fully respecting the role of social partners.	• **Some Progress** has been made since the importance of preserving cost competitiveness has been widely recognised. The first results from the wage negotiations are promising, and the proposed wage increases do not appear to compromise cost competitiveness, while simultaneously guaranteeing some improvement in purchasing power. It remains to be seen whether a coordinated wage-setting model, which would ensure favourable employment outcomes, emerges.
• Take targeted active labour market policy measures to address employment and social challenges,	• **Some Progress** has been made as some activation measures have been introduced, such as the interviews to all registered unemployed jobseekers every 3 months. Financing for the public employment service has been increased in 2018.
• provide incentives to accept work	• **Some Progress** is observed in increasing incentives to accept work: The active model of unemployment benefits is expected to increase incentives to take up a job. Reduced childcare fees in particular for small and medium income families, should encourage working. These actions entered into force in early 2018.
• and promote entrepreneurship.	• **Some Progress** has been made as some measures have been introduced to prompt the unemployed to start a company: the unemployed can continue receiving unemployment benefit during four months after starting a company.

	This change was implemented in 2018.
CSR 3: Continue to improve the regulatory framework and reduce the administrative burden to increase competition in services and to promote investment.	Finland has made **Substantial Progress** in addressing CSR 3
• Continue to improve the regulatory framework and reduce the administrative burden to increase competition in services and	• **Substantial Progress** has been made in improving the regulatory framework and reducing the administrative burden. The amended Land Use and Building Act has entered into force and the new Alcohol Act and the first phase of the new transport code were adopted in late 2017 simplifying earlier regulation. Progress has also been made on the framework governing collaborative economy service providers.
• to promote investment.	• **Some Progress** has been made as the availability of loans and export guarantees for SMEs has improved. In addition, a new government agency to promote exports, innovation and FDI - Business Finland - has been created by merging Finpro and Tekes.
Europe 2020 (national targets and progress)	
Employment rate target set in the NRP: 78 %.	The employment rate in Finland in 2017 increased to 74 % (based on the average of first three quarters), an improvement of 0.9 % points since 2016.
R&D target**:** 4 % of GDP	2.75% (2016) No progress towards the target. While public R&D intensity has grown by 0.1 % per year over the 2007-2016 period, business expenditure on R&D as a percentage of GDP decreased by 3.2 % per year over the same period, resulting in an annual decline of total R&D intensity by 2.2% since 2007. Finland will not reach its national target for 2020 unless the trend in business expenditure can be reversed
Greenhouse gas emissions, national target: Non-ETS target for 2020: -16 % compared to 2005	**Projected emissions in 2020: -15 % compared to 2005** According to the latest national projections submitted to the Commission, and taking into account existing measures, Finland is expected to

	reduce its emissions by 15 % in 2020 compared to 2005. Finland will consequently fall short of its target by 1 pp.
Non-ETS interim target for 2016: -11 % compared to 2005	**Non-ETS emissions in 2016: -8 %** Finland went short of its interim target for 2016 by a 3 pps.
2020 renewable energy target: 38%	Despite a significantly lower contribution from biofuels use in transport compared to 2015, the share of renewable energy in gross final energy consumption reached 38.7% in 2016, already exceeding the 2020 target. The contribution of heating and cooling, with almost a 54% RES-share for that sector, is significant.
Energy efficiency, 2020 energy consumption targets: 35.9 Mtoe (primary energy consumption); 26.7 Mtoe (final energy consumption).	Finland increased its primary energy consumption by 4 % from 31.8 Mtoe in 2015 to 33.1 Mtoe in 2016. Final energy consumption increased by 4 % from 24.2 Mtoe in 2015 to 25.2 Mtoe in 2016. Even if Finland has already achieved levels of primary and final energy consumption which are below the indicative national 2020 targets, it would need to make an effort to keep these levels until 2020.
Early school leaving (ESL) target: 8 %.	Finland reduced early school leaving in 2016 to 7.9% a sizeable reduction of 1.3 pps compared to the previous year.
Tertiary education target: 42 % of population aged 30-34.	Finland increased tertiary attainment by 0.6 pps to 46.1% in 2016.
Target for reducing the number of people at risk of poverty or social exclusion, expressed as an absolute number of people: 770 000 (base year 2010: 911 000).	In 2016, the number of people in Finland at risk of poverty or social inclusion was 896 000, a decrease of 14 000 since 2008 and a decrease of 7 000 since 2015.

ANNEX B: MACROECONOMIC IMBALANCE PROCEDURE SCOREBOARD

Table B.1: **The MIP Scoreboard for Finland**

			Thresholds	2011	2012	2013	2014	2015	2016
External imbalances and competitiveness	**Current account balance, % of GDP**	3 year average	**-4%/6%**	0.5	-0.8	-1.8	-1.6	-1.3	-1.2
	Net international investment position	% of GDP	**-35%**	15.1	11.7	3.9	-3.2	-6.1	-2.3
	Real effective exchange rate - 42 trading partners, HICP deflator	3 year % change	**±5% (EA) ±11% (Non-EA)**	-2.8	-8.3	0.2	2.7	2.2	0.5
	Export market share - % of world exports	5 year % change	**-6%**	-23.6	-31.0	-31.0	-26.1	-21.1	-14.1
	Nominal unit labour cost index (2010=100)	3 year % change	**9% (EA) 12% (Non-EA)**	9.4	6.0	9.1	7.8	3.9	2.1
Internal imbalances	**House price index (2015=100), deflated**	1 year % change	**6%**	0.0	-0.4	-1.3	-1.6	-0.3	-0.3
	Private sector credit flow, consolidated	% of GDP	**14%**	3.6	7.4	2.8	1.5	6.9	2.2
	Private sector debt, consolidated	% of GDP	**133%**	145.4	148.6	147.7	149.6	152.9	149.3
	General government gross debt	% of GDP	**60%**	48.5	53.9	56.5	60.2	63.6	63.1
	Unemployment rate	3 year average	**10%**	8.1	8.0	7.9	8.2	8.8	9.0
	Total financial sector liabilities, non-consolidated	1 year % change	**16.5%**	28.7	-1.1	-11.7	8.9	1.2	4.5
Employment indicators	**Activity rate - % of total population aged 15-64**	3 year change in pp	**-0.2 pp**	-1.1	0.2	0.7	0.5	0.6	0.7
	Long-term unemployment rate - % of active population aged 15-74	3 year change in pp	**0.5 pp**	0.5	0.2	-0.3	0.2	0.7	0.6
	Youth unemployment rate - % of active population aged 15-24	3 year change in pp	**2 pp**	3.6	-2.5	-1.5	0.4	3.4	0.2

(1) This table provides data as published under the Alert Mechanism Report 2018, which reports data as of 24 Oct 2017. Please note that figures reported in this table may therefore differ from more recent data elsewhere in this document..
Source: European Commission 2017, Statistical Annex to the Alert Mechanism Report 2018, SWD(2017) 661.

ANNEX C: STANDARD TABLES

Table C.1: **Financial market indicators**

	2012	2013	2014	2015	2016	2017
Total assets of the banking sector (% of GDP)(1)	300.5	258.3	281.9	265.3	253.8	207.4
Share of assets of the five largest banks (% of total assets)	79.0	84.1	79.8	75.0	66.5	-
Foreign ownership of banking system (% of total assets)(2)	75.2	71.2	71.6	67.5	65.5	56.2
Financial soundness indicators:2)						
- non-performing loans (% of total loans)(3)	0.8	0.7	1.4	1.3	1.3	1.3
- capital adequacy ratio (%)	17.2	16.3	17.5	23.8	24.6	22.6
- return on equity (%)(4)	8.9	8.1	9.1	8.3	8.7	4.6
Bank loans to the private sector (year-on-year % change)(1)	7.1	6.3	3.8	0.2	1.6	2.5
Lending for house purchase (year-on-year % change)(1)	5.6	2.3	1.7	2.5	2.3	2.2
Loan to deposit ratio(1)	139.9	139.2	139.6	136.7	139.1	135.4
Central Bank liquidity as % of liabilities	-	-	0.4	0.3	1.9	2.4
Private debt (% of GDP)	148.6	147.7	149.6	152.9	149.3	-
Gross external debt (% of GDP)(2) - public	47.8	45.9	53.9	52.0	48.7	44.8
- private	43.7	43.7	43.9	48.4	44.4	50.8
Long-term interest rate spread versus Bund (basis points)*	39.1	29.2	28.6	22.4	27.5	23.3
Credit default swap spreads for sovereign securities (5-year)*	56.4	25.1	24.0	20.6	24.4	19.0

(1) Latest data Q3 2017. Includes not only banks but all monetary financial institutions excluding central banks.
(2) Latest data Q2 2017
(3) As per ECB definition of gross non-performing debt instruments
(4) Quarterly values are not annualised
* Measured in basis points.
Source: European Commission (long-term interest rates, private debt); World Bank (gross external debt); ECB (all other indicators).

Table C.2: **Headline Social Scoreboard indicators**

	2012	2013	2014	2015	2016	2017 [5]
Equal opportunities and access to the labour market						
Early leavers from education and training (% of population aged 18-24)	8.9	9.3	9.5	9.2	7.9	:
Gender employment gap (pps)	3.0	2.8	1.9	2.1	3.3	3.5
Income inequality, measured as quintile share ratio (S80/S20)	3.7	3.6	3.6	3.6	3.6	:
At-risk-of-poverty or social exclusion rate[1] (AROPE)	17.2	16.0	17.3	16.8	16.6	:
Young people neither in employment nor in education and training (% of population aged 15-24)	8.6	9.3	10.2	10.6	9.9	:
Dynamic labour markets and fair working conditions†						
Employment rate (20-64 years)	74.0	73.3	73.1	72.9	73.4	74.0
Unemployment rate[2] (15-74 years)	7.7	8.2	8.7	9.4	8.8	8.6
Gross disposable income of households in real terms per capita[3] (Index 2008=100)	:	:	101.4	102.5	103.1	:
Public support / Social protection and inclusion						
Impact of social transfers (excluding pensions) on poverty reduction[4]	50.9	55.3	53.6	53.7	57.0	:
Children aged less than 3 years in formal childcare	29.0	28.0	33.2	32.5	32.7	:
Self-reported unmet need for medical care	4.6	4.3	3.3	4.3	4.1	:
Individuals who have basic or above basic overall digital skills (% of population aged 16-74)	:	:	:	74.0	73.0	76.0

† The Social Scoreboard includes 14 headline indicators, of which 12 are currently used to compare Member States performance. The indicators "participants in active labour market policies per 100 persons wanting to work" and "compensation of employees per hour worked (in EUR)" are not used due to technical concerns by Member States. Possible alternatives will be discussed in the relevant Committees.
(1) People at risk of poverty or social exclusion (AROPE): individuals who are at risk of poverty (AROP) and/or suffering from severe material deprivation (SMD) and/or living in households with zero or very low work intensity (LWI).
(2) Unemployed persons are all those who were not employed but had actively sought work and were ready to begin working immediately or within two weeks.
(3) Gross disposable household income is defined in unadjusted terms, according to the draft Joint Employment Report 2018.
(4) Reduction in percentage of the risk of poverty rate, due to social transfers (calculated comparing at-risk-of poverty rates before social transfers with those after transfers; pensions are not considered as social transfers in the calculation).
(5) Average of first three quarters of 2017 for the employment rate and gender employment gap.
Source: European Commission

Table C.3: **Labour market and education indicators**

Labour market indicators	**2012**	**2013**	**2014**	**2015**	**2016**	**2017** [5]
Activity rate (15-64)	75.2	75.2	75.4	75.8	75.9	:
Employment in current job by duration						
From 0 to 11 months	17.0	16.5	16.1	16.0	17.6	:
From 12 to 23 months	9.7	9.6	9.1	8.4	8.6	:
From 24 to 59 months	14.7	15.3	16.7	16.4	14.9	:
60 months or over	58.3	58.4	57.9	58.9	58.7	:
Employment growth* (% change from previous year)	0.9	-0.7	-0.5	-0.1	0.3	0.5
Employment rate of women (% of female population aged 20-64)	72.5	71.9	72.1	71.8	71.7	72.2
Employment rate of men (% of male population aged 20-64)	75.5	74.7	74.0	73.9	75.0	75.7
Employment rate of older workers* (% of population aged 55-64)	58.2	58.5	59.1	60.0	61.4	62.2
Part-time employment* (% of total employment, aged 15-64)	14.1	14.0	14.1	14.1	14.9	15.1
Fixed-term employment* (% of employees with a fixed term contract, aged 15-64)	15.5	15.3	15.4	15.1	15.6	16.1
Transition rate from temporary to permanent employment (3-year average)	36.1	31.4	31.1	28.8	:	:
Long-term unemployment rate[1] (% of labour force)	1.6	1.7	1.9	2.3	2.3	2.1
Youth unemployment rate (% active population aged 15-24)	19.0	19.9	20.5	22.4	20.1	20.1
Gender gap in part-time employment	10.3	10.6	10.1	9.0	10.2	10.7
Gender pay gap[2] (in undadjusted form)	19.2	18.8	18.4	17.3	:	:
Education and training indicators	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Adult participation in learning (% of people aged 25-64 participating in education and training)	24.5	24.9	25.1	25.4	26.4	:
Underachievement in education[3]	12.3	:	:	13.6	:	:
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	45.8	45.1	45.3	45.5	46.1	:
Variation in performance explained by students' socio-economic status[4]	9.4	:	:	10.0	:	:

* Non-scoreboard indicator
(1) Long-term unemployed are people who have been unemployed for at least 12 months.
(2) Difference between the average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. It is defined as "unadjusted", as it does not correct for the distribution of individual characteristics (and thus gives an overall picture of gender inequalities in terms of pay). All employees working in firms with ten or more employees, without restrictions for age and hours worked, are included.
(3) PISA (OECD) results for low achievement in mathematics for 15 year-olds.
(4) Impact of socio-economic and cultural status on PISA (OECD) scores. Values for 2012 and 2015 refer respectively to mathematics and science.
(5) Average of first three quarters of 2017, unless for the youth unemployment rate (annual figure).
Source: European Commission, OECD

Table C.4: **Social inclusion and health indicators**

	2012	2013	2014	2015	2016	2017
Expenditure on social protection benefits* (% of GDP)						
Sickness/healthcare	7.4	7.5	7.5	7.2	:	:
Disability	3.4	3.4	3.4	3.2	:	:
Old age and survivors	11.9	12.5	13.0	13.2	:	:
Family/children	3.2	3.3	3.2	3.2	:	:
Unemployment	2.0	2.3	2.6	2.7	:	:
Housing	0.5	0.6	0.6	0.7	:	:
Social exclusion n.e.c.	0.9	0.9	0.9	0.9	:	:
Total	29.3	30.3	31.1	31.1	:	:
of which: means-tested benefits	1.5	1.6	1.8	1.9	:	:
General government expenditure by function (% of GDP, COFOG)						
Social protection	23.8	24.8	25.4	25.6	:	:
Health	8.2	8.3	8.3	7.2	:	:
Education	6.4	6.4	6.4	6.2	:	:
Out-of-pocket expenditure on healthcare (% of total health expenditure)	18.7	19.0	19.0	19.9	:	:
Children at risk of poverty or social exclusion (% of people aged 0-17)*	14.9	13.0	15.6	14.9	14.7	:
At-risk-of-poverty rate[1] (% of total population)	13.2	11.8	12.8	12.4	11.6	:
In-work at-risk-of-poverty rate (% of persons employed)	3.8	3.7	3.7	3.5	3.1	:
Severe material deprivation rate[2] (% of total population)	2.9	2.5	2.8	2.2	2.2	:
Severe housing deprivation rate[3], by tenure status						
Owner, with mortgage or loan	0.3	0.1	0.2	0.2	0.1	:
Tenant, rent at market price	3.0	2.0	2.4	1.8	2.4	:
Proportion of people living in low work intensity households[4] (% of people aged 0-59)	9.3	9.0	10.0	10.8	11.4	:
Poverty thresholds, expressed in national currency at constant prices*	12082	12009	11965	11852	11815	:
Healthy life years (at the age of 65)						
Females	9.0	:	9.3	9.0	:	:
Males	8.4	:	8.8	9.3	:	:
Aggregate replacement ratio for pensions[5] (at the age of 65)	0.5	0.5	0.5	0.5	0.5	:
Connectivity dimension of the Digital Economy and Society Inedex (DESI)[6]	:	:	56.1	61.0	61.7	64.5
GINI coefficient before taxes and transfers*	48.2	48.5	49.1	49.2	50.3	:
GINI coefficient after taxes and transfers*	25.9	25.4	25.6	25.2	25.4	:

* Non-scoreboard indicator

(1) At-risk-of-poverty rate (AROP): proportion of people with an equivalised disposable income below 60 % of the national equivalised median income.

(2) Proportion of people who experience at least four of the following forms of deprivation: not being able to afford to i) pay their rent or utility bills, ii) keep their home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) enjoy a week of holiday away from home once a year, vi) have a car, vii) have a washing machine, viii) have a colour TV, or ix) have a telephone.

(3) Percentage of total population living in overcrowded dwellings and exhibiting housing deprivation.

(4) People living in households with very low work intensity: proportion of people aged 0-59 living in households where the adults (excluding dependent children) worked less than 20 % of their total work-time potential in the previous 12 months.

(5) Ratio of the median individual gross pensions of people aged 65-74 relative to the median individual gross earnings of people aged 50-59.

(6) Fixed broadband take up (33%), mobile broadband take up (22%), speed (33%) and affordability (11%), from the Digital Scoreboard.***Source:*** European Commission, OECD

Table C.5: **Product market performance and policy indicators**

Performance Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Labour productivity (real, per person employed, year-on-year % change)							
Labour productivity in Industry	9.61	-2.11	-8.02	4.69	2.95	0.02	2.08
Labour productivity in Construction	5.73	-1.22	-4.34	0.38	-2.09	1.94	-0.07
Labour productivity in Market Services	3.18	3.99	1.20	-1.93	-0.32	0.21	0.85
Unit labour costs (ULC) (whole economy, year-on-year % change)							
ULC in Industry	-9.53	4.65	11.11	-2.85	-0.96	2.41	-0.71
ULC in Construction	-5.32	4.75	8.12	2.98	2.20	-0.72	1.05
ULC in Market Services	-1.02	1.31	2.12	4.58	0.84	0.86	0.96
Business Environment	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Time needed to enforce contracts(1) (days)	375.0	375.0	375.0	375.0	375.0	375.0	375.0
Time needed to start a business(1) (days)	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Outcome of applications by SMEs for bank loans(2)	0.31	0.06	0.23	0.41	0.57	0.23	0.26
Research and innovation	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
R&D intensity	3.73	3.64	3.42	3.29	3.17	2.90	2.75
General government expenditure on education as % of GDP	6.60	6.50	6.40	6.40	6.40	6.20	na
Persons with tertiary education and/or employed in science and technology as % of total employment	49	49	50	51	52	52	53
Population having completed tertiary education(3)	32	33	33	34	35	36	36
Young people with upper secondary level education(4)	84	85	86	86	86	87	88
Trade balance of high technology products as % of GDP	-0.33	-0.74	-0.87	-1.02	-0.98	-1.22	na
Product and service markets and competition					**2003**	**2008**	**2013**
OECD product market regulation (PMR)(5), overall					1.49	1.34	1.29
OECD (PMR)(5), retail					2.86	2.89	2.86
OECD (PMR)(5), professional services					0.61	0.71	0.62
OECD (PMR)(5), network industries(6)					2.72	2.61	2.47

(1) The methodologies, including the assumptions, for this indicator are shown in detail here: http://www.doingbusiness.org/methodology.
(2) Average of the answer to question Q7B_a. "[Bank loan]: If you applied and tried to negotiate for this type of financing over the past six months, what was the outcome?". Answers were codified as follows: zero if received everything, one if received most of it, two if only received a limited part of it, three if refused or rejected and treated as missing values if the application is still pending or don't know.
(3) Percentage population aged 15-64 having completed tertiary education.
(4) Percentage population aged 20-24 having attained at least upper secondary education.
(5) Index: 0 = not regulated; 6 = most regulated. The methodologies of the OECD product market regulation indicators are shown in detail here: http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm
(6) Aggregate OECD indicators of regulation in energy, transport and communications (ETCR).
Source: European Commission; World Bank — Doing Business (for enforcing contracts and time to start a business); OECD (for the product market regulation indicators); SAFE (for outcome of SMEs' applications for bank loans).

Table C.6: **Green growth**

Green growth performance		2011	2012	2013	2014	2015	2016
Macroeconomic							
Energy intensity	kgoe / €	0.19	0.18	0.18	0.19	0.18	0.18
Carbon intensity	kg / €	0.35	0.33	0.34	0.32	0.30	-
Resource intensity (reciprocal of resource productivity)	kg / €	0.97	0.95	1.08	0.91	0.90	0.95
Waste intensity	kg / €	-	0.49	-	0.51	-	-
Energy balance of trade	% GDP	-3.8	-2.6	-2.5	-2.3	-1.5	-1.2
Weighting of energy in HICP	%	7.52	8.37	8.12	7.84	7.63	7.09
Difference between energy price change and inflation	%	17.2	-3.2	-1.6	-2.6	-2.3	-1.3
Real unit of energy cost	% of value added	16.9	17.2	16.7	15.8	-	-
Ratio of environmental taxes to labour taxes	ratio	0.14	0.13	0.13	0.13	0.13	-
Environmental taxes	% GDP	3.0	3.0	2.9	2.9	2.9	3.1
Sectoral							
Industry energy intensity	kgoe / €	0.29	0.31	0.31	0.31	0.31	0.32
Real unit energy cost for manufacturing industry excl. refining	% of value added	19.8	22.7	21.8	21.8	-	-
Share of energy-intensive industries in the economy	% GDP	11.50	11.59	11.65	11.61	11.30	11.19
Electricity prices for medium-sized industrial users	€ / kWh	0.08	0.07	0.07	0.07	0.07	0.07
Gas prices for medium-sized industrial users	€ / kWh	0.04	0.05	0.05	0.05	0.04	0.04
Public R&D for energy	% GDP	0.10	0.08	0.08	0.08	0.08	0.06
Public R&D for environmental protection	% GDP	0.02	0.02	0.01	0.01	0.01	0.01
Municipal waste recycling rate	%	34.8	33.3	32.5	32.5	40.6	42.0
Share of GHG emissions covered by ETS*	%	52.7	48.5	49.9	48.8	45.8	46.4
Transport energy intensity	kgoe / €	0.55	0.53	0.53	0.55	0.56	0.58
Transport carbon intensity	kg / €	1.40	1.34	1.34	1.27	1.29	-
Security of energy supply							
Energy import dependency	%	52.8	46.3	48.6	48.9	47.4	45.3
Aggregated supplier concentration index	HHI	80.0	68.1	68.3	67.4	67.6	-
Diversification of energy mix	HHI	0.21	0.21	0.21	0.22	0.22	0.22

All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2010 prices)
Energy intensity: gross inland energy consumption (in kgoe) divided by GDP (in EUR)
Carbon intensity: greenhouse gas emissions (in kg CO2 equivalents) divided by GDP (in EUR)
Resource intensity: domestic material consumption (in kg) divided by GDP (in EUR)
Waste intensity: waste (in kg) divided by GDP (in EUR)
Energy balance of trade: the balance of energy exports and imports, expressed as % of GDP
Weighting of energy in HICP: the proportion of 'energy' items in the consumption basket used for the construction of the HICP
Difference between energy price change and inflation: energy component of HICP, and total HICP inflation (annual % change)
Real unit energy cost: real energy costs as % of total value added for the economy
Industry energy intensity: final energy consumption of industry (in kgoe) divided by gross value added of industry (in 2010 EUR)
Real unit energy costs for manufacturing industry excluding refining : real costs as % of value added for manufacturing sectors
Share of energy-intensive industries in the economy: share of gross value added of the energy-intensive industries in GDP
Electricity and gas prices for medium-sized industrial users: consumption band 500–20 00MWh and 10 000–100 000 GJ; figures excl. VAT.
Recycling rate of municipal waste: ratio of recycled and composted municipal waste to total municipal waste
Public R&D for energy or for the environment: government spending on R&D for these categories as % of GDP
Proportion of GHG emissions covered by EU emissions trading system (ETS) (excluding aviation): based on GHG emissions (excl land use, land use change and forestry) as reported by Member States to the European Environment Agency.
Transport energy intensity: final energy consumption of transport activity (kgoe) divided by transport industry gross value added (in 2010 EUR)
Transport carbon intensity: GHG emissions in transport activity divided by gross value added of the transport sector
Energy import dependency: net energy imports divided by gross inland energy consumption incl. consumption of international bunker fuels
Aggregated supplier concentration index: covers oil, gas and coal. Smaller values indicate larger diversification and hence lower risk.
Diversification of the energy mix: Herfindahl index covering natural gas, total petrol products, nuclear heat, renewable energies and solid fuels
* European Commission and European Environment Agency***Source:*** European Commission and European Environment Agency (Share of GHG emissions covered by ETS); European Commission (Environmental taxes over labour taxes and GDP); Eurostat (all other indicators)

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