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Country Report Sweden 2018
Including an In-Depth Review on the prevention and correction of macroeconomic imbalances

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN CENTRAL BANK AND THE EUROGROUP

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

Sweden's buoyant economic performance represents an excellent foundation to address structural weaknesses in relation to the housing market and household debt. Further boosting new construction in appropriate locations and market segments could help alleviate a long-standing housing shortage. A more market-oriented rental housing sector could contribute to this as well, and would also support mobility and flexibility in the labour market. Tax incentives for property ownership and mortgage debt still support household debt growth and overvalued house prices. Addressing these issues would make the Swedish economy more resilient. ([1])

After recording an estimated 2.7 % growth in 2017, the Commission's winter 2018 interim forecast projects real GDP to increase by 2.7 % and 2.0 % in 2018 and 2019, respectively. Robust export growth and a moderate increase in domestic demand are expected to support economic activity in the coming years.

Sweden's external position remains strong. Goods and services exports benefitted from the global upswing in 2017. As import growth remained solid, the current account surplus hovered around 5 % in 2016-2017. Underpinned by strong growth in Sweden's main trading partners, the outlook for exports will remain favourable, in particular for investment goods.

Investment surged due to buoyant construction activity. After expanding at a rate of above 5 % per year in 2015-2017, investment is expected to continue increasing at a slower pace in the coming years. Partly thanks to reforms to building regulations and the planning process, investment in housing in particular has rebounded strongly since mid-2013. However, this new supply is insufficient to match estimated housing needs.

The labour market continues to perform well. In 2016 Sweden had one of the highest employment rates in the EU at 81.2 %, and overall unemployment was below the EU average at 6.9 %. Labour shortages emerged in sectors such as construction, education, health, science, engineering and ICT. A major challenge for the labour market now is the integration of people with a migrant background, including those with relatively low levels of education and skills.

The fiscal position has remained strong. Robust revenue collection and lower-than-expected expenditure for migration and integration should result in a fiscal surplus in 2018 and 2019. Government debt stood at about 39 % of GDP in 2017, well below the reference value of 60 % of GDP agreed in the Treaty, and is projected to decline in coming years. The outlook for Sweden's fiscal sustainability is sound in the short, medium and long term.

Inflation is expected to stay broadly stable. Sweden's central bank has continued its expansionary monetary policy to support a sustainable rise in the rate of inflation to its 2 % target. It has kept repo rates at negative levels.

Financial conditions support the economy, but also contribute to imbalances. The central bank's monetary policy stance has resulted in very low mortgage interest rates. In turn, low rates have further boosted private indebtedness and to a lesser extent supported house prices.

Sweden has made limited ([2]) progress in addressing the 2017 country-specific recommendation. As regards policies relevant to macroeconomic imbalances, the government approved a strengthened amortisation requirement ([3]) for high-debt-to-income mortgages; thus achieving substantial progress in this area. Some progress has been made on fostering investment in housing and improving the efficiency of the housing market. In particular, the authorities are continuing to gradually implement the 22-point plan to increase residential construction and improve the efficiency of the

([1]) This report assesses Sweden's economy in the light of the European Commission's Annual Growth Survey published on 22 November 2017. In the survey, the Commission calls on EU Member States to implement 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. At the same time, the Commission published the Alert Mechanism Report (AMR) that initiated the seventh round of the macroeconomic imbalance procedure. The AMR found that Sweden warranted an in-depth review, which is presented in this report.

([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.

([3]) Amortisation here refers to capital repayments on mortgage loans (see Section 4.2.3).

housing market. The government has also launched a new initiative for more participation by foreign firms in the Swedish construction sector. No significant policy action has been taken to introduce more flexibility in setting rental prices. Finally, there are key parts of the recommendation that have not been met by any policy action, notably on reforming the favourable tax treatment of mortgage debt and home ownership. On these aspects of the recommendation, no progress has been made.

Regarding progress in reaching the national targets under the Europe 2020 strategy, indicators where Sweden continues to perform well are the employment rate, greenhouse gas emissions, the share of renewable energy, the rate of early school leaving, tertiary education attainment and poverty risks. Areas where progress remains relatively weak are energy efficiency and R&D targets.

Sweden performs well on the indicators of the Social Scoreboard supporting the European Pillar of Social Rights. The employment rate is high, while the gender employment gap and the share of young people not in employment, education or training rate are at low levels. Positive outcomes, also on participation in active labour market policies and of children in formal childcare, reflect an advanced welfare model, strong social dialogue and a high level of gender equality.

The main findings of the in-depth review contained in this report and the related policy challenges are as follows:

- **While banks are healthy, there are vulnerabilities linked to their growing exposure to household mortgages.** Banks remain profitable. The regulatory capital adequacy ratios are high, but as a share of total (unweighted) assets, capital has remained stable at lower levels. Considering the steadily increasing mortgage-related lending on their balance sheets, the risk of a rapid decline in house prices represents a significant vulnerability for the stability of the banking system. Moreover, since Swedish banking groups are of systemic importance for all countries in the Nordic-Baltic financial market, any shock to the banking sector could have a wider impact on neighbouring countries.

- **Household indebtedness has continued to rise from already elevated levels.** Household debt grew by 7.0 % in 2017, reaching about 86 % of GDP and 184 % of disposable income – among the highest levels in the EU. This is driven mainly by higher mortgage borrowing, linked to high house prices and rising new construction volumes, coupled with structural distortions favouring mortgage-financed property investment. Debt levels are unevenly distributed, with lower-income and younger households facing particularly high debt loads relative to their incomes. Sweden has implemented several macroprudential measures in recent years, including a mortgage amortisation requirement in 2016. The latter appears to have considerably influenced borrower behaviour, but the overall effect on total debt incurred seems modest. More generally, macroprudential policy steps taken so far appear to have had limited impact on mortgage lending growth.

- **After two decades of rapidly rising house prices, the housing market experienced a gradual decline in autumn 2017, before rising somewhat again in January 2018, but prices remain above fundamentals.** Key structural issues include tax incentives favouring home ownership and mortgage debt, and continued accommodative credit conditions coupled with still relatively low mortgage amortisation rates. In addition, despite a sharp rise in new construction in recent years, there is still an ongoing supply shortage, particularly of affordable homes around major cities. This shortage in housing supply is linked to structural inefficiencies, including limited competition in the construction sector due to barriers to entry for small and foreign firms and the ability of large developers to control land resources. There are also barriers to efficient usage of the existing housing stock. In the rental market, below-market rents create lock-in and 'insider/outsider' effects. In the owner-occupancy market, capital gains taxes reduce homeowner mobility. The housing shortage also hampers labour mobility and can contribute to intergenerational inequality.

- **The continued increase in household debt and bank exposure to residential mortgages is a growing risk to macroeconomic stability.** Despite gradual policy action, mortgage debt continues to increase further. With the housing market still appearing overvalued, even after recent declines, rising indebtedness means there is the growing risk of a disorderly correction. This could culminate in a rapid deleveraging process, with an adverse impact on the real economy and potentially the banking sector.

Other key structural issues analysed in this country report, which point to particular challenges for Sweden's economy, are the following:

- **Despite favourable economic conditions, some population groups have difficulties finding a job.** Sweden has high employment and low long-term unemployment rates. However, challenges remain, for example integrating low-skilled people and non-EU migrants into the labour market. This challenge is likely to remain in the coming years in light of the magnitude and composition of the arrival of asylum seekers in late 2015. Efforts have been made to improve the employability of recently arrived migrants and a new simplified scheme (*introduktionsjobb*) is set to begin in spring 2018.

- **The educational performance gap between different social groups is large and widening**. Despite recent measures, the education system does not appear to promote quality education for all. The integration of newly arrived migrant pupils warrants close monitoring, as does the growing shortage of teachers.

- **The economy benefits from a favourable business environment, although barriers to investment and long-term growth remain.** Sweden performs well in terms of efficient public administration, access to finance for small and medium-sized enterprises, and innovation and internationalisation by businesses. The public procurement system generally works well, but investment by small and medium-sized enterprises is in some cases constrained by insufficiently transparent public procurement procedures. Finally, there remains scope for closer cooperation between academia and businesses.

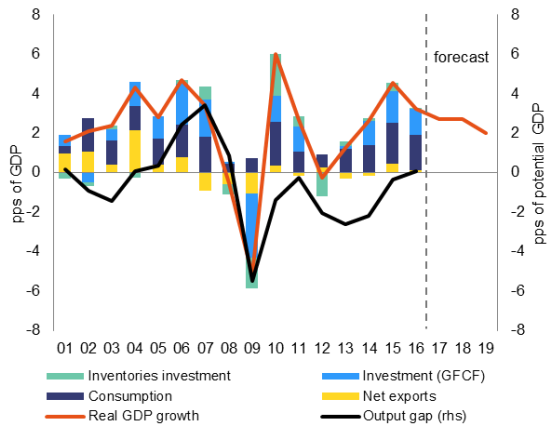
1. ECONOMIC SITUATION AND OUTLOOK

GDP growth

Economic activity remained strong and balanced. Real GDP grew by 3.2 % in 2016 and is expected to have increased by 2.7 % in 2017, according to the Commission's winter 2018 interim forecast. Domestic demand and exports benefited from the continued accommodative monetary policy and the pick-up in global demand (Graph 1.1).

Investment was pushed up by buoyant construction activity. Investment is set to have contributed to close to 2 percentage points (pps) of GDP growth in 2017. Decades of pent-up demand for housing led to a strong supply response from the construction sector in recent years. In 2017, dwelling starts topped their historically high level of the previous year, and housing investment is projected to have grown by more than 10 %. Other construction, in particular of public buildings and facilities, contributed also to the momentum. However, this new supply is insufficient to match estimated housing needs (see Section 4.2.2).

Graph 1.1: **Output gap, real GDP growth and its components (1)**



(1) Forecasts for 2017-2019 are based on a no-policy-change assumption
Source: European Commission

The economic outlook is solid. While investment growth is set to decline, the further strengthening of global activity should benefit Sweden's small, open and competitive economy in the coming years. All in all, real GDP growth is projected to hover around 2.7 % in 2018 and fall to 2.0 % in 2019, with the economy going back to its potential.

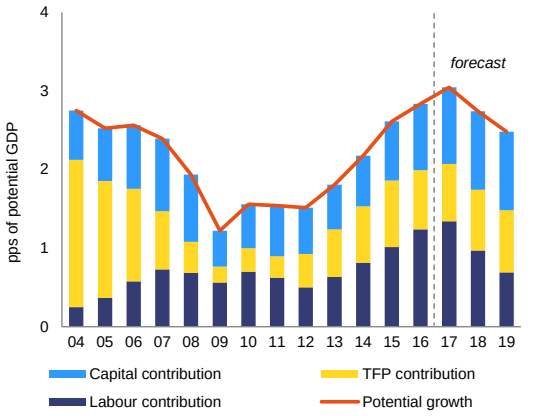
Investment is expected to grow at a slower pace. As capacity utilisation is high, exporters are likely to invest in additional equipment to respond to the external demand. However, the recent fall in house prices is set to dampen residential investment. Overall, investment is expected to grow at around 2 % in 2019.

The growth in public and private consumption is set to moderate. Despite modest wage growth, the increase in employment, low interest rates and additional social transfers and tax cuts are expected to support disposable income and private consumption in 2018. A rise in core inflation and the cost of housing (due to gradually higher interest rates) is not expected to affect significantly private consumption growth in 2019. Public consumption was broadly unchanged in 2017 and is projected to slightly increase as the 2018 budget bill includes additional funding to municipalities for staff and for improving the delivery of welfare services and education.

Potential growth

The positive economic development is also mirrored in Sweden's potential growth, which has returned to pre-crisis levels. Following a sharp fall with the onset of the 2009 financial crisis, potential growth has recovered, albeit its composition has changed. The labour contribution increased due to a larger working age population, supported by migration, and rising participation rates. In addition, since 2013 a larger capital stock on the back of investment growth has also supported the economy's potential (Graph 1.2). However, the contribution from total factor productivity (TFP) — despite an increase since 2009 — remains below the rates seen in the pre-crisis period. This could be an indication of the decreasing impact of ICT adoption and the stagnating levels of investment in R&D in the country (Edquist and Henrekson, 2016). Also, the longer term shift towards a more services-based, labour-intensive economy constitutes a structural, compositional factor that moderates TFP evolution. The outlook for total factor productivity is balanced, possibly with diminishing returns to technological innovation (Konjunkturinstitutet, 2017).

Graph 1.2: **Contributions to potential growth (1) (2)**



(1) Forecasts for 2017-2019 are based on a no-policy-change assumption
(2)TFP: total factor productivity
Source: European Commission (Autumn forecast 2017)

Inflation and monetary policy

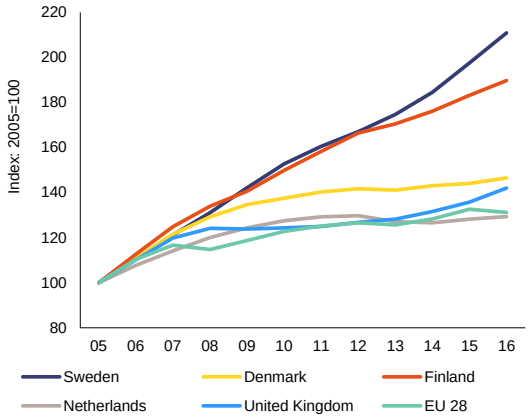
Despite strong economic growth and an accommodative monetary policy, inflation is projected to remain sluggish. For some time during 2017 it seemed that higher import prices resulting from the depreciation of the Swedish krona in 2016 and recovering energy prices were pushing inflation above 2 %. However, at the end of 2017, headline inflation was back to 1.9 %. Although capacity utilisation is high after several years of strong economic growth, cost pressures have not built up yet. The Swedish central bank (the Riksbank) has continuously used its monetary policy toolbox to guide inflation towards its target. 'Core inflation', i.e. the underlying long-term inflation excluding volatile items like food and energy prices, is gradually increasing but held back by subdued wage growth. In the coming years, a further tightening of the labour market and economic growth are expected to support core inflation. Overall, the harmonised consumer price index is expected to grow at 1.8 % in 2018 and 1.7 % in 2019.

The Riksbank is set to maintain a negative repo rate in 2018 to stabilise inflation around its 2 % target. Since early 2016, the Riksbank had kept its repo rate at -0.5 % and acquired SEK 290 billion (EUR 30.1 billion) in government bonds over the last three years in order to raise inflation and inflation expectations. In December 2017, the Riksbank decided to end the asset purchase programme, albeit with repurchases continuing for six more quarters, and announced that slow increases of the repo rate would begin towards the end of 2018. The low interest rate environment, combined with other structural factors lowering mortgage debt service costs and a continued housing shortage, has been supporting increase in household debt and house prices. These increases have made the financial system and broader economy more vulnerable to external shocks (see Section 4.2).

Private indebtedness

In 2017, household debt continued to outpace economic growth. Household debt amounted to 184 % of disposable income or about 86 % of GDP in Q3 2017, among the highest levels in the EU (see Section 4.2.3). There have been some positive developments at the margin, in part driven by the adoption of a new mortgage amortisation requirement in 2016. This has helped contain mortgage borrowing at very high debt-to-income levels, leading to a modest drop in the average debt-to-income ratio for new mortgage borrowers after years of steep increases. However, overall, household debt has continued to rise broadly in line with its previous growth trend of 6-7 % per year (Graph 1.3).

Graph 1.3: **Household debt evolution**



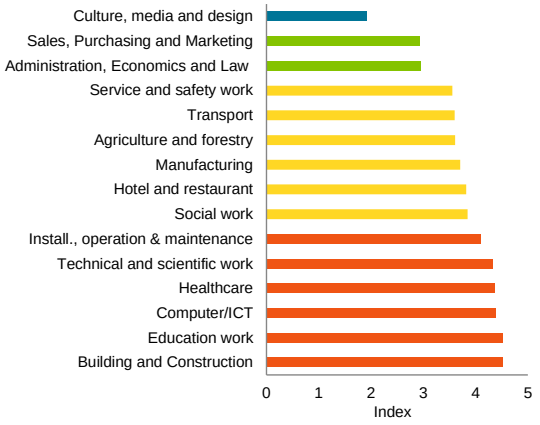
Source: Eurostat

Labour market

Favourable economic conditions are supporting strong improvements in the labour market. In the third quarter of 2017, Sweden had one of the

highest employment rates in the EU (81.8 %), above its national target (80 %). Unemployment is lower than the EU average (6.8 % versus 7.5 % in the EU in Q3-2017), and youth unemployment along with the rate of people not in education, employment or training decreased in 2016. However, labour shortages in sectors such as construction, education, health, science, engineering and ICT have been reported. By contrast, the employment rate of low-skilled people is declining, pointing to potential skills mismatches (Graph 1.4). Unemployment is therefore set to stabilise at around 6.5 % in 2018-2019.

Graph 1.4: **Labour shortages in the economy (1)**

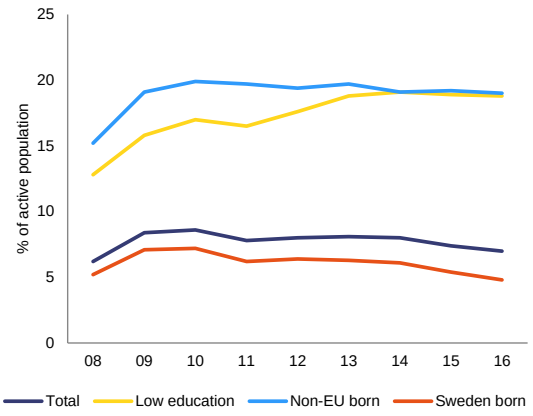


(1) The index consists of a weighted average based on a survey of roughly 11 000 employers from the private sector, municipal authorities and county councils. The degree of shortage ranges from 1.00 = excessive labour supply to 5.00 = pronounced labour shortage.
Source: Public Employment Office

Bringing migrants into the workforce remains a challenge (see Section 4.3). The percentage of residents in Sweden not born in the EU is among the highest in the EU as the country has been attracting migrants for humanitarian and family reunification reasons for decades. Since 2008, it has also been taking in non-EU labour migrants. However, the unemployment rate of non-EU-born residents in Sweden stood at 19 % in 2016 (Graph 1.5), which is four times higher than the rate for native-born residents.

In the medium term, the economy could benefit from successfully integrating migrants into the labour market. The gradual increase in the labour force might slow the decrease in the unemployment rate in the short term. However, past experience indicates that over time people granted asylum usually find employment, thus lifting potential growth.

Graph 1.5: **Unemployment rates of specific groups**



Source: European Commission

Inequality

Sweden has one of the lowest levels of income inequality in the EU. Growth is inclusive, with household income per person increasing faster than GDP per person ([4]). The distribution of market incomes (i.e. before taxes and transfers and excluding pensions) is more equal than in most EU countries, since wage distribution is quite compressed. In addition, the redistributive power of the tax and benefit system further reduces inequality (in 2014, the Gini coefficient ([5]) fell from 45 before taxes and transfers to 25 after taxes and transfers).

Nevertheless, income inequality has increased in Sweden over the past decades. The share of the country's income owned by the top 10 % of the population increased from about 20 % to 30 % between 1982-2014 (Graph 1.6). The distribution of wages has remained broadly stable. Changes appear to be driven by an increase in capital income, a diminishing effect over time of the tax

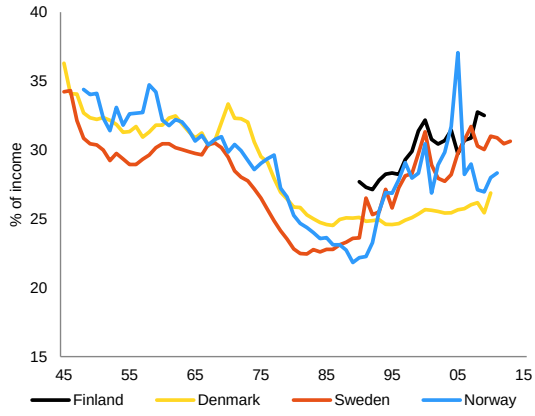
([4]) Sweden ranks 6th among the 29 advanced economies in the 2018 inclusive development index (from the World Economic Forum) and 3rd among the 26 EU Member States covered.

([5]) The closer the Gini is to a value of 100, the more unequal the distribution of income. The closer the Gini is to a value of 0, the more equal the distribution of income.

and benefit system to reduce market inequality and structural trends in household composition.

The persistent increase in property prices and the absence of a wealth inheritance and gift tax have negatively affected wealth distribution (Lundberg et al., 2018; OECD, 2017b). In addition, the current tax treatment of owner-occupied housing with a mortgage is regressive as a result of the low recurrent property tax, which is generally not aligned with property values. This is combined with full deductibility ([6]) of mortgage interest payments (see *Demand-side issues* in Section 4.3.1).

Graph 1.6: **Changes in the income share owned by the highest decile of the country's population since 1945 (1)**



(1) Including capital income, before taxes and transfers.
Source: The World Wealth and Income database

Competitiveness

Sweden has maintained its cost competitiveness, as wage growth remains subdued despite high economic activity. In the first half of 2017, the exporting industry agreed in its wage bargaining negotiations to a 2.2 % annual rate increase for 2017-2019. This modest outcome was the result of negotiations that started in 2016 in an environment of downward price and wage pressure from major trading partners, intensification of e-commerce and political uncertainty in Europe. Since then, other sectors have closely followed this benchmark agreement, except for some public services professions. While wage growth is projected to positively drift away in the coming years, cost competitiveness developments are expected to remain contained.

External position

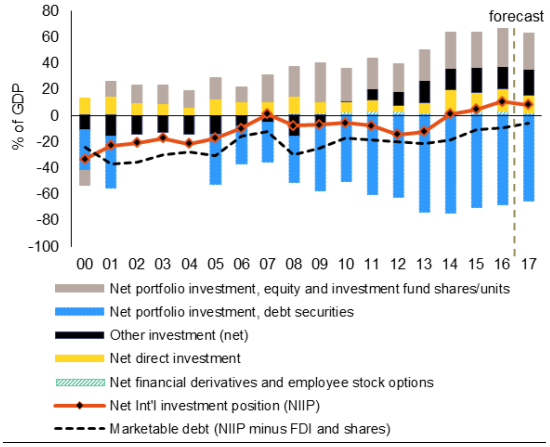
Foreign trade is a key growth driver for Sweden's economy. The tradable sector accounts for close to half of GDP and a third of employment. The economy has become more service-intensive, and services' exports have outpaced goods' export for more than a decade. A pick-up in foreign demand boosted exports in the second half of 2017, and this momentum is expected to gather pace in 2018. Import growth is forecast to moderate slightly in line with domestic demand. Net exports are therefore projected to contribute positively to GDP growth in 2018-2019.

The current account balance surplus is primarily driven by high savings. The persistent current account surplus is declining from 8.6 % in 2006 to 5.1 % of GDP in 2016. The surplus is not a reason for concern: close to 40 % is driven by merchanting activities ([7]), i.e. multinational enterprises that have moved their production abroad (to gain a competitive edge) but retained their headquarters, research and development and other key functions and assets in Sweden. The surplus also reflects high household savings rather than underinvestment (see Section 4.4.1). However, the net international investment position is only slightly positive, i.e. the accumulated foreign assets exceed liabilities (Graph 1.7). Valuation effects and measurement errors might continue to underestimate the net international investment position (European Commission, 2016a, p. 13-14).

([6]) If mortgage interest exceeds available capital income (taxed at a flat rate of 30 %), the excess is applied as a credit against the labour income tax liability, at a credit rate of 30 % for losses up to SEK 100 000 and 21 % above this amount.

([7]) Merchanting is the trade margin that arises between the purchase price and the sale price when Swedish companies buy and resell goods abroad, without the goods crossing the Swedish border.

Graph 1.7: **Net international investment position**



Source: European Commission

Public finances

The fiscal position has remained strong. Revenue collection, underpinned by solid economic growth, surprised on the upside. By contrast, expenditure for taking in and integrating of asylum seekers was lower than expected in 2016-2017. As a result, the general government headline surplus is set to have reached 0.9 % of GDP in 2017, well above the initial plan of the 2017 budget, implying a structural surplus of 0.8 % of GDP. However, as the fiscal measures included in the 2018 budget bill are only partially financed by additional revenue growth, the headline surplus is expected to decline to 0.7 % and 0.6 % of GDP respectively in 2018-19. With prudent fiscal management, the general government gross debt has been declining over recent years, a trend that is set to continue with the debt-to-GDP ratio projected to fall further to 34.4 % in 2019, significantly below the reference value of 60 % of GDP agreed in the Treaty (see also Section 4.1).

Table 1.1: **Key economic and financial indicators – Sweden (1), (2)**

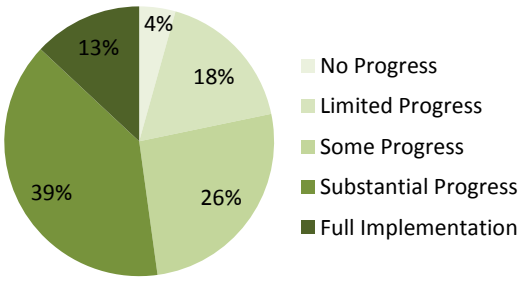
						forecast		
	2004-07	2008-12	2013-14	2015	2016	2017	2018	2019
Real GDP (y-o-y)	3.8	0.5	1.9	4.5	3.2	2.7	2.7	2.0
Potential growth (y-o-y)	2.6	1.5	1.9	2.6	2.8	3.0	2.7	2.5
Private consumption (y-o-y)	3.0	1.4	2.0	3.1	2.2	.	.	.
Public consumption (y-o-y)	0.6	1.4	1.4	2.4	3.1	.	.	.
Gross fixed capital formation (y-o-y)	7.1	-0.5	3.0	6.9	5.6	.	.	.
Exports of goods and services (y-o-y)	7.6	0.9	2.2	5.7	3.3	.	.	.
Imports of goods and services (y-o-y)	7.4	1.6	3.0	5.2	3.4	.	.	.
Contribution to GDP growth:								
Domestic demand (y-o-y)	3.1	0.9	2.0	3.7	3.1	.	.	.
Inventories (y-o-y)	0.1	-0.1	0.2	0.4	0.0	.	.	.
Net exports (y-o-y)	0.6	-0.3	-0.2	0.4	0.1	.	.	.
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.5	0.6	0.6	1.0	1.2	1.3	1.0	0.7
Capital accumulation (y-o-y)	0.7	0.6	0.6	0.8	0.8	1.0	1.0	1.0
Total factor productivity (y-o-y)	1.3	0.3	0.7	0.8	0.8	0.7	0.8	0.8
Output gap	1.6	-1.7	-2.4	-0.4	0.1	0.2	0.2	-0.2
Unemployment rate	7.1	7.8	8.0	7.4	6.9	6.6	6.4	6.3
GDP deflator (y-o-y)	1.5	1.8	1.4	2.1	1.6	2.2	2.2	2.1
Harmonised index of consumer prices (HICP, y-o-y)	1.3	1.9	0.3	0.7	1.1	1.9	1.8	1.7
Nominal compensation per employee (y-o-y)	3.9	3.0	2.1	2.7	2.8	2.7	2.7	2.4
Labour productivity (real, person employed, y-o-y)	2.9	0.0	0.7	3.0	1.5	.	.	.
Unit labour costs (ULC, whole economy, y-o-y)	1.0	3.0	1.3	-0.3	1.3	1.4	1.4	1.2
Real unit labour costs (y-o-y)	-0.5	1.2	-0.1	-2.3	-0.3	-0.9	-0.8	-0.9
Real effective exchange rate (ULC, y-o-y)	-0.3	1.3	-0.2	-6.3	0.1	-0.1	-0.1	-0.5
Real effective exchange rate (HICP, y-o-y)	-0.7	0.0	-1.5	-5.2	0.8	-1.1	-0.2	.
Savings rate of households (net saving as percentage of net disposable income)	7.0	12.3	15.8	15.1	16.5	.	.	.
Private credit flow, consolidated (% of GDP)	12.7	7.8	4.7	7.5	7.6	.	.	.
Private sector debt, consolidated (% of GDP)	154.6	192.6	194.2	188.4	188.6	.	.	.
of which household debt, consolidated (% of GDP)	61.7	76.2	82.8	83.6	85.1	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	92.9	116.3	111.4	104.8	103.5	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (2)	.	0.6	0.9	1.2	1.1	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	3.4	0.9	-1.5	-2.0	-3.1	-2.5	-1.8	-1.2
Corporations, gross operating surplus (% of GDP)	24.8	23.8	23.1	24.9	24.0	24.8	25.3	25.8
Households, net lending (+) or net borrowing (-) (% of GDP)	1.8	5.2	7.7	6.4	7.0	6.2	6.1	5.6
Deflated house price index (y-o-y)	9.7	1.3	6.5	12.1	7.5	.	.	.
Residential investment (% of GDP)	3.8	3.6	3.8	4.6	5.2	.	.	.
Current account balance (% of GDP), balance of payments	7.1	6.2	4.9	4.7	4.4	4.8	5.0	5.1
Trade balance (% of GDP), balance of payments	6.7	5.2	4.7	4.9	4.2	.	.	.
Terms of trade of goods and services (y-o-y)	-0.5	-0.1	0.2	0.8	0.4	-0.5	0.4	0.0
Capital account balance (% of GDP)	-0.2	-0.2	-0.2	-0.2	-0.1	.	.	.
Net international investment position (% of GDP)	-11.9	-8.7	-5.7	4.7	10.5	.	.	.
Net marketable external debt (% of GDP) (1)	-21.5	-22.3	-20.2	-10.9	-9.2	.	.	.
Gross marketable external debt (% of GDP) (1)	123.4	155.6	169.4	157.2	156.3	.	.	.
Export performance vs. advanced countries (% change over 5 years)	6.5	-4.9	-7.0	-7.8	-10.5	.	.	.
Export market share, goods and services (y-o-y)	-0.7	-4.2	-1.0	-1.3	1.1	.	.	.
Net FDI flows (% of GDP)	2.3	2.5	2.7	1.7	-0.8	.	.	.
General government balance (% of GDP)	1.9	0.0	-1.5	0.2	1.2	0.9	0.7	0.6
Structural budget balance (% of GDP)	.	0.3	0.0	0.4	1.2	0.8	0.6	0.7
General government gross debt (% of GDP)	45.3	38.8	43.2	44.2	42.2	39.0	36.6	34.4
Tax-to-GDP ratio (%)	46.3	43.8	43.3	43.6	44.6	44.0	43.4	43.1
Tax rate for a single person earning the average wage (%)	30.3	25.4	24.7	24.6	24.9	.	.	.
Tax rate for a single person earning 50% of the average wage (%)	26.0	20.4	19.9	19.8	20.1	.	.	.

(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 recommendation addressed to Sweden in 2017([8]) has to be seen in a longer term perspective since the introduction of the European Semester in 2011. Looking at the multi-annual assessment of the implementation of the CSRs since these were first adopted, 78 % of all the CSRs addressed to Sweden have recorded at least 'some progress'. 22 % of these CSRs recorded 'limited' or 'no progress' (Graph 2.1). Substantial progress and full implementation have been achieved in several policy areas, in particular fiscal governance and research and innovation. Limited progress has been achieved in implementing housing market and household debt related CSRs.

Graph 2.1: **Overall multiannual implementation of 2011-2017 CSRs to date (1)**



(1) The overall assessment of the country-specific recommendations related to fiscal policy exclude compliance with the Stability and Growth Pact.
(2) 2011-2012: Different CSR assessment categories.
(3) The multiannual CSR assessment looks at the implementation since the CSRs were first adopted until the February 2018 country report.
Source: European Commission

Sweden has been able to preserve a sound fiscal position. This has ensured compliance with the medium-term budgetary objective and keeping debt on a declining path well below the Treaty threshold.

For the labour market, the government achieved some progress in improving the employment situation of young people. In particular, it has adopted measures to strengthen apprenticeships and other types of work-based vocational education. However, on the recent arrival of asylum seekers, it is too early to assess the outcomes for non-EU-born people, given its magnitude and the considerable time it takes for integration measures to show their full effect.

Since 2011, the country has each year received a recommendation related to its high and persistently rising household debt and house prices. The authorities have taken a number of policy steps to help rein in mortgage debt and house price growth, and the associated risk to the broader economy and the financial system.

The focus has so far mainly been on macroprudential measures and steps to tackle housing supply bottlenecks. Macroprudential measures include introducing a loan-to-value ceiling of 85 % for mortgages in 2010, gradually raising banks' risk weight floors for mortgages in 2013 and 2014, and introducing a formal mortgage amortisation requirement in June 2016 (see Section 4.2.3). Additionally, Sweden has adopted legislation to strengthen the macroprudential authority's legal mandate. While these steps have improved the resilience of the banking sector (see Section 4.2.1), they have not been sufficient to rein in household debt growth (see Section 4.2.3). Additionally, the authorities have over time introduced measures to streamline building and planning regulations and have provided some direct budgetary support for municipalities to encourage more construction. This has resulted in a significant pick-up in construction in recent years, but the current level is still insufficient to meet anticipated demand, particularly in major cities (see Section 4.2.2).

([8]) For the assessment of other reforms implemented in the past, see in particular Section 4.

Table 2.1: **Summary table on CSR assessment (1)**

Sweden	Overall assessment of progress with 2017 CSRs: Limited
CSR 1: *Address risks related to household debt, in particular by gradually limiting the tax deductibility of mortgage interest payments or by increasing recurrent property taxes, while constraining lending at excessive debt-to-income levels. Foster investment in housing and improve the efficiency of the housing market, including by introducing more flexibility in setting rental prices and revising the design of the capital gains tax. (MIP relevant)*	**Limited progress** • No progress on limiting mortgage interest tax deductibility or increasing recurrent property taxes • Substantial progress on constraining lending at excessive debt-to-income levels • Some progress on fostering investment in housing and improving the efficiency of the housing market

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

Overall, Sweden has made limited ([9]) progress in addressing its 2017 country-specific recommendation (CSR). Some policy steps have been taken in response to the recommendation (which is relevant for the macroeconomic imbalance procedure (MIP), see Section 3). However, implementation has been uneven and key areas are left unaddressed. The government has approved a strengthened amortisation requirement for high-debt-to-income mortgages, which will come into force in March 2018. For the housing market, Sweden is moving forward with the gradual implementation of the '22-point plan' to increase residential construction and improve the efficiency of the housing sector (see Section 4.2.3). The authorities have also launched a new initiative to raise participation of foreign firms in the Swedish construction sector. However, no significant policy action has been taken to introduce more flexibility in setting rental prices. No progress has been made on reforming mortgage interest deductibility and recalibrating recurrent property taxes.

European Structural and Investment Funds (ESI Funds) address challenges to inclusive growth and convergence in Sweden, and have successfully supported migrants into entrepreneurship or employee positions in various sectors and helped local authorities provide tailor-made training and support for employability. ESI Funds are contributing notably to a strong innovation environment, clusters and accessibility of research resources for industry (Box 2.1).

([9]) Information on the level of progress and actions taken to address the policy advice in each respective subpart of a country-specific recommendation is presented in the Overview table in the Annex. This overall assessment does not include an assessment of compliance with the Stability and Growth Pact.

Box 2.1: Tangible results delivered through EU support for structural change in Sweden

Sweden is a beneficiary of European Structural and Investment Funds (ESI Funds) support and can receive up to EUR 3.6 billion until 2020. This represents around 3 % of public investment[1] annually over the period 2014-2018. By 31 December 2017, an estimated EUR 2.1 billion (59 % of the total) was allocated to projects and has paved the way to strengthen the competitive edge of 28 120 companies. Project areas include internationalisation, business development, incubation and new entrepreneurship. Access to risk capital, in particular venture capital has been enhanced and is delivered through one National fund-in-fund (EUR 23.1 million), eight regional venture capital funds (EUR 74 million) and a new National "green fund" with a focus on the transition to a low carbon economy (EUR 38.7 million).

ESI Funds help address structural policy challenges. They are used to support strong innovation environments, clusters and accessibility of research resources for industry. Sweden uses the funds to implement smart specialisation strategies in all regions. It will cover over 5 600 enterprises and cooperation with research institutes to bring new products to market. EUR 400 million supports the transition to a low-carbon economy. European Regional Development Fund (ERDF) activity in Sweden shows how to use the funds for integration of third country nationals. The focus has been to support migrants to become entrepreneurs or employees and a dedicated call of proposals was made for innovative solutions. A number of projects has been approved and are well in progress. Strengthening the employability of individuals through skills development and training is also supported by the European Social Fund (ESF) with EUR 808 million. The ESI Funds have helped to develop methods and structures for providing more individually adapted training and support for employability. Nearly 80 000 persons have benefitted from different ESF funded projects.

Various reforms were undertaken already as precondition for ESI Funds support[2]. These were the transposition of the energy efficiency directive and changes for the provision of statistical data on the implementation of ESI Funds.

Sweden is advancing the take up of the European Fund for Strategic Investments (EFSI). As of December 2017, overall financing volume of operations approved under the EFSI amounted to EUR 1.7 billion, which is expected to trigger total private and public investment of EUR 6.3 billion. Energy ranks first in terms of operations and volume approved, followed by RDI and digital. Some 805 smaller companies or start-ups will benefit from this support[3].

Funding under Horizon 2020, the Connecting Europe Facility and other directly managed EU funds is additional to the ESI Funds. By the end of 2017, Sweden has signed agreements for EUR 194 million for projects under the Connecting Europe Facility.

https://cohesiondata.ec.europa.eu/countries/SE

[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] For more details see EFSI factsheet for Sweden at https://ec.europa.eu/commission/publications/country-factsheets-investment-plan-state-play_en.

3. SUMMARY OF THE MAIN FINDINGS FROM THE MACROECONOMIC IMBALANCE PROCEDURE IN-DEPTH REVIEW

The in-depth review for the Swedish economy is presented in this report. In spring 2017, Sweden was identified as having macroeconomic imbalances, in particular relating to persistent house price growth coupled with a continued rise in household debt. The 2018 Alert Mechanism Report concluded that a new in-depth review should be undertaken for Sweden to assess developments relating to identified imbalances (European Commission, 2017h). Analyses relevant for the in-depth review can be found in the following sections: the banking sector in Section 4.2.1; the housing market in Section 4.2.2; and private indebtedness in Section 4.2.3.

3.1. IMBALANCES AND THEIR GRAVITY

Private sector debt stands at 188 % of GDP, among the highest in Europe. Both households (85 % of GDP end-2016) and non-financial corporations (103 % of GDP end-2016) have high debt levels compared to other EU countries, which are also above proprietary debt benchmarks developed by the European Commission, Household debt is a particular source of concern. It has risen rapidly and persistently, outpacing GDP growth for over two decades now, driven primarily by mortgage lending. Although households own significant assets, these are generally illiquid and their value is exposed to market risks. Moreover, the distribution of debt across households is uneven, and there is a significant fraction of borrowers with large debt-to-income ratios, particularly among younger households and those buying properties in major cities.

Corporate debt, while elevated, is matched by high equity cushions and corporate savings levels. Despite the significant stock of debt, financial risks remain limited thanks to healthy financial positions, in particular a low degree of balance sheet leverage and strong profitability. Moreover, external funding exposure, while growing, remains limited: domestic loans, which have proved resilient during the crisis, constitute the main funding source for non-financial corporations.

The Swedish economy has a significant exposure to the housing market, which makes it vulnerable to shocks. Swedish house prices have steadily risen for almost two decades, although in autumn 2017 the market experienced a gradual decline, followed by another month-on-month price increase in January 2018. Strong fundamentals, in particular robust disposable income and population growth, can explain part of Sweden's historical house price growth, but several indicators such as price-to-income (affordability) and price-to-rent (dividend) ratios suggest that house prices are above their fundamental values. Distortive taxation and structural supply-side inefficiencies in the housing market contribute to this overvaluation (see Section 4.2.2). The risks linked to this scenario have prompted the European Systemic Risk Board to issue a formal warning in 2016.

The banking sector is solid, but it would be only partially shielded against a potential abrupt fall in house prices. So far banks' assets have performed well and the sector has high profitability compared to its peers in other EU countries. However, banks rely to a large extent on international wholesale funding, giving rise to some degree of maturity mismatch. Risk weights generated by their internal models are low and might not fully reflect the underlying risks in banks' exposure to household mortgages. Consequently, in a severe housing market slump this vulnerability could have repercussions for the wider economy and the financial system. Due to the importance of Swedish banks in the region, other Nordic economies might also be affected.

3.2. EVOLUTION, PROSPECTS, AND POLICY RESPONSES

While overall private debt has roughly stabilised relative to GDP, household debt remains on an upward trajectory. It grew at 7.0 % year-on-year in nominal terms as of December 2017, continuing to outpace economic and income growth. The increase in mortgage lending is driven by house price rises coupled with structural factors favouring (mortgage-financed)

property investment, notably mortgage interest tax deductibility, variable rates and long maturities for mortgages.

The authorities have gradually taken some policy action to curb household debt growth. After introducing a mortgage amortisation requirement in 2016, in late 2017 the government approved a stricter amortisation rule specifically targeting borrowing at high-debt-to-income levels, which will come in force in March 2018. In addition, the Swedish parliament adopted legislation to strengthen the legal mandate of the macroprudential authority (*Finansinspektionen*). The new mandate is operational from February 2018, allowing the authority to respond in a more timely manner with a wider range of potential measures to the risks associated with growing household debt.

However, so far, these measures appear to have had limited impact on household debt growth, and key policy gaps remain. While the 2016 amortisation requirement seems to have considerably affected borrower behaviour, the overall impact on total debt incurred appears modest. Sweden has one of the highest tax incentives for home ownership in the EU due to relatively low property taxes and high mortgage interest rate deductibility, while the design of capital gains tax limits a more efficient use of the housing stock. These tax incentives contribute to the problem of persistent household debt growth.

Corporations have continued a gradual post-crisis deleveraging process in 2017. Non-financial corporation debt relative to GDP is down by about 25 percentage points since its peak in 2009. This has mostly been the result of 'passive' deleveraging, with net credit flows to firms positive but outweighed by growth and inflation. Domestic bank loans remain the main funding source of firms, but large corporations increasingly rely on the bond market as well. While this allows for funding alternatives, a higher share of bond market financing could in some cases expose firms more to volatility and stress in the financial markets.

Swedish banking groups have a substantial and growing exposure to household mortgages, but banks' capital buffers appear sufficient to support this. The near-term risks of household debt service problems seem limited, given low debt service costs and sizeable household budget margins. However, stretched housing market valuations combined with high debt levels make the household sector vulnerable to shocks. If, for instance, mortgage interest rates were to rise significantly, or if incomes were hit due to an external shock to the economy, households could be forced to rapidly reduce consumption levels. Moreover, as Swedish banks are reliant on wholesale funding, a downturn in the housing market could result in a sudden rise in bank funding costs, thus amplifying the impact of any domestic housing market adjustment. Supervisors are mindful of such risks.

House prices started gradually falling in autumn 2017, but this follows a long period of virtually uninterrupted strong growth. Real house prices have more than tripled over the past two decades, significantly outpacing income growth. Contrary to most European countries, Sweden experienced no major adjustment in house prices around the 2008-2009 financial crisis. House price growth peaked in 2015 at about 12 % in real terms, but since then there has been a notable loss of momentum: in 2016, real house prices rose by 7.6 %, and in 2017 the market cooled further, culminating in prices seeing outright month-on-month declines throughout the autumn. In January 2018, prices rose again by 3.4 % month-on-month on average, slightly above what could be expected based on seasonal trends. Market segments that had outperformed historically, notably Stockholm apartments, have shown particular weakness since early 2017, with prices in January 2018 close to 10 % below their peak in the spring of 2017. Still, valuation indicators continue to suggest that house prices remain very high relative to fundamentals.

A number of policy measures appear to have supported the recent turn in the house prices. The introduction of the 2016 amortisation requirement likely had a modest dampening impact on prices. The gradual simplification of planning and building regulations, combined with rapid house price rises in recent years, encouraged new housing construction. The ongoing implementation of the '22-point plan' for the housing market will likely further support housing supply. It will be important, however, for new construction to be focused on market segments where needs are most

pressing, as it is becoming increasingly apparent that specific market sectors (notably luxury apartments) are experiencing a degree of oversaturation. The latter is likely a significant contributing reason for the recent house price correction.

Some key structural distortions in the housing market have not been addressed yet. In particular, no policy action has been taken to reform the tax incentives for home ownership and mortgage debt (see above), liberalise tight rental market regulations and revise the capital tax on owner-occupied homes. In addition, there remains scope to further tackle the lack of land available for development, complex planning and building regulations, limited incentives for municipalities to support new construction and limited competition in the construction sector.

3.3. OVERALL ASSESSMENT

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. Large deleveraging needs may potentially lead to a harmful adjustment, with lower consumption, investment and credit flows. In spite of recent declines, house prices continue to appear overvalued. In the event of a large, disorderly downturn in the housing market, there is a risk of negative spillover effects to other Nordic countries through the financial system.

Policy measures to address these imbalances have so far been insufficient. The authorities have gradually taken some policy action to curb household debt growth in recent years, but this appears to have had limited impact on indebtedness growth. In addition, some key structural issues in the housing market have not been addressed. Overall, policy gaps remain for housing-related taxation, the functioning of housing supply and of the rental market.

Table 3.1: **MIP assessment matrix (*) — Sweden 2018**

	Gravity of the challenge	Evolution and prospects	Policy response
	Imbalances (unsustainable trends, vulnerabilities and associated risks)		
Private debt (see Section 4.2.3)	Sweden continues to have one of the highest levels of private debt in the EU, at close to 190 % of GDP at the end of 2016. High private indebtedness increases the country's vulnerability to macroeconomic shocks, as subsequent deleveraging may lead to sharp corrections in consumption and investment. Household debt is a particular concern; it stood at 182 % of disposable income and 86 % of GDP at end-2016. Households have good repayment ability and assets, but the distribution of debt and assets is uneven and a large part of household assets is exposed to liquidity and/or market risks.	Household debt grew further in 2016, increasing by 6.7 % in nominal terms over the year, significantly outpacing GDP growth. This trend continued in 2017, with household debt reaching 184 % of disposable income as of Q3 2017 GDP. The Riksbank projects that household debt will approach 190 % of disposable income by 2020.	In December 2017, the government approved a proposal by the macroprudential authority to raise the mortgage amortisation requirement for households borrowing more than 450 % of their gross income by 1 percentage point per annum. The new rule will come in force in March 2018. In addition, parliament adopted legislation to enhance the macroprudential authority's legal framework, so that it can respond in a more timely manner and use a wider range of measures to address the risks associated with growing household debt. The new framework is fully operational from February 2018.
	Corporate debt is relatively high compared to other EU countries, but it is matched by the high value of corporate assets and significant equity cushions. It mainly reflects a large share of international companies. Exposure to external financing is high.	Corporate debt has remained broadly stable, while firms continue to 'passively' deleverage.	Policy gaps remain regarding the incentives to take on mortgage debt. The full and unconditional tax deductibility of mortgage interest payments and the low ceiling on recurrent property taxation have not been reformed.
	Banks are well capitalised, non-performing loans remain among the lowest in the EU, and profitability is among the highest. These indicators somewhat mitigate, but do not fully offset, risks stemming from high private sector indebtedness. The reliance of Swedish banks on wholesale funding could amplify the impact of a sharp housing adjustment. The Swedish banking sector serves a large share of the market in the Nordic-Baltic countries, thus representing a source of possible spillovers in the event of sudden deleveraging needs. (See Section 4.2.1).	Banks are increasingly exposed to the real estate market: loans to households and non-financial corporations holding real estate have increased further, and constitute about 80 % of the major banks' total lending, 75 % of which is mortgage loans to households. At the same time, bank's capital buffers have continued to grow, due to lower average risk weighting of bank assets.	The enhanced legal framework for the macroprudential authority and the macroprudential measures adopted to mitigate the risks posed by the housing market (see above) contribute to strengthening the banking sector's resilience.

(Continued on the next page)

Table (continued)

Housing sector (see Section 4.2.2)	Swedish house prices appear to be significantly overvalued. Price-to-income and price-to-rent ratios were about 45-60% above their long-term average as of end-2016, and model-based estimates suggest prices are close to 10% above fundamentally justified levels. These valuation gaps are among the highest in the EU. This is due to a combination of structural bottlenecks to housing supply, especially in the main urban areas, combined with favourable tax treatment of home ownership and mortgage debt. Overvalued house prices combined with a large mortgage debt stock entail risks of a disorderly correction and adverse consequences for the real economy and potentially the banking sector.	House prices have grown almost continuously in the last 20 years. After peaking at 12% in 2015, real house price growth started tapering out, but at about 8% in 2016 it remained well above income growth and among the highest rates in the EU. In 2017, house price momentum slowed significantly, and in the autumn prices started gradually falling on a month-on-month basis. On a year-on-year basis, this left prices down about 2.5 % as of December 2017. In January 2018, prices rose again by 3.4 % month-on-month on average, slightly above what could be expected based on seasonal trends. In spite of the recent declines, prices remain higher than seems justified based on fundamentals, implying risks of a disorderly correction. The latter could be triggered by, for instance, an external shock or a rapid rise in mortgage interest rates. Housing investment has rebounded sharply since 2012, albeit from very low levels. Despite the strong pick-up in construction, new housing supply continues to fall short of projected needs, although there appears to be some oversupply in specific market segments, particularly high-end apartments.	The Swedish authorities continue to gradually implement the "22-point plan" for the housing market launched in June 2016. This includes a range of initiatives to increase developable land availability, reduce construction costs and shorten planning process lead times, as well as some specific rental market reforms. In addition, Sweden has launched an initiative to promote foreign competition in the construction sector by making building and planning regulations available in other languages on an online portal. However, policy gaps remain, in particular regarding complex planning and building regulations, revision of municipalities' incentives to support new construction, weak competition in the construction sector and the high level of rent control.

Conclusions from IDR analysis

- Sweden is characterised by important sources of stock imbalances in the form of high household debt associated with elevated house prices, which represents a risk as it exposes Sweden to potential adverse shocks and a possible disorderly correction with harmful implications for the real economy and the banking sector and possible spillovers to countries with a strong presence of Swedish banks.
- Household indebtedness keeps growing. House prices started to experience a gradual correction in autumn 2017, but remain at levels that appear out of line with fundamentals.
- Some policy measures have been taken in recent years to address Sweden's rising household debt, especially in the area of macroprudential policy. However, these measures remain insufficient to address the growing imbalances. Overall, policy gaps remain in the area of housing-related taxation and the functioning of housing supply and the rental market.

(*) The first column summarises 'gravity' issues which aim at providing an order of magnitude of the level of imbalances. The second column reports findings concerning the "evolution and prospects" of imbalances. The third column reports recent and planned relevant measures. Findings are reported for each source of imbalance and adjustment issue. The final three paragraphs of the matrix summarise the overall challenges, in terms of their gravity, developments and prospects, policy response.
Source: European Commission

4. REFORM PRIORITIES

4.1. PUBLIC FINANCES AND TAXATION

Public finances remain strong. Sweden is set to have achieved a general government surplus of 0.9 % of GDP and a structural surplus of 0.8% of GDP in 2017. The debt-to-GDP ratio is expected to decline below the new 35 % debt anchor by 2019. The 2018 budget bill includes initiatives to address key objectives while strengthening fiscal soundness. It includes new spending measures of about SEK 40 billion (EUR 4.1 billion), or 0.8 % of GDP centred on labour market and migrant integration, climate and environment, education, health and defence. The bill also provides for amendments to the fiscal framework from 2019 onwards. With prudent fiscal policy in place, Sweden faces low fiscal sustainability risks in the medium to long term.

4.1.1. FISCAL FRAMEWORK

The recently revised fiscal framework aims to ensure fiscal sustainability. The Swedish authorities adopted a fiscal governance reform package in late 2017, with effect in 2019**.** Most notably, the net lending surplus target defined over the cycle is lowered to 0.33 % of GDP from the current 1 % of GDP. The structural balance rule is complemented by a debt anchor set at 35 % of GDP, a new feature serving as a benchmark consistent with the surplus target ([10]).

The reforms further improve the soundness of the framework. The main conceptual pillars of the framework essentially remained in place. Changes, such as the establishment of a new debt anchor as an explicit multi-annual debt objective, helped to bring the Swedish national regulation in line with the Budgetary Frameworks Directive (2011/85).

The Fiscal Policy Council (*Finanspolitiska rådet*) has received a stronger mandate. It has a more prominent role in assessing compliance with the rules and is tasked with the regular evaluation of the government's economic forecasts.([11])

The nomination procedure for the Council's members has been amended. So far, members have been elected at the discretion of the Council itself. Following a broad political agreement, this process will be replaced on 1 July 2018 by a selection process steered by a nomination committee. This committee will include the Chair and Deputy Chair of the Riksdag's Finance Committee, as well as senior officials knowledgeable in the field of e.g. economic policy or statistics. The inclusion of elected representatives in the nomination procedure for the Fiscal Policy Council was officially motivated by the desire to give the independent body more democratic legitimacy and increase its responsibilities and diversity. However, former and current members of the Council have opposed this change because it may actually decrease the members' autonomy now that their selection will be more political.

4.1.2. TAXATION DEVELOPMENTS

The general level of taxation remains one of the highest among EU countries. In 2017, the total tax burden was 43.5 % of GDP compared to the EU average (39.4 % of GDP). Given the composition of the 2018 budget the level is expected to remain broadly unchanged.

The 2018 budget bill has introduced limited changes to the tax system. These include tax reductions for pensioners to gradually close the gap between taxation of income from work and taxation of income from pensions. The budget also raised the income tax rate for non-residents (from 20 % to 25 %). It plans to change corporate taxation, such as a lowered corporate tax rate (from 22 % to 20 %) combined with a restriction of interest deductibility for companies.

([10]) The revised elements are foreseen to be synthesised in the update of the government communication (or 'code of conduct') on the fiscal policy framework in the first half of 2018.

([11]) See last year's country report for the detailed discussion of the reform package. The English summary of the original report ('A review of the surplus target') is available at: http://www.government.se/globalassets/government/dokument/finansdepartementet/pdf/publikationer-infomtrl-rapporter/summary---a-review-of-the-surplus-target

Other tax measures focus on small and medium-sized businesses and a greener more sustainable economy. To promote job creation and entrepreneurship, the self-employed are given incentives to hire their first staff member, taxes are reduced on stock options used by start-ups as an alternative to a higher salary, and an exemption from value added tax exemption is introduced for small businesses. To make the economy greener, the budget includes tax increases on aviation and a lower electricity tax for certain sectors.

Addressing tax incentives could help mitigate the build-up of household indebtedness. There are currently no plans to revise taxation on housing, such as mortgage interest deductions and recurrent property tax. Reforms in this area could contribute to a more favourable development of household debt (see Section 4.2) and would also have a favourable impact on income equality, particularly if the proceeds are used to reduce taxes on labour (Box 4.1.1).

4.1.3. SUSTAINABILITY OF PUBLIC FINANCES

Sweden's public debt burden is expected to continue declining over the medium-term. Sound fiscal and strong economic performance is projected to bring government debt close to 20 % in 2028 from 39 % in 2017, well below the 60 % of GDP Treaty reference value. The outlook for Sweden's fiscal sustainability appears sound in the short, medium and long term. ([12]) ([13])

Debt dynamics appear to be resilient to shocks. In all scenarios public debt remains on a downward trend and the increase in the level of debt compared to the baseline is moderate. In the worst case scenario, based on a shock to the exchange rate (under a cumulative 20.8 % depreciation over 2 years), gross public debt would reach 39.3 % of GDP in 2019 given that over 26 % of public debt is denominated in foreign currency.

Public expenditure on long-term care is projected to increase. Demographic changes imply that under current policies spending on long-term care can be expected to increase significantly, from 3.2 % of GDP in 2016 (among the highest in the EU), to 4.9 % of GDP in 2070 (European Commission, 2018b). This corresponds to a 41 % increase, similar to the EU average. The share of the population that receives long-term care benefits is relatively high by EU standards, whereas the underlying level of need ([14]) is broadly in line with the EU average.

The long-term care sector is not fully efficient. Resources are not always targeted at those who need care the most and can least afford it. Additionally, the proportion of recipients receiving care in an institutional setting (rather than at home) is relatively high. There is room to improve the flexibility of the system.

([12]) For an overview of the Commission's assessment of fiscal sustainability, see European Commission (2018), 'Debt Sustainability Monitor 2017' Directorate-General for Economic and Financial Affairs, *European Economy*, Institutional Paper 071/2018.

([13]) This sound outlook will be further supported by the December 2017 six-party parliamentary group agreement on raising the retirement age. Over a five-year period ending in 2026, the minimum pensionable age would gradually increase from 61 to 64 years (by 2023).

([14]) Based on indicators such as the percentage of the population reporting a long-standing illness or health problem and the percentage of the population reporting severe limitations in daily activities.

Box 4.1.1: **Effects of a tax shift from labour to property**

Mortgage interest tax deductibility has been a long-standing issue in Sweden. The country is one of the very few EU member states with an uncapped ([15]) tax reduction on mortgage interest paid by owner-occupiers. This is widely seen as an incentive for households to take on high levels of debt and as a source of growing imbalances (see Sections 4.2.2 and 4.2.3). In order to address these imbalances, the Council has repeatedly called on Sweden in its country-specific recommendation to gradually limit mortgage interest deductibility (MID). Removing MID would ease housing demand and discourage excessive leverage.

The Joint Research Centre of the European Commission has used the EU tax-benefit microsimulation model EUROMOD[1] to simulate the effect of a tax shift from labour to property. Results suggest that removing MID has, on average, a small effect on disposable income. If combined with cuts in labour taxes or in-work tax subsidies, it could boost employability and work incentives for those with a lower income, thus further reducing inequality. These simulations are primarily aiming to improve our understanding of the impact various policies could have on individuals and the economy, while identifying possible trade-offs. Simulations inevitably abstract some possible sentiment effects that could result from a significant reform.

As a first step, the fiscal and distributional effects of removing MID are considered. Removing the incentive would result in an additional SEK 17 billion (or EUR 1.8 billion) of revenues (0.3 % of GDP). This would decrease household disposable income by a mere 0.8 % in a smooth progressive pattern across the household deciles (see graph 1), thereby reducing income inequality.

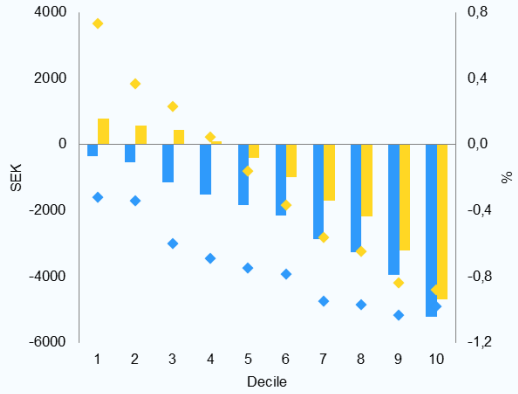
As a second step, the resulting extra fiscal space is used to reduce labour taxes to support low-skilled and non-EU born people to enter the labour market. Unemployment rates of these groups are relatively high in Sweden. As suggested by economic theory, moving the tax burden from labour to more growth-friendly revenue sources may improve labour market participation. Swedish labour taxation is relatively elevated (25 % of GDP versus 19.6 % on average in the EU), especially for the single worker who earns 50 % of the average wage (tax wedge of 39.2 % versus 32.8 % EU average). For illustration, two policies shifting taxes from labour to property are considered: (1) lifting labour demand by reducing the rate of employers' social security contributions (SSC) from 33.2 % to 22.3 % for low-wage earners[2] while ensuring budget neutrality; and (2) lifting labour supply with a targeted increase of the earned income tax credit (EITC) for workers earning less than the average wage while making the tax credit refundable[3].

Results show that the rebate of the SSC lowers the implicit tax rates on labour income for all households, and that the impact is particularly significant for wage earners in the first income deciles (i.e. low and middle-income earners – see graph 2). The rebate allows reducing the gap between labour costs and take-home pay and could result in higher employment and/or wages[4].

Sweden is using the EITC to ensure appropriate tax incentives for individuals to participate in the labour market. The simulated EITC reform would partially compensate for the decrease in household disposable income caused by the removal of the MID, especially between the first and fifth deciles (see graph 1). As a consequence, distributional effect could be significant (reduction in the Gini coefficient from 0.239 to 0.237). In addition, since this scenario would not use the entire fiscal space, roughly SEK 8 billion (EUR 0.8 billion) could be used to finance, for example, complementary policies like upskilling or integration of vulnerable groups in the labour market.
Using the full amount of freed up resources in a broader EITC increase offsets most of the negative impact from the MID reform on disposable income, but leads to a smaller impact on inequality (Gini index moving from 0.239 to 0.238) and a minor employment effect (a slight increase in labour market participation, especially from women)[5].

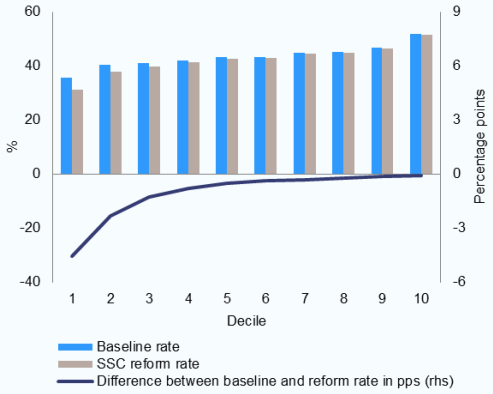
([15]) For further details on mortgage interest deductibility rules see footnote 6.

Graph 1: change in disposable income by decile



Notes. Households are put into deciles according to their pre-reform disposable income. "1" represents the 10% lowest-income, "10" the 10% highest-income households in the sample. Values are calculated on average, for all households, on an annual and equivalised basis. Bars show the change in monetary values (left-hand scale). Diamonds display the percentage change in disposable income (right-hand scale). The effect of the MID reform is in blue. The combined effect of the MID and EITC reforms is in yellow.

Graph 2: Implicit tax rates on labour by decile



Notes. Implicit tax rates are calculated for each decile taking into account the subgroup of individuals with positive labour income.

Source: European Commission Joint Research Centre, calculations based on the EUROMOD model.

[1] EUROMOD simulates the benefit entitlements and tax liabilities (including social security contributions) of individuals and households according to the tax-benefits rules in place in each Member State. The simulations are based on representative data from the 2015 European Survey on Income and Living Conditions.

[2] At 50 % of the average wage, i.e. about EUR 1600 monthly in the sample

[3] If, as a result of applying the EITC the tax liability becomes negative, that amount is given to the taxpayer.

[4] EUROMOD is a static model which cannot take into account possible second-round effects and behaviour change

[5] Estimations with a labour supply model.

4.2. FINANCIAL SECTOR

4.2.1. BANKING SECTOR (*) ([16])

Overview

The Swedish banking sector is large and interconnected. The sector's assets have been around 300 % of Sweden's GDP in recent years, while its equity has for long remained broadly stable relative to total assets. Given its size and operations in the region, the banking sector plays a key role and is highly interconnected with the Nordic-Baltic financial system.

Bank profitability remains among the highest in Europe despite the negative rate environment. Banks' returns on equity are averaging 12 %. In addition to low funding costs and high cost efficiency, strong economic conditions boosted lending as well as revenue from advisory and transaction fees, thus supporting profits.

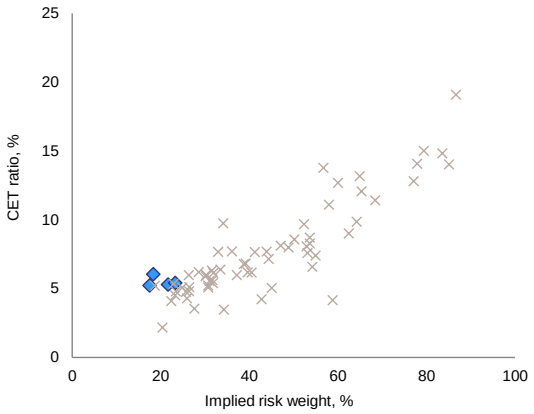
Banks are increasingly exposed to the real estate market. Loans to households and non-financial corporations holding real estate have increased and constitute about 80 % of the major banks' total lending. Of this, about 75 % represents housing loans to households and the remaining 25 % lending to corporates holding property assets. Too strong a focus on housing lending in the banks' portfolios could lead to a misallocation of credit to non-productive uses.

Good asset quality has been a major strength of the Swedish banking sector. In 2016 the average non-performing loan ratio stood well below the EU average of 5.2 % and remained one of the lowest in the EU. High repayment capacity due to high savings and a strong repayment culture have helped to limit defaults.

Banks' capital buffers have increased and are above requirements. In response to stability risks stemming from the housing market and high household indebtedness, *Finansinspektionen*, the Financial Supervisory Authority (FSA), has activated specific sectoral and countercyclical buffers (European Commission, 2017a). The average Tier 1 ratio stood at 22.8 % in June 2017, well above the EU average of 15.9 % (Table 4.2.1).

Regulatory capital ratios are high but risk weights are among the lowest in Europe. The average risk weighting of bank assets has fallen, contributing to the rise in capital adequacy ratios, while the ratio of capital to total (non-risk-weighted) assets has been broadly stable over time. Swedish banks have relatively low risk weights and capital levels compared to total assets (Graph 4.2.1). This results from the extensive use of internal rating-based models which incorporate low historical defaults on large portfolios, notably residential mortgages. Because these historical values might underestimate the actual risks, the Financial Supervisory Authority (FSA) (*Finansinspektionen*) imposed some adjustments such as higher risk weights for residential mortgages, whereas the Riksbank has argued for a leverage ratio requirement as a complement to risk-weighted capital requirements.

Graph 4.2.1: **Common Equity Tier (CET1)-to-total-assets ratio and implied risk weights (%), four major Swedish banks versus sample of 62 large EU banks (1), (2)**



(1) CET ratio is calculated as the ratio of reported CET1 capital to total (non-risk-weighted) assets
(2) Implied risk weights are computed as the ratio of risk-weighted to total assets
Source: Riksbank, Bankscope

Key risks

The banks' high exposure to the housing market remains a key risk. Households remain vulnerable to an adjustment in the housing market

([16]) An asterisk indicates that the analysis in the Section contributes to the in-depth review under the MIP (see Section 3 for an overall summary of main findings).

with substantial repercussions for the overall economy and the financial system (see *Risks* in Section 4.2.3). This is highlighted in the European Systemic Risk Board warning to Sweden issued in November 2016.

Commercial real estate (CRE) markets have been buoyant, driven by a search for yield. Investment in CRE has been growing fast, supported by bank lending but also by an increasing share of market-based funding. While the associated risk does not appear to be of the same order as for residential property, CRE is sensitive to economic downturns. There is the potential of negative spillovers, given the connections to the financial system and the real economy (Finansinspektionen, 2017c).

A downturn in housing markets could result in higher funding costs with implications for the region. Banks are reliant on wholesale funding as domestic deposits fund only around half of the banks' loan portfolio. To cover this funding gap banks issue covered bonds that are held by other domestic and foreign financial institutions. Against this backdrop, a change in risk perception could result in a sudden rise in bank funding costs, thus amplifying the impact of any domestic housing market adjustment. To contain associated liquidity risks, the Riksbank urges banks to have enough liquidity reserves and maintain sufficiently stable funding in foreign currency.

Macroprudential policy

Macroprudential measures have been adopted to mitigate the risks posed by the housing market. The FSA has introduced a number of specific capital buffers for banks, a 25 % risk weight floor on residential mortgages for banks applying the internal rating-based approach, specific amortisation requirements for households with mortgage loan-to-value ratios over 50 or 70 %, and the imposition of a 100 % risk-weight on mortgages for real estate (as of 2007). In addition, the government approved a strengthened amortisation requirement that enters into force in March 2018 (see Section 4.2.3).

In December 2017, parliament adopted legislation to strengthen the legal framework for the macroprudential authority. The new legislation was introduced to give a clear mandate to the FSA to introduce macroprudential measures that may be required in a timely and effective manner and using a wider range of tools. Importantly, a formal public consultation process, which is standard procedure before introducing any new regulations, and government approval will still be required for any proposed measures. It is the government's intention to use this approval requirement as an 'emergency brake' (IMF, 2017).

Nordea's planned move to Finland will have significant implications for the Swedish banking sector. Subject to shareholder approval, Nordea, a globally systemically-important institution, will relocate its headquarters to Finland by end-2018. The move would reduce the asset-to-GDP ratio of the Swedish banking sector by over 100 % of GDP. While Nordea's operations in Sweden are not expected to markedly change in terms of size and interconnectedness, the move will also have implications for the supervisory and resolution framework.([17]) This concerns not only liquidity management in the event of cross-border financial stress and possible resolution issues, but also how macroprudential measures will be applied to branches of foreign banks active in Sweden.

Some progress has been made to reduce vulnerabilities due to regional spillovers. Mindful of the interconnectedness of the financial system in the Nordic-Baltic region, supervisors and national central banks together with the European Central Bank have signed memoranda of understanding to strengthen coordination among countries. However, this arrangement has yet to be tested in a distress situation. In addition, the Swedish government set up an inquiry to analyse the consequences of Sweden's possible participation in the EU Banking Union, with reporting expected by November 2019.

([17]) The plan to move its headquarters from Stockholm to Helsinki will place the Nordea Group under the Single Supervisory Mechanism (SSM) and the Single Resolution Board (SRB). The Finnish Deposit Guarantee Fund will assume responsibility for insuring Nordea's deposits (for more details see the 2018 country report for Finland).

Table 4.2.1: **Financial soundness indicators**

Financial soundness indicators, all banks in Sweden								
(%)	2010	2011	2012	2013	2014	2015	2016	2017Q2
Non-performing debt	-	0.6	0.5	0.5	1.4	1.2	1.1	0.5
Non-performing loans	-	-	-	-	1.3	1.3	1.2	1.2
Non-performing loans NFC	-	-	-	-	1.8	1.9	1.6	1.7
Non-performing loans HH	-	-	-	-	1.4	1.2	1.2	1.2
Coverage ratio	126.3	69.8	63.5	63.0	26.0	26.9	26.1	26.3
Loan to deposit ratio(1)	217.4	215.3	207.8	201.9	201.0	195.7	192.5	183.7
Tier 1 ratio	10.7	10.9	11.3	11.5	19.2	21.0	22.7	22.8
Capital adequacy ratio	12.2	11.8	12.1	12.3	22.2	24.1	26.3	26.2
Return on equity(2)	10.2	10.6	11.3	11.1	11.8	11.2	11.9	-
Return on assets(2)	0.5	0.4	0.5	0.5	0.6	0.6	0.7	-

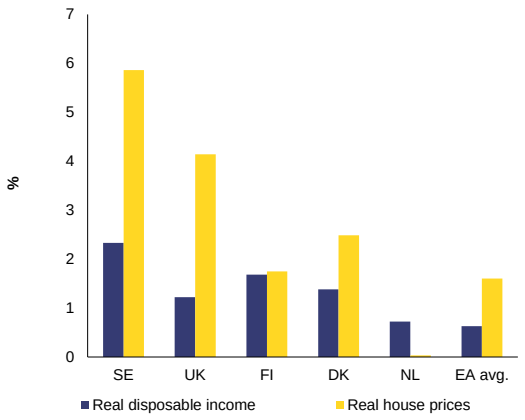
(1) ECB aggregated balance sheet: loans excl. to government and MFI / deposits excl. from government and MFI
(2) For comparability only annual values are presented
Source: ECB

4.2.2. HOUSING MARKET (*)

Housing market developments

While the Swedish housing market appears to be undergoing a correction, this follows a two-decade period of strong price growth. Since bottoming out after the banking crisis in the early 1990s, real house prices have more than tripled, significantly outpacing income growth as well as house price rises in other EU countries (Graph 4.2.2). In addition, whereas most EU countries experienced significant property market adjustments over the past decade, the house price upswing in Sweden has continued virtually uninterrupted until recently, aside from a short-lived and relatively mild dip around the 2008 financial crisis. This steep and broadly persistent growth in house prices poses risks to financial stability (see Sections 3, 4.2.1 and 4.2.3) and also has implications for social equality (see *Inequality* in Section 1).

Graph 4.2.2: **Averages of the annual growth rates of real disposable income and real house prices between 2001-2016**

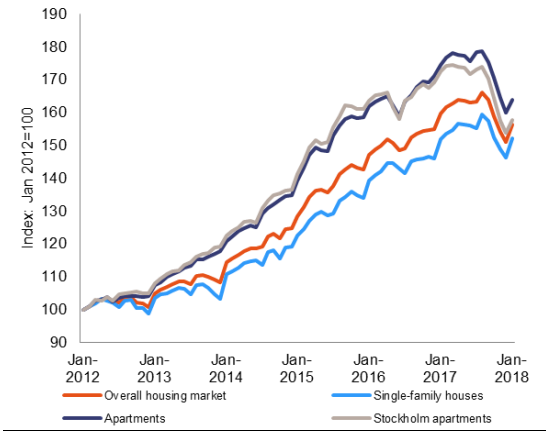


(1) Euro area (EA) average is calculated as the arithmetic average of the indices of the EA Member States (euro area changing composition).
Source: European Commission

House price momentum has decelerated notably since mid-2016, albeit with significant differences between regions and market segments. On average, real house price growth slowed from 12 % year-on-year in 2015 to 7.6 % in 2016, as a combination of steep price rises in prior years, the introduction of a formal amortisation requirement in June 2016 (see Section 4.2.3), and a sharp rise in new supply appeared to weigh on the market, notably in Stockholm. In 2017, house price inflation cooled further, accompanied by a slowdown in transaction volumes. In autumn 2017, the housing market started experiencing outright month-on-month

declines, culminating in an overall average price fall of 2.5 % ([18]) over 2017. This was driven mainly by weakness in the tenant-owned apartment ([19]) market, with prices of Stockholm apartments in particular continuing their underperformance relative to the national average and falling by 9 % over the year (Graph 4.2.3). Single-family homes, on the other hand, which until 2015 had lagged the apartment market, still registered a minor overall price rise (about 0.2 %) in 2017. In January 2018, prices rose again by 3.4 % month-on-month on average for the overall housing market, slightly above what could be expected based on seasonal trends.

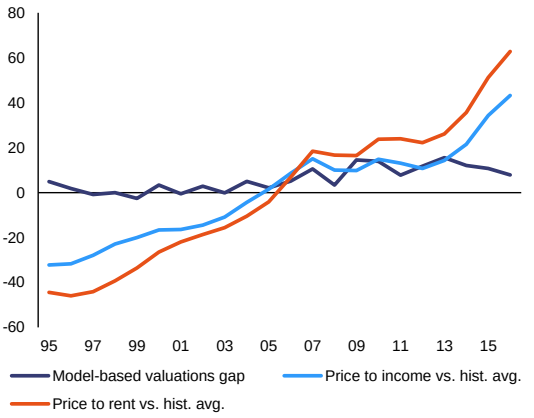
Graph 4.2.3: **House prices by market segment (nominal)**



Source: NASDAQ OMX Valueguard-KTH Housing Index

In spite of recent declines, valuation indicators suggest that house prices remain higher than seems justified based on fundamentals. Fundamental drivers, in particular strong population and income growth and increasing urbanisation, have supported house price growth (European Commission, 2016a). Nevertheless, over time valuations appear to have become disconnected from fundamentals. In particular, price-to-income and price-to-rent ratios (measures of affordability and return-on-investment of owner-occupied houses) are respectively about 40 % and 60 % above their long-term averages, and fundamental-model-based estimates suggest that the housing market is overvalued by around 8 % ([20]) as of end-2016 (Graph 4.2.4). These estimated valuation gaps are among the highest in the EU (European Commission, 2017a). While such indicators are inevitably subject to some modelling uncertainty, they do underscore the vulnerabilities linked to the Swedish housing market.

Graph 4.2.4: **Valuation gap based on price-to-income and price-to-rent ratios and fundamental-model-based estimate (1), (2)**



(1) Price-to-income and price-to-rent gaps are based on the percentage difference between these ratios and their long-run average (1995-2016)
(2) The model-based valuation gap is based on a proprietary house price model that reflects key fundamental drivers (including interest rates, demographics and construction output)
Source: European Commission

Demand-side issues

The impact of low mortgage rates on housing demand has been amplified by a number of specific structural features of the Swedish mortgage market. Monetary policy in Sweden has remained highly accommodative, with benchmark interest rates entrenched in negative territory for over 2 years now (see Section 1). While falling interest rates naturally act as a tailwind for the property market, in Sweden this

([18]) 2017 price growth estimates are based on NASDAQ OMX Valueguard-KTH Housing Index and are in nominal terms. (The corresponding figures for prior years are 8.6 % for 2016 and 14.3 % for 2015.)

([19]) The term "tenant-owned apartment" (*Bostadsrätt*) refers to a cooperative property ownership structure for an apartment building, where each resident owns a share in the overall building together with a legal right to occupy a specific housing unit. This is the most common owner-occupancy model for apartments in Sweden.

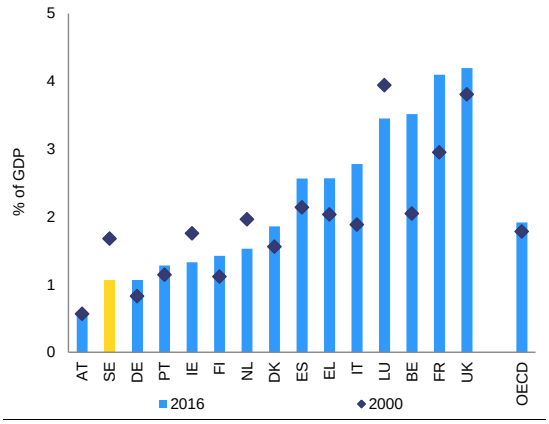
([20]) The model-based valuation gap estimate may appear relatively modest compared to the price-to-income and rent-to-income indicators. However, this is largely due to impact in the model of the current historically low level of mortgage interest rates – which itself could potentially change rapidly and significantly.

effect has been magnified by a high share of variable-rate mortgages, long contract maturities and still generally low amortisation rates (see Section 4.2.3 for details). As a result, debt service costs relative to incomes have steadily fallen to reach post-crisis lows in 2015, even as house prices and debt levels have continued to climb. In 2016, the introduction of the new amortisation requirement has raised average debt service costs for new borrowers somewhat (further discussed in Section 4.2.3).

The Swedish tax system provides some of the strongest incentives for home ownership in the EU. The overall tax take from property taxes in Sweden is about 1 % of GDP, just over half the EU average (Graph 4.2.5). This is partly due to a ceiling on annual property taxes, resulting in most owner-occupiers effectively paying a relatively modest fixed fee that does not scale with property values. Consequently, imputed rents are significantly undertaxed compared to other capital income, particularly for higher-value properties (European Commission, 2017a). Additionally, Sweden is one of the very few EU countries where an uncapped ([21]) tax reduction is granted on mortgage interest paid by owner-occupiers. This provides an effective subsidy for funding a property purchase using mortgage debt, and further favours (debt-financed) home ownership — both over other investment opportunities and over rental housing, for which the overall tax burden is considerably higher (SOU, 2014).

([21]) For further details on mortgage interest deductibility rules see footnote 6.

Graph 4.2.5: **Revenues from property taxes**



Source: OECD

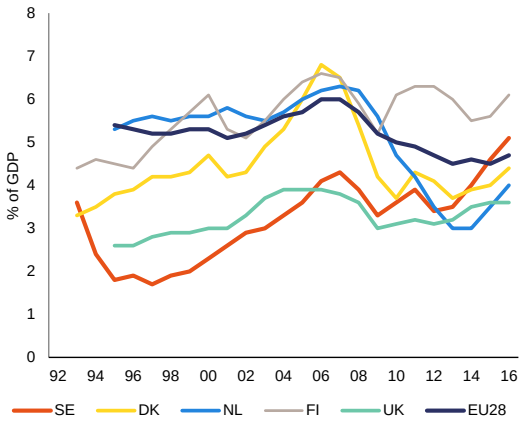
Reforming the tax incentives for home ownership and mortgages could also benefit job creation and income equality. By design, phasing out tax reductions for mortgage interest and raising recurrent property taxes would dampen demand for housing and mortgages and thus help contain imbalances in these areas. In addition, these tax reforms could bring about broader economic and social benefits as well. Analysis by the Swedish Fiscal Policy Council (*Finanspolitiska rådet*) has shown that reducing mortgage interest deductibility and abolishing the ceiling on recurrent property taxes would have a broadly progressive impact, as these tax incentives tend to be largest for higher-income households (Finanspolitiska rådet, 2016). This potential inequality-reducing effect could be further enhanced by using the fiscal room created by such reforms to reduce taxes on income from labour. Microsimulations using the Commission's EUROMOD model suggest that eliminating mortgage interest deductibility could free up an estimated SEK 17 billion (EUR 1.8 billion) to ease the labour tax burden, with a broadly progressive distributional impact (Box 4.1.1).

Supply-side issues

Investment in residential construction has been subdued compared to peer countries for a prolonged period of time. While rising house prices have spurred sizable investment in housing in other EU countries (particularly before the 2008 financial crisis), new construction in Sweden has remained muted historically (Graph 4.2.6). This is

partially explained by a steep fall in residential investment in the wake of the early-1990s banking crisis. However, new construction activity in Sweden continued to lag behind the EU average until 2013, in spite of comparatively high population growth and house price rises. Direct measures of the effect of house price growth on construction output also point to a relatively weak supply response in that period (European Commission, 2017a; IMF, 2015).

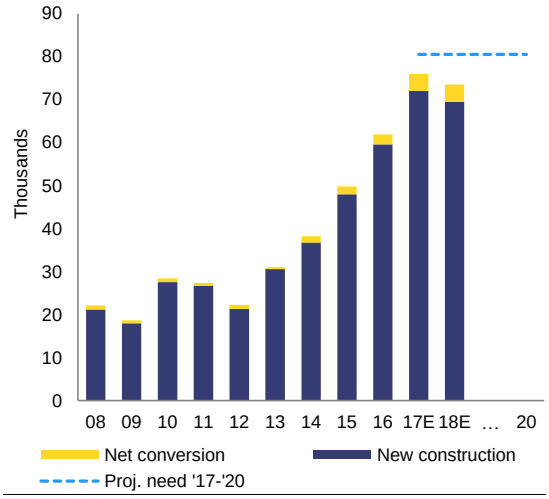
Graph 4.2.6: **Residential construction investment**



Source: European Commission

Building activity has picked up sharply in recent years, but still falls short of near-term demand. After experiencing a protracted post-crisis 'double dip', new construction has seen a notable upswing, with annual housing starts more than tripling from their 2012 nadir (Graph 4.2.7). However, this still remains somewhat below projected near-term needs, and growth in construction output appears likely to gradually taper off as capacity constraints in the sector become increasingly binding.

Graph 4.2.7: **Housing starts, including net conversions, versus projected need**



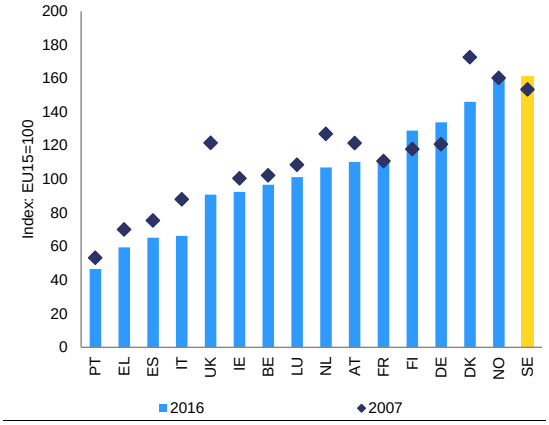
Source: Statistics Sweden (historical data until 2016); Boverket (estimated starts for 2017-2018, and projected need)

Moreover, while aggregate construction growth seems encouraging, it is unclear if it is focused on the regions and market segments where shortages are most pressing. While hard data are limited, it appears that the recent surge in construction activity may be overly skewed towards high-end developments (Riksbank, 2017b), including in some regional markets where end-user demand for such properties tends to be especially limited. As a result, there is a risk of oversupply in specific segments of the housing market, while a chronic shortage of affordable housing near major economic hubs remains.

A number of structural bottlenecks are constraining housing supply and raising construction costs. A first key issue is lack of developable land, partly driven by the fact that a large share of buildable land is owned by municipalities, who can have financial incentives for making it available in a piecemeal fashion over time rather than when it is needed most (European Commission, 2015). Secondly, while reforms have been introduced to simplify zoning and building regulations, overall they remain relatively cumbersome and complex. In particular, local standards tend to vary between different municipalities in some areas, creating a fragmented market that reduces efficiency and raises uncertainty for construction companies

(European Commission, 2016). Also, the timeline to obtain planning permission can be considerably longer than in other countries (Emanuelsson, 2015). This raises financial risks for construction projects and causes delays in new supply coming online. Finally, rigidities in the construction sector have weighed on productivity growth and limited competition among developers, raising construction costs in Sweden to among the highest in the EU (Graph 4.2.8).

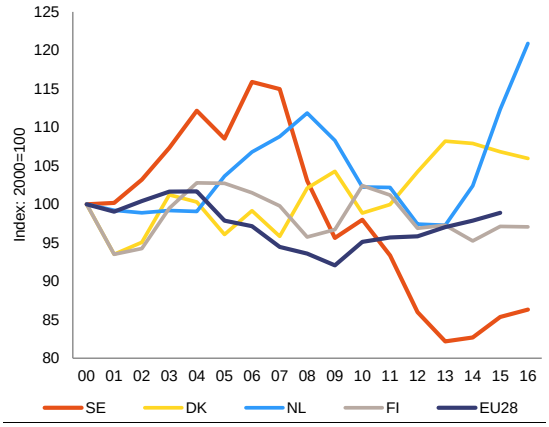
Graph 4.2.8: **Price level index for residential construction costs for selected EU countries and Norway**



Source: European Commission

Productivity in the construction sector has started to recover, but remains well below its mid-2000s peak. While construction productivity growth has been lacklustre in many countries, it has performed particularly poorly in Sweden (Graph 4.2.9). This is partly due to the broader housing supply cycle: housing construction, which accounts for a large part of value added in the construction sector, plunged after 2007 and did not recover meaningfully until 2013. However, structural factors likely also play a significant role, including fragmented planning regulations constraining potential economies of scale and relatively limited competition among construction firms. It remains to be seen if the recent positive trend will be lasting.

Graph 4.2.9: **Labour productivity in construction sector, Sweden and selected EU countries (1)**



(1) Labour productivity defined as gross value added per hour worked

Source: European Commission

Competition in the residential construction sector remains limited. Barriers to entry for small and foreign firms, like complex planning regulations that favour well-connected established companies, and the ability of large developers to control land resources, hamper competition (European Commission 2017a). Market concentration in the construction sector remains high, in spite of a modest decrease recently. Among the 30 largest construction companies, the share in turnover of the four leading ones dropped from 73 to 65 % over the past 5 years (Sveriges Byggindustrier 2012 and 2017).

Barriers to efficient usage of the existing housing stock

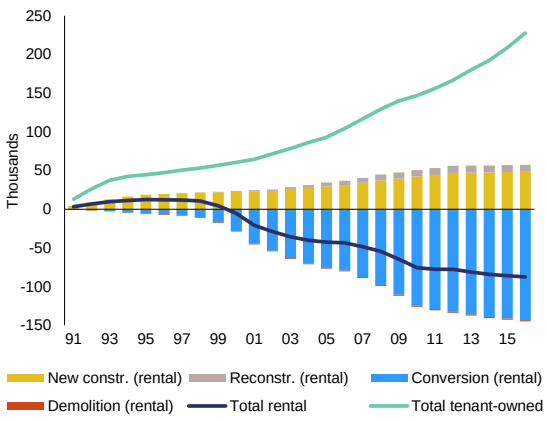
Sweden's unique rent-setting framework leads to below-market rents in major cities. Rent levels for most residential tenancies are set in negotiations between the Swedish Union of Tenants (*Hyresgästföreningen*) and housing companies using a collective bargain approach. These are in turn based on a 'utility value' (*bruksvärde*) determination, intended to reflect the quality of accommodations and tenant preferences in the negotiated rent level. In practice, however, this system tends to result in rents that are well below market levels, particularly in urban areas. In the Stockholm metropolitan area, for instance, model-based estimates suggest that negotiated rents are on average roughly 25-30 % below market rents, and considerably more so in the most

attractive central-city locations (Donner et al., 2017). While the Swedish system does not involve direct rent control regulations, the overall impact is thus essentially the same. Cross-country analysis shows that the effective degree of rent control and overall tenant protections in Sweden is among the highest in the EU (European Commission, 2017a; Cuerpo et al., 2014).

Below-market rents result in poor access to rental accommodation and create lock-in and 'insider-outsider' effects. The rent-setting system is highly favourable for 'insiders' who have been able to obtain a primary tenancy and thus enjoy low rents and effectively permanent security of tenure. Conversely, 'outsiders' — mainly newcomers to the rental market, such as students, recent immigrants and younger households — face great difficulty accessing rental housing, as the large demand/supply imbalances resulting from below-market rents lead to long waiting lists (e.g. on average over 9 years in greater Stockholm). In addition, the favourable conditions enjoyed by sitting tenants incentivises them not to move, even if their accommodation is no longer fully suited to their needs, thus creating lock-in effects in the rental housing market.([22])

The disconnect between actual rents and market rents has also impaired the supply of rental housing. Below-market rents combined with high land prices incentivise developers to favour construction of owner-occupancy housing over rental units ([23]). The situation also encourages the conversion of rental units into owner-occupied homes, thus further aggravating the rental housing shortage. This has been particularly problematic in major metropolitan areas: in greater Stockholm, since the early 2000s the total rental housing stock has steadily fallen (Graph 4.2.10), in spite of strong underlying demand. In contrast, the stock of tenant-owned apartments, the nearest owner-occupancy equivalent to rental apartments, has seen comparatively strong (albeit still insufficient) growth.

Graph 4.2.10: **Cumulative change in rental versus tenant-owned housing stock in Greater Stockholm**



Source: Boverket, Statistics Sweden

In addition, there are negative knock-on effects on labour mobility and social equality. The lock-in and insider/outsider effects in the rental market can prevent workers from moving to locations with the best job opportunities, thus hampering labour market dynamism. Furthermore, tight rental regulations combined with a severe shortage of affordable rental housing can exacerbate inequality and social problems. This particularly affects lower-income households who cannot afford to buy their own home and for whom access to affordable, entry-level rental housing is thus especially important ([24]). This may force them to resort to the growing shadow rental market, which can involve sizeable payments for unauthorised

([22]) There is an exchange system in place that allows tenants to swap apartments by mutual agreement. However, this only mitigates lock-in effects to a limited extent (because it requires direct matching between tenants moving in opposite direction), and it does nothing to prevent insider/outsider-effects as only those who already have a primary tenancy qualify. It can also lead to abuse, whereby tenancies in particularly attractive locations are exchanged in return for unauthorised payments.

([23]) This is somewhat mitigated by the possibility to use a special system of "presumption rents" (*presumtionshyra*). This exempts the property from the utility value system for a period of 15 years, allowing negotiated rents to better reflect market levels. However, even in these cases there is no mechanism to allow rents to adjust flexibly over time, e.g. to reflect growing demand in certain areas. In addition, under current rules, at the end of the 15-year presumption period rents are set to become subject to the utility value system again, which potentially could lead to a cliff-edge drop. This can create considerable uncertainty about long-run investment returns for new rental housing. An inquiry in the *presumtionshyra* system was conducted in 2017 to help address this issue, but failed to resolve the current lack of clarity.

([24]) In addition, these groups typically cannot rely on the informal networks through which a large share of primary tenancies in the rental sector are facilitated in practice (Donner et al., 2017).

sublets without security of tenure. Sweden's tight rental regulations also contribute to a relatively high degree of overcrowding among socially vulnerable groups, including non-EU migrants (OECD, 2017). While reforming Sweden's rental market may have significant redistributive and social consequences as well, this could be managed by a combination of tax measures and targeted subsidies for vulnerable households (Donner et al., 2017).

Capital gains taxes on property sales can make moving costly for homeowners, thus creating lock-in effects in the owner-occupier market. Sweden applies a 22 % capital gains tax on property sales, even when a homeowner is selling to buy another property of similar value elsewhere (meaning no actual economic gain is realised). In light of the steep house price rises over the past two decades, this implies that households who have owned their home for a long time can face prohibitively high moving costs ([25]). In practice, this tends to particularly affect elderly households living in a large single-family house looking to relocate to a conveniently-located apartment. Reforming capital gains taxation to eliminate this lock-in effect could help free up underused family dwellings from the existing housing stock and improve overall liquidity and supply-demand matching in the owner-occupier market. The latter will become especially important as the aggregate supply-demand gap in the housing market continues to gradually shrink thanks to the strong rise in construction output, while imbalances remain within market segments (see above).

Policy developments

Demand-side policy action in the housing market has been focused on curbing mortgage lending via macroprudential measures. Since 2010, Sweden has gradually introduced a number of measures to contain mortgage debt growth (and thus housing demand). Steps taken include setting loan-to-value limits, adjusting banks' risk weight floors, and introducing a formal mortgage amortisation rule in June 2016 (see Section 4.2.3 for details). In addition, an enhanced amortisation requirement for borrowers with high debt-to-income ratios is set to come in force in March 2018 (also discussed in Section 4.2.3).

While earlier measures largely failed to make a dent in house price momentum, the 2016 amortisation requirement appears to have had some modest impact. Analysis based on the macroprudential authority's annual mortgage market survey suggests that households affected by the new rule are buying somewhat less expensive properties on average, with the overall effect on purchase prices([26]) estimated at about 3 % (Finansinspektionen, 2017a). While this should not be interpreted as a direct measure of overall market impact ([27]), it indicates that the 2016 amortisation requirement likely contributed to the recent slowdown in house price growth.

Sweden has gradually implemented a range of measures to improve new housing supply in recent years. Policy action has mainly focused on streamlining the planning and appeals processes to make lead times shorter and more predictable, simplifying building and zoning regulations and more generally reducing red tape for new construction (European Commission, 2015a and 2016a; Emanuelsson, 2015). There has also been some modest budgetary support for new construction, either in the form of investment subsidies for specific types of housing (e.g. for students or the elderly) or as general construction bonuses to incentivise municipalities to promote more building activity.

The authorities are proceeding with the implementation of the 22-point plan for the housing market launched in mid-2016. The plan contains a range of measures aimed at making more land available for development, reducing construction costs, shortening planning process lead times and addressing some specific rental market inefficiencies. Significant parts of the plan

([25]) This issue is somewhat mitigated by the ability to defer (part of) the capital gains tax liability, but this only reduces the immediate cash flow impact and not the effective wealth reduction, and requires interest payments on the deferred amount.

([26]) This estimate is based on the average purchase price impact across all new mortgage borrowers, including those not affected by the amortisation requirement because their loan-to-value ratio is below 50 %.

([27]) The reason is that with the underlying data it is not possible to account for compositional shifts in properties bought, so a drop in average purchase price may simply signify that borrowers are buying smaller or less attractively located homes rather than paying lower prices for similar properties. In addition, cash purchasers are entirely excluded from the analysis by construction.

have been largely implemented over the course of 2017, particularly with regard to reducing construction costs and lead times. Other key reforms under the plan, including a comprehensive review of building and planning regulations and measures for more developable land, involve significant preparatory work and stakeholder consultation processes. It will therefore take more time before these proposals are finalised and they remain subject to implementation uncertainty. Nevertheless, overall, the 22-point plan and similar new initiatives will likely provide further support for the strong ongoing construction upswing.

Sweden is taking steps to raise participation of foreign companies in the construction industry. In July 2017, the government announced a plan to facilitate entry of foreign construction firms in order to increase competition and lower residential construction costs. The National Board of Housing, Building and Planning (*Boverket*) will set up a website with translations of the building regulations into other languages (initially just English) which should be operational by mid-2018. In addition, it will report on possible further measures to address obstacles foreign operators encounter.

4.2.3. PRIVATE INDEBTEDNESS (*)

Household debt

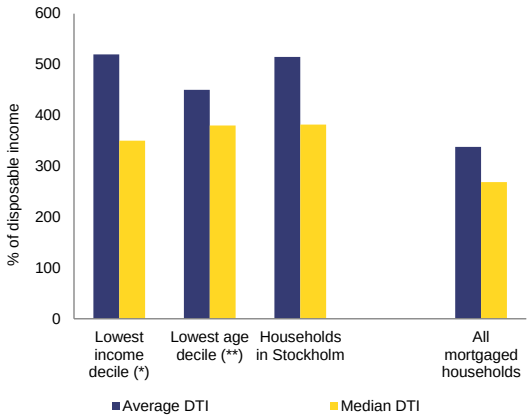
In spite of a modest slowdown since mid-2016, Swedish household debt continues to grow at one of the fastest rates in the EU. Household debt has been on a steep and persistent upward trajectory, outstripping GDP growth for over two decades now. In nominal terms, it increased by 7.0 % ([28]) in 2017, continuing a gradual deceleration from its recent peak year-on-year rise of 7.8 % in May 2016. However, its current growth rate remains among the highest in the EU, even though Swedish household debt levels already appear elevated compared to peer countries (European Commission, 2017a).

Household debt is unevenly distributed. The aggregate debt level across all Swedish households (including those without any debt) amounts to about 184 % ([29]) of disposable income as of Q3 2017. While an estimated 57 % of the adult population are tenants or mortgage-free home-owners (Ölcer et al., 2017), households who do have a mortgage have an average debt-to-income (DTI) ratio approaching 340 % (Blom et al., 2017). Among mortgaged households, DTI ratios tend to be highest for lower-income households (Graph 4.2.11), although this trend appears to be gradually reversing (Finansinspektionen, 2017b) — possibly driven by increasing difficulties faced by lower-income households to obtain a mortgage at all. Younger mortgage borrowers also tend to have higher debt loads relative to income than older households, and are more likely to have unsecured loans in addition to their mortgage (Finansinspektionen, 2017b). DTI ratios are also higher on average for those living in major cities, particularly Stockholm.

([28]) Year-on-year growth as of December 2017.

([29]) This includes only households' direct debt load. Many owner-occupiers living in tenant-owned apartments (see footnote 17) are also indirectly exposed to the debt burden of the tenant-owner association in which they own a share (Sveriges Riksbank, 2017a). Including this debt would raise the debt-to-income ratio by about 20 percentage points.

Graph 4.2.11: **Debt-to-income ratios for selected groups of mortgage borrowers (as of September 2017), (1), (2)**



(1) Disposable monthly income below about SEK 11 000 (EUR 1 142) (excluding certain tax-free income sources such as child allowance)
(2) Average household age (excluding children) 27 or lower
Source: Blom et al., 2017

Drivers for household debt growth

Household debt growth has been driven by house price rises coupled with structural factors favouring (mortgage-financed) property investment. The steady increase in Swedish household debt stems almost entirely from growth in loans for property acquisition (European Commission, 2017a). The latter is interlinked with rapid house price rises (see Section 4.2.1) in a mutually reinforcing way: higher house prices enable larger mortgage loans by increasing the value of the underlying collateral, and growing mortgage debt levels raise the total investment amount flowing into a limited supply of houses, thus putting upwards pressure on prices. In Sweden, this dynamic is further exacerbated by the following structural factors that act to lower debt service costs:

- Favourable tax treatment of owner-occupied housing and mortgages (see Section 4.2.2 for details).

- Mortgages are mostly variable-rate: about 73 % of new and 68 % of all outstanding mortgages are linked to short-term interest rates (European Mortgage Federation, 2017). This has reduced debt service costs as interest rates have fallen to historically low levels in recent years, but it also shifts risks related to future rate rises to the household sector.

- Swedish mortgage contracts have historically been characterised by long maturities compared to other EU countries, generally accompanied by low amortisation (i.e. capital repayment) requirements. This further amplifies the relative impact of lower interest rates on monthly mortgage payments (European Commission, 2017a).

Risks

Steadily growing household leverage coupled with elevated house prices makes the economy vulnerable to shocks. If mortgage interest rates were to rise – either driven by a gradual normalisation in monetary policy or by wider risk premiums ([30]) – highly-indebted households may need to rapidly reduce consumption to meet rising mortgage payments. This would reduce demand and raise uncertainty, potentially weighing on growth and employment and thus further decreasing households' ability to service their mortgages. Ultimately, this could lead to a disorderly deleveraging process with a significant broader macroeconomic impact, in line with historical developments in some other countries facing a combination of high house prices and household debt (OECD, 2017a). These vulnerabilities are also confirmed by proprietary debt benchmarks developed by the European Commission based on empirical cross-country evidence, which suggest that Sweden's household debt load is higher than can be justified by fundamental drivers, and above levels at which the risk of crisis becomes elevated.

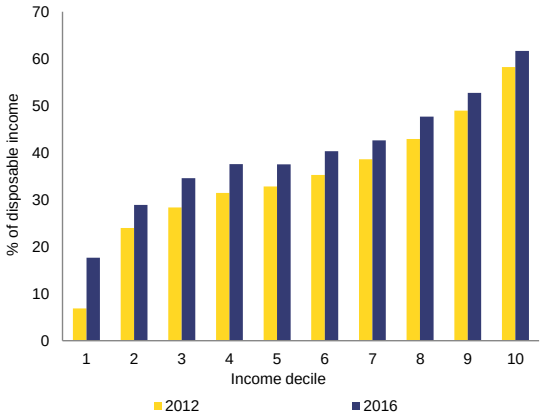
Risks are partly mitigated by households' robust payment ability and financial wealth. Households with a mortgage generally have relatively high income surpluses (roughly 40 % of disposable income on average) after mortgage service costs and day-to-day expenses (Finansinspektionen, 2017b). Households' strong payment ability is also reflected in a very low share of non-performing household loans (see

([30]) Wider mortgage risk premiums could potentially be triggered by, for example, a house price correction, a wider economic slowdown or higher funding costs for banks as market perceptions of their riskiness worsen.

Section 4.2.1). Additionally, households have a high savings rate and significant financial wealth, estimated at roughly 3 times their liabilities.

However, this relatively strong overall financial position would likely provide only limited cushioning in a significant housing market downturn. While income surpluses are high on average, they are heavily skewed towards higher-income households (Graph 4.2.12). Moreover, while significant income surpluses imply that most households would likely be able to continue servicing their debt even in a downturn, there could still be a considerable consumption reduction as households may wish to maintain or even raise their savings rate in light of increased economic uncertainty. As for financial wealth, close to 50 % of non-housing assets owned by Swedish households are invested in pension fund or life insurance instruments and can therefore only be accessed upon retirement. A large portion of the remainder — particularly equity investments, which account for about a third of total household wealth — is exposed to market risks, and would likely fall in value in an economic downturn. Consequently, rather than cushioning the impact of a housing market fall, this could further amplify it, by weighing on consumption via wealth effects.

Graph 4.2.12: **Estimated monthly income surplus (1) for newly mortgaged households in different income deciles, by year of origination**



(1) Income surplus calculations are based on an average of standardised cost assumptions for mortgage holders (including on e.g. operating costs for the individual household and tenant-owner apartment charges where applicable) used in banks' discretionary income calculation. For full details of the underlying methodology, see Finansinspektionen, 2017b (appendix 1).
Source: Finansinspektionen

Policy developments

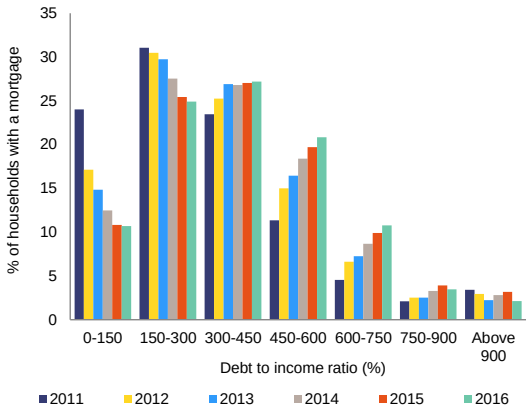
The authorities have gradually taken some policy action to curb household debt growth in recent years, relying mainly on macroprudential measures. These include the setting of a loan-to-value (LTV) ceiling of 85 % for mortgages in 2010 and the gradual raising of banks' risk weight floors for mortgages in 2013 and 2014. In June 2016, the authorities implemented a formal mortgage amortisation rule, requiring new mortgages to be paid down by a minimum of 2 % per year until the LTV drops below 70 %, and by 1 % afterwards until the LTV drops below 50 %. In December 2017, Sweden also adopted an expanded legal mandate for the macroprudential authority (see Section 4.2.1).

The 2016 amortisation requirement has had a considerable impact on borrower behaviour, but the effect on total debt incurred appears modest. Estimates based on the macroprudential authority's mortgage market survey indicate that the measure led affected borrowers to reduce their mortgage borrowings by 9-14 % (Finansinspektionen, 2017a). However, the impact on borrowers' overall debt levels appears much smaller (up to 4 %, and only for the most strongly

affected borrowers). This suggests that the amortisation rule may have prompted some households to resort to unsecured borrowing to replace part of their mortgage financing, although further investigation will be required before firm conclusions can be drawn.

Despite this possible undesirable side effect, the overall impact of the amortisation requirement appears broadly positive. It has led to a modest fall in the average debt-to-income ratios for new mortgage borrowers (to 402% in 2016 from 406% in 2015) after years of steep increases, and prompted a small reduction in the share of households borrowing at the highest debt-to-income levels (Graph 4.2.13). By design, it also raised amortisation rates: on average across all borrowers, mortgages obtained in 2016 are amortised at a rate that is close to 50 % higher than for those originated in 2015. While this still leaves overall amortisation levels quite low by international standards, it nevertheless represents a meaningful step forward that will, at the margin, contribute to the financial resilience of the household sector.

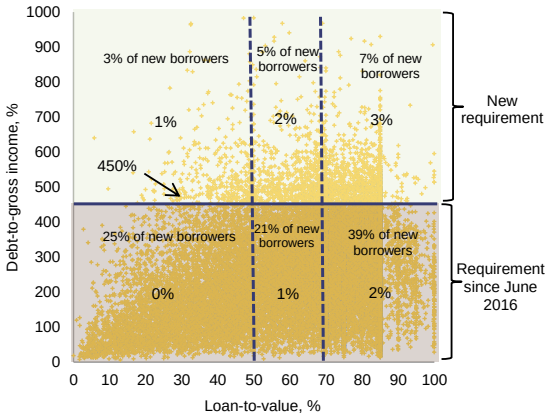
Graph 4.2.13: **Share of households with different debt-to-income ratios, new loans**



Source: Finansinspektionen

A strengthened amortisation rule for new mortgage borrowers with high debt-to-income (DTI) levels will come into force in March 2018. This new macroprudential measure will require households obtaining a mortgage with an overall debt level over 450% of gross income (roughly equivalent to 630 % of after-tax disposable income) to amortise by an additional 1 percentage point per annum. Combined with the existing amortisation rule introduced in 2016, this would bring the overall amortisation rate to a maximum of 3 % per annum (Graph 4.2.14). This represents an additional step towards reining in lending at excessive DTI levels. Given the recent cooling in the housing market, this measure seems to be balanced. It is projected to affect only about 14 % of new mortgages issued by raising the debt service cost (in cash flow terms) for high-DTI borrowing, as opposed to imposing an actual DTI limit.

Graph 4.2.14: **Rate of amortisation given the debt-to-income ratio and loan-to-value ratio (2016)**

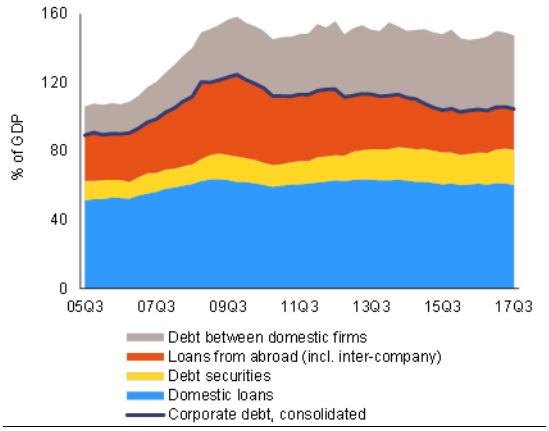


(1) Each dot represents one household.
Source: Finansinspektioen's sample from the mortgage survey in 2016 and own calculations. Figures on percentages of affected households may not add up due to rounding.

Corporate debt

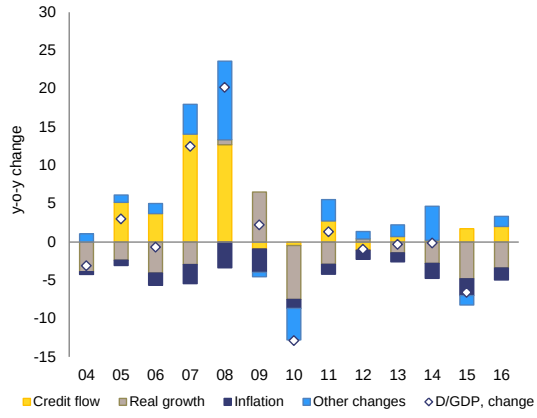
Swedish non-financial corporations continued a gradual post-crisis deleveraging process in 2017. Consolidated corporate debt fell to about 100 % of GDP as of mid-2017 (Graph 4.2.15). On a non-consolidated basis (including financing flows between domestic companies), corporate debt fell to 141 % of GDP as of Q2-2017, down about 5 pps year-on-year. Since its peak in 2009, the corporate debt-to-GDP ratio has come down by about 25 pps in aggregate. This has mostly been the result of 'passive' deleveraging, with net credit flows to Swedish firms positive but outweighed by growth and inflation (Graph 4.2.16). Still, the corporate debt level remains high compared to the euro area average of about 80 % of GDP (on a consolidated basis) at the end of 2016.

Graph 4.2.15: **Breakdown of corporate debt by funding source**



Source: Statistics Sweden

Graph 4.2.16: **Drivers of year-on-year changes in corporate debt to GDP ratios**

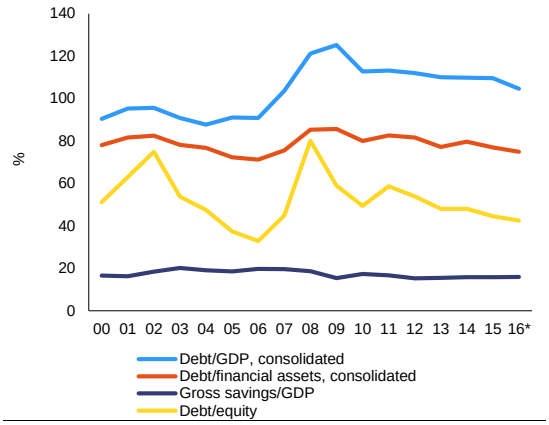


(1) 'Other changes' mainly reflect valuation effects
Source: European Commission

Domestic loans remain the main funding source for the corporate sector, with international bond markets gradually seeing increased use as an alternative financing option. Graph 4.2.17 shows that domestic lending (mostly from banks) to firms has been broadly stable at about 60 % of GDP since the financial crisis. However, larger corporations have increasingly come to rely on the bond market as an additional funding source, with its contribution growing from 11 % of GDP pre-crisis to about 16 % end-2016. Lending from abroad contracted from a peak of about 48 % of GDP in 2009 to 26 % of GDP over the same period. However, this change is essentially fully accounted for by intra-group loans from foreign branches, which fell sharply after corporate tax reforms in 2013 (European Commission, 2016a). These foreign intra-group loans were replaced by a larger funding contribution from domestic lending between firms and more bond market funding.

While overall corporate debt levels are still high, firms generally seem to have a healthy financial position with limited risks of financial distress. Sweden's corporate-debt-to-GDP ratio is relatively high compared to other EU countries. However, other leverage indicators demonstrate that financial risks are limited. Corporates have significant equity cushions, as indicated by a debt-to-equity ratio that is already at a quite low level (43 % end-2016, compared to about 60 % on average for EU countries) and that continues to fall (Graph 4.2.17). In addition, gross corporate savings are at a relatively healthy 16 % of GDP (about 12 % EU average), underscoring that the corporate sector is sufficiently profitable to be able to reduce its debt level quickly if needed.

Graph 4.2.17: **Leverage indicators for non-financial corporations**



* Estimated figure using quarterly data.
Source: European Commission

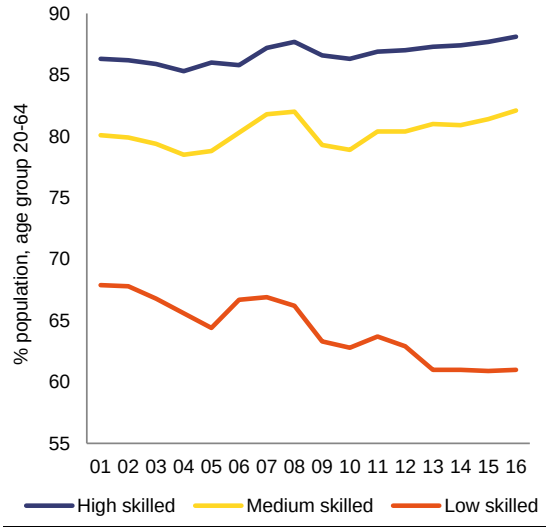
4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES

4.3.1. LABOUR MARKET AND SOCIAL POLICIES

Labour market

Strong economic activity has improved labour market conditions. The labour market is performing well. In the third quarter of 2017, the employment rate was at 81.8 %, and the unemployment rate fell to 6.8 %. Youth unemployment reached the lowest level since 2003. In addition, the percentage of young people not in employment, education or training declined to 6.5 % in 2016, well below the EU average of 11.5 %.

Graph 4.3.1: **Employment rate by educational attainment**

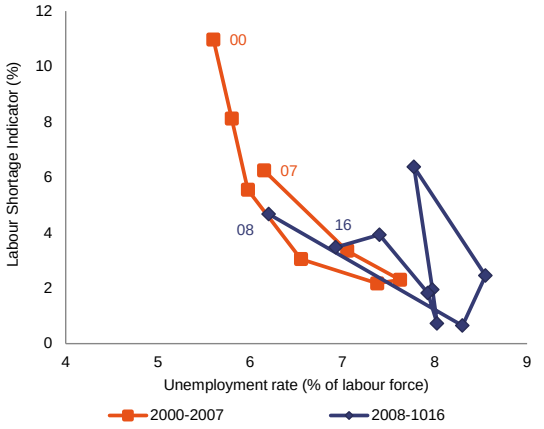


Source: Eurostat, LFS

However, labour shortages are emerging in certain sectors and a lack of affordable housing is undermining labour mobility. Despite the high employment rate, demand for labour remains strong and firms are reporting difficulties to recruit in certain sectors. The construction, education, health, science, engineering and ICT sectors are among those reporting the largest shortages of labour. Moreover, job creation is mainly concentrated in the major metropolitan areas, where limited availability of affordable housing is undermining labour mobility.

The developments on the labour market prove the importance of skills. During the latest economic expansion, the employment rate of low-skilled workers has been decreasing, while the one of medium and high-skilled workers increased (see Graph 4.3.1). Evidence suggests that this is a long-term issue, possibly linked to the fact that Swedish companies have positioned themselves at the high-end of the global value chain, thus reducing their demand for low-skilled labour. At the same time, the demand for highly-skilled workers is not fully matched by supply. The outward shift of the Beveridge curve indicates a higher unemployment rate for a given labour shortage in manufacturing. This suggests a growing skill mismatch (see Graph 4.3.2).

Graph 4.3.2: **Beveridge curve, 2000-2016**



Note: The graph shows the relationship between the labour shortage indicator and the unemployment rate. Labour shortage indicator derived from EU business survey results (% of manufacturing firms pointing to labour shortage as a factor limiting production). To highlight the changes before and after the 2008 crisis, two curves are drawn for the respective periods.
Source: European Commission based on Eurostat data

While participation of adults in lifelong learning is generally high, the government has made training of low-skilled people a priority. The percentage of adults in lifelong learning is at 29.6 %, well above the Education and Training target (15 %). Sweden excels on the percentage of unemployed participating in education or training and since 2017 adults over 20 who had already left the formal education system are entitled to start an adult education improving their employability. This is expected to provide about 70 000 adults with a higher level of skills. To make vocational upper secondary education more attractive, vocational education and training courses that prepare for tertiary education are being put into place.

Box 4.3.1: **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 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, digitalisation and new ways of working, the Pillar serves as a compass for a renewed process of convergence towards better working and living conditions.

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

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.

Sweden performs well on the indicators of the Social Scoreboard ([1]) supporting the European Pillar of Social Rights. The employment rate is high, while the gender employment gap and the NEET rate (the share of young people not in education, employment or training) are at low levels. These positive outcomes reflect an advanced welfare model, a strong social dialogue and a high level of gender equality.

The unemployment rate among youth and those born outside the EU is relatively high. The integration of new immigrants continues to put pressure on the labour market and the social policies, as well as on the educational system. This is due both to the high number of recently arrived and to the fact that acquiring skills needed on the Swedish labour market is a lengthy process. Various instruments are used to address this issue.

Sweden has a high participation rate of children under the age of 3 in formal childcare. Childcare in Sweden has been given high priority since several decades and has been developed as part of family policy with links to labour market policy. In particular, the costs of formal childcare for youngest children are capped at an affordable level and most facilities work long hours, allowing both parents to have full-time job. Addressing demographic changes, the 2018 budget further raises child benefits.

[1] The Social Scoreboard is composed of 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 reservations by Member States. Possible alternatives will be discussed in the relevant Committees. GDHI: gross disposable household income.

In 2018, the government is planning a number of measures to make the labour market more inclusive. The focus will be on groups at the margin of the labour market, such as unemployed low-skilled people (especially those who arrived recently from outside the EU). The government has earmarked SEK 7.3 billion (EUR 758 million) in the 2018 budget bill targeted for this. Furthermore, to make the labour market integration of the long-term unemployed and recently arrived migrants more efficient, five different employment subsidy programmes will be consolidated into one *(introduktionsjobb).* This new scheme includes harmonising the subsidy ceiling by synchronizing the level of the qualifying gross salary to SEK 20 000 per month (or EUR 2 077). The new scheme (*introduktionsjobb)* is set to begin in spring 2018 with a degree of wage subsidization at 80 %. Also social partners recently proposed a scheme to increase the employability of newly arrived and long-term unemployed (*etableringsanställningar*). This would combine education and employment and the

salary would correspond to the lowest level of the collective agreements.

Sweden's social safety net is well developed and facilitates labour mobility, while ensuring economic security. Compared with other Member States, unemployment benefits are quite generous. Among others, they can be drawn on the basis of 1-year work record for a relatively long period and their replacement rate at 12th month of unemployment is among the highest in the EU ([31]). The relative low long-term unemployment (20.1 % of all unemployed in 2017Q3, versus an EU average of 45.2 %) suggests that the system provides the right incentives for finding an appropriate job and keeping social security. The compulsory insurance against unemployment (first tier, flat rate benefit) covers self-employed workers who can also opt for an additional earnings-related (but state-subsidised) compensation. The design of the Swedish minimum income scheme makes it efficient in preventing severe material deprivation and persistent risk of poverty. However, jobless households remain at a considerable risk of poverty.

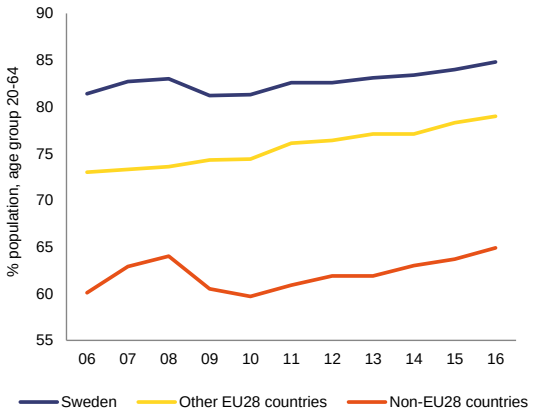
Migration policy

Sweden has a good track record of receiving and integrating migrants into the labour market. However, the historically high number of arrivals in 2015 challenged the country's capacity. Although the number of people seeking asylum has fallen sharply (close to 29 000 in 2016, compared to 163 000 in 2015), not all asylum applications have been processed yet.

The employment rate of non-EU born residents is better than the EU-average, but well below the one of the native population (Graph 4.3.3). In 2016 the employment rate of non-EU-born was 64.9 % (EU average 61.2 %). Compared to native born, a high employment gap is visible for non-EU-born women and people with a low level of education. Although the gap is lower for the second generation (Graph 4.3.4), it remains significant for these two groups, indicating the importance of social background and education for the integration process.

Evidence shows that labour market integration of migrants is a long-term process. For refugees and family migrants arriving between 1990 and 2014, it took on average more than 5 years for half of those who arrived in a given year to enter the labour market and 15 years for 80 %. Even after 20 years, people from those groups remain concentrated in the lower part of the earnings distribution (IFAU 2017).

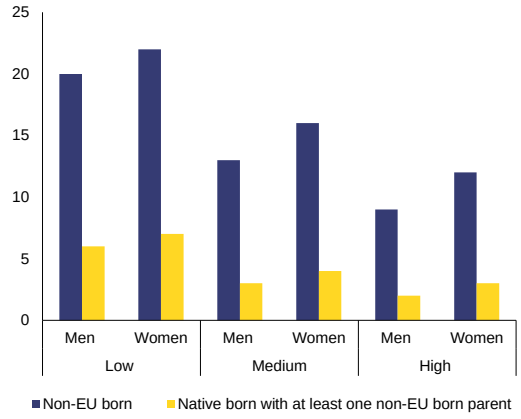
Graph 4.3.3: **Employment rate by country of birth**



Source: Eurostat, LFS

([31]) According to the benchmarking exercise in the area of unemployment benefits and active labour market policies, conducted within the EMCO Committee (draft Joint Employment Report 2018, [COM (2017) 674 final]).

Graph 4.3.4: **Gap in predicted employment rate for non-EU born and second generation (by gender and educational attainment) (1)**



(1)Based on a logit regression, which allows estimating the adjusted probability of employment controlling for age, education and gender. The gap is calculated in relation to native born with native born parents.
Source: European Commission calculations based on the 2014 ad hoc module of the Labour Force Survey

Appropriate education and limited language proficiency are among the key challenges migrants face when trying to enter the labour market. Recently arrived often have low educational attainment and even those with higher level of education face difficulties gaining recognition of their skills and qualifications acquired outside of the EU. The temporary migration act of 2016 may also in some cases slow down the integration process by introducing an incentive to choose a faster path for entering the labour market, which might prove less sustainable in the long term..

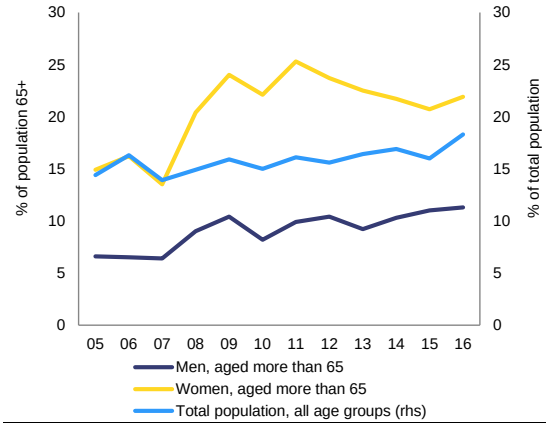
Policy measures have focused particularly on individual skills assessment, upskilling and job-oriented measures, including the 'fast-track' integration programme. The main instrument is a two-year introduction programme for the newly arrived, which first entered into force in 2010, and was modified in 2015 and 2016. The programme includes language courses, civil orientation and a range of activities aimed at getting people into the labour market. It is organised with the involvement of social partners, the public employment service and other relevant authorities and education agencies (European Commission, 2017a). Results have been mixed so far. A large share of the newly arrived are neither working nor studying after the programme ends. One year after completion, among the low-skilled participants only 22 % of the men and 8 % of the women were in (usually subsidised) employment (OECD, 2016c).

Since 2015, the 'fast-track' initiative aims at shortening the labour market integration process and has a focus on sectors with labour shortages. While it is too early to assess impact, the programme expanded in 2017 in terms of participants and professions covered (from 10 to 31), including teachers, doctors, nurses and electrical and mechanical engineers. Recent data shows that about 1 year after completing the programme, between 17 % and 50 % of the participants were employed, and after 1.5 year between 32% and 60% (Arbetsförmedlingen, 2017b).

Social developments

The overall poverty rate in Sweden compares favourably to the EU average, with poverty risks concentrated among older women (European Commission 2017f). The share of people at risk of poverty or social exclusion (AROPE) has increased from 15.6 % in 2012 to 18.3 % in 2016 (all ages). The AROPE rate is higher for certain groups, especially women aged 65 and older (21.9 % in 2016, Graph 4.3.5).

Graph 4.3.5: **Risk of poverty or social exclusion**



Source: Eurostat

Educational and social background has an impact on the risk of poverty. Children of low-skilled parents face a higher risk of poverty than children born to high-skilled parents. It is also higher for children of foreign-born parents, for

whom the risk of poverty increased to 58.1 % in 2016. Sweden has taken measures in education to protect children, particularly of disadvantaged groups from poverty (see Section 4.3.2).

Sweden dedicates sizeable human and financial resources to the health care sector. The healthy life expectancy at 65 is among the highest in the EU for both men and women. Similar to other EU Member States challenges remain regarding socioeconomic disparities including behavioural risk factors which are more prevalent among populations with lower income or education. The shortage of medical staff, in particular in rural areas, prevents securing an optimal mix of doctors and nurses, impeding the system's efficiency (OECD/European Observatory on Health Systems and Policies (2017)).

4.3.2. SKILLS AND EDUCATION

As job creation is concentrated in high-skilled occupations, investment in higher education and training is crucial to reduce the gap between labour supply and demand. The success of the Swedish economy is based on relatively knowledge-intensive production processes and entry wages are high compared with other Member States. Few jobs require less than an upper-secondary education. Therefore, education and training opportunities play a key part in maintaining appropriate skill levels and ensuring that students are equipped with those skills in demand (see also Section 4.3.1). Education and training opportunities are also essential to ensure appropriate integration of newly arrived and ultimately social cohesion.

The insufficient supply of ICT graduates could become a bottleneck for the economy. The number of new tertiary graduates in computing per thousand and aged 25-34 remains below the EU average. Thus, despite well-developed adult learning and business investments in ICT training of employees, there is a shortage of employees with ICT skills. In times when economies are undergoing rapid digital transformations, this shortage of people highly-skilled in science, technology and engineering could negatively affect Sweden's productivity and innovation, and prevent investments in R&D.

Basic skills proficiency picked up in 2015 after years of deteriorating performance and continues to be the government's focus. Student performance improved significantly in mathematics and reading compared to 2012, and remained stable in science (PISA results 2015). The previous negative trend in literacy performance was also reversed in the 2016 Progress in International Reading Literacy Study (PIRLS), an international survey of fourth grade students (aged 9-10). In line with international evidence, which suggests that focusing on basic skills in the first years of schooling is beneficial, the government is taking several measures. The 2018 budget bill continues to allocate a grant financing for 'early intervention' ([32]). Since over 4 000 additional teachers have already been employed and class sizes are already below the EU average, increasing teaching hours could be more cost efficient way forward. From autumn 2018, pre-school class (age 6) will be mandatory, meaning that compulsory education will last for 10 years.

The adequate provision of education could be hampered by a growing teacher shortage. The growing number of students is not matched by the number of teachers entering the profession. The Swedish Higher Education Authority estimates that in order to satisfy the needs, 21 000 new teachers would have to graduate each year, while at present only 13 000 do. It adds to the challenge that 39 % of teachers are 50 or older while only 7 % of teachers are under 30 (Universitetskanslersämbetet, 2017). The share of teachers without a formal qualification is therefore expected to increase ([33]). The low perceived status of teachers and salaries seem to prevent retention and recruitment (OECD, 2014 and 2016b).

The government has started to improve financial incentives for teachers, so far with mixed results. A career development reform was launched in 2013 and since the start of the 2016-2017 academic year, one in three school teachers has benefited from the government's 'Boost for Teacher Salaries' initiative (SEK 3 billion, or EUR 0.31 billion, per year) (see European Commission,

([32]) Up to the end of 2018, a central grant of SEK 2.3 billion (EUR 0.24 billion) is provided per school year for pre-school class (age 6) and grades 1-3 (age 7-9).

([33]) close to 30 % teachers are teaching while not trained as teachers i.e. without a 'pedagogisk högskoleexamen'

2017a, p.39). Results have been mixed: the National Audit Office found that although these two reforms increased teachers' salaries, they also created divisions between teachers. Therefore, to make the system clearer and more legitimate, the auditors have called for a common set of criteria to assess teachers' qualifications.

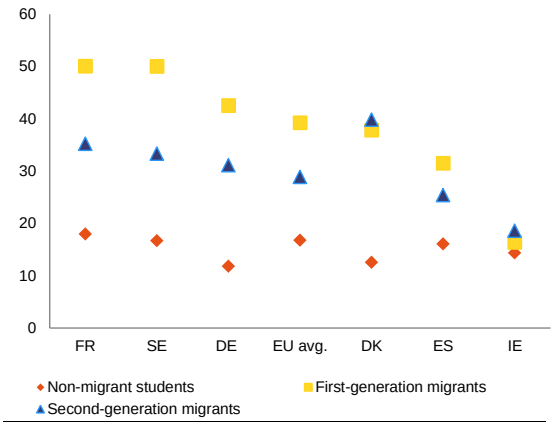
There are signs of growing inequalities in learning outcomes. In OECD PISA results for 2015, the impact of students' socioeconomic background on their performance in science at age 15 is around the OECD average. However, where in 2006 socioeconomically advantaged students scored 77 points higher in science than disadvantaged students, in 2015 the difference increased to 94 points, equivalent to more than 3 years of schooling.

The performance gap between foreign-born and native students remains high and is widening. In PISA 2015, one in two foreign-born students performed below the baseline level in science (Graph 4.3.6). Since students with a migrant background represent 17.4 % of the 2015 PISA population, compared to 11 % in PISA 2006, these results clearly indicate a growing concern. The transition from compulsory to upper secondary school remains a hurdle for many foreign-born students (see European Commission, 2017a, p38). The widening of the performance gap since 2008 probably reflects changes in the composition of foreign-born students: recent arrivals are on average older and increasingly from countries with weaker school systems (Grönqvist, H., Niknami S., 2017).

The distribution of school resources does not guarantee equal learning opportunities. There is a strong relationship between performance and the types of school that students attend. The share of schools where more than 20 % of students do not obtain the necessary grades to qualify for an upper secondary 'national programme' is on the rise. The concentration of low-achieving students from a disadvantaged socioeconomic background in schools with fewer resources is largely a result of residential segregation. Nevertheless, evidence also suggests that school choice, which was part of the 1990s comprehensive school reforms, has exacerbated school segregation.

The government increased resources to tackle inequalities in learning outcomes between pupils from different socioeconomic backgrounds. In the 2018 budget, the government proposes to allocate additional resources to improve equity and knowledge development in schools. In 2017, the direct investment in education by the central government already amounted to SEK 11 billion (EUR 1.14 billion). An additional disbursement of SEK 10.5 billion (EUR 1.1 billion) in 2018-2020 is proposed to reduce inequalities in the school system. The focus on equity and the weighting of funding based on pupils' socioeconomic background are fully in line with the recommendation made by the Swedish School Commission.

Graph 4.3.6: **Proportion of low achievers in science by immigrant background in 2015 (1)**



(1) The proportion is expressed as the percentage of approximately 540 000 students who completed the assessment in 2015, representing about 29 million 15-year-olds in the schools of the 72 participating countries and economies of the OECD.
Source: OECD

Integrating the newly arrived pupils into the school system remains a priority for the government. In the 2016-2017 school year, close to 80 000 pupils in compulsory schools were newly arrived, 17 000 more than a year before. Although admission to schools is still largely left to the discretion of the local municipality and the head teacher, central government guidelines have started to set standards. From 1 January 2016, skills mapping is the basis for placing students in a grade and for planning their study programme. Newly arrived students may be offered introductory classes for up to 2 years to ensure

their phased transition to regular schooling. Nevertheless, structured assessment of students' knowledge in various subjects is still inadequate. Their progress is not systematically tracked, and documentation on their abilities may not be passed on if they move to another municipality. Bridging the gap between schools and newly arrived parents is a further challenge. In addition, the distribution of newly arrived pupils remains unequal, both between municipalities and between schools.

Box 4.3.2: ***Policy highlight - Inclusive processes in Sweden***

Swedish society is founded on an inclusive and consensus-based approach, often referred to as "the Swedish model". This model is aiming at inclusive growth to increase prosperity for all, while safeguarding the autonomy and independence of citizens in order to prevent power imbalances. It is based on three pillars: (i) a labour market facilitating adjustment to change, (ii) a universal welfare policy, and (iii) an economic policy that promotes openness and stability[1]. A consensus-based approach is also applied to issues of EU relevance. In order to promote a more participatory approach, the government is committed to further increase knowledge and involvement in matters decided within the EU.

Concerning the labour market, the Swedish model implies that the social partners are responsible for wage formation without any interference from the state. In collective agreements they specify the labour market conditions. This way of working has avoided severe labour market disputes for a long time. The recently proposed '*etableringanställningar*' (see Section 4.3.1) is an example of an innovative working scheme stemming from social dialogue, rather than from government's initiative.

In the context of the European Semester and the EU 2020 Strategy, the Government has established different fora to ensure the involvement of relevant parties. In particular:

- Consultations with social partners take place in a reference group with representatives from the ministries and the social partners, and the social partners can also submit written suggestions for the national reform programme. To further enhance participation, consultations on broader EU matters will take place in recently established biannual advisory boards ("EU-råd").
- To benefit from the expertise of civil society and interest organisations, these groups can participate in consultation procedures relevant for the Europe 2020 Strategy and the national reform programme. To further strengthen their participation, thematic consultation forums for EU matters have been introduced ("EU-sakråd").
- To ensure a proper dialogue between national, regional, and local level, a National Forum for Sustainable Regional Growth and Attractiveness 2015-2020 has been set up. It meets four times a year, both at political and administrative level.
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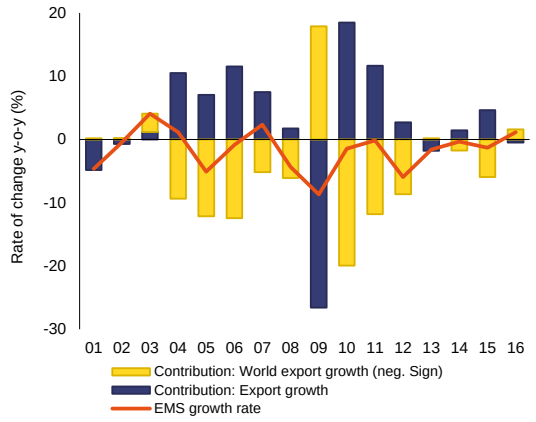
(1) The Swedish Model, Government Offices of Sweden, Ministry of Finance, 2017

4.4. INVESTMENT

4.4.1. EXPORT PERFORMANCE

The increase in Sweden's share of world exports in 2016 appears largely driven by temporary factors. After a cumulative fall of over 30 % since the early 2000s, Sweden's share of the export market rose by 1.1 % in 2016. However, this was driven primarily by a slowdown in world trade (Graph 4.4.1), which more than offset a slight fall in the value of Swedish exports (expressed in EUR) ([34]). With global trade rebounding since 2017, this will likely prove a one-off. The underlying declining trend in Sweden's share of world exports can thus be expected to remain broadly intact, particularly given the structural nature of its drivers (European Commission, 2017a).

Graph 4.4.1: **Yearly changes in export market share: contribution of world trade versus growth in Swedish exports**



Source: European Commission (Eurostat)

This decline in export market share is linked to changing global trade patterns and does not suggest any issues with competitiveness. The cumulative loss in Sweden's share of world exports over the past 10 years is broadly in line with other industrialised economies that have a similar focus on high-value-added exports (European Commission, 2017a). The underlying reason for this broader trend is the increasing volume of trade due to the integration of emerging economies into global supply chains. As a result, world trade growth outpaced export growth for many industrialised countries (European Commission, 2016a, p. 16). As such, Sweden's declining export market share does not suggest any underlying fall in competitiveness. This conclusion is buttressed by the benign change in cost competitiveness indicators and Sweden's strong performance in non-cost competitiveness (European Commission, 2017a).

In 2017, Sweden took further steps to counteract its shrinking export market share by moving forward with the 2016 export strategy. The authorities decided to have regional export centres in all 21 counties (instead of just six as initially envisaged) thus ensuring targeted internationalisation support closer to businesses. The Swedish Customs Service also restructured its website to better target businesses and individuals and to provide an efficient and automated information management system. The Customs Service consulted businesses and sectoral organisations to identify problems with the current approach to customs management. This work was undertaken after Sweden's National Board of Trade identified obstacles to import and export.

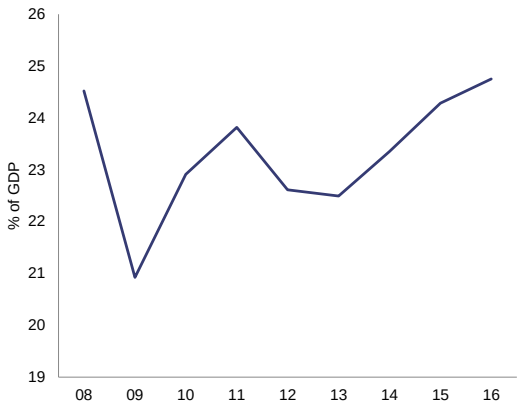
4.4.2. INVESTMENT SITUATION

Investment levels have essentially rebound since the substantial drop during the crisis (Graph 4.4.2)**.** Apart from investments in dwellings and infrastructure (Graph 4.4.3), it is investments in R&D, as well as computer software and databases (together accounting for more than one fourth of total investment) that have increased the most as a share of GDP over the latest period. At the same time, productivity developments which as a general rule are linked to investment, are still lagging with an increase of only 0.2 % per year on average in 2007-2014.([35])

([34]) Swedish exports grew robustly in local-currency, i.e. in krona terms in 2016 (see Section 1), but due to a weaker krona this translated into a small fall when converted into euros.

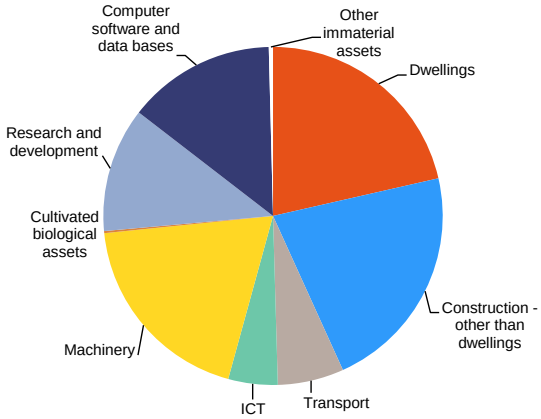
([35]) Further details on the productivity trends in Sweden can be found in Konjunkturinstitutet (2015).

Graph 4.4.2: **Gross investment**



Source: Statistics Sweden

Graph 4.4.3: **Breakdown of investment by sector in 2016**



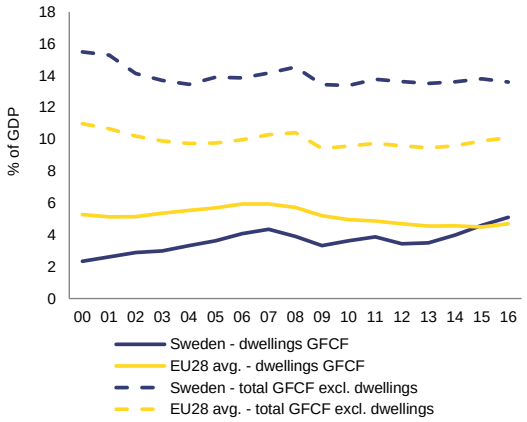
Source: Statistics Sweden

Stagnating productivity is an indication of diminishing returns on technological investments, and a slower pace in development of the ICT sector since 2007. It is also linked to a more long-term compositional shift, away from the highly productive industrial sector towards the labour-intensive services sector.

Investment in dwellings

Investment in dwellings has accelerated significantly in recent years. Residential construction investment has been growing rapidly since 2013 and has been the main driver of overall investment growth in Sweden (Graph 4.4.4). It is now slightly above the EU average for investment in dwellings but this follows a long period of underinvestment that led to a large structural housing shortage, particularly in major cities (see Section 4.2.2).

Graph 4.4.4: **Gross fixed capital formation, dwellings versus other investment, comparison with EU average**



Source: European Commission

Investment in infrastructure

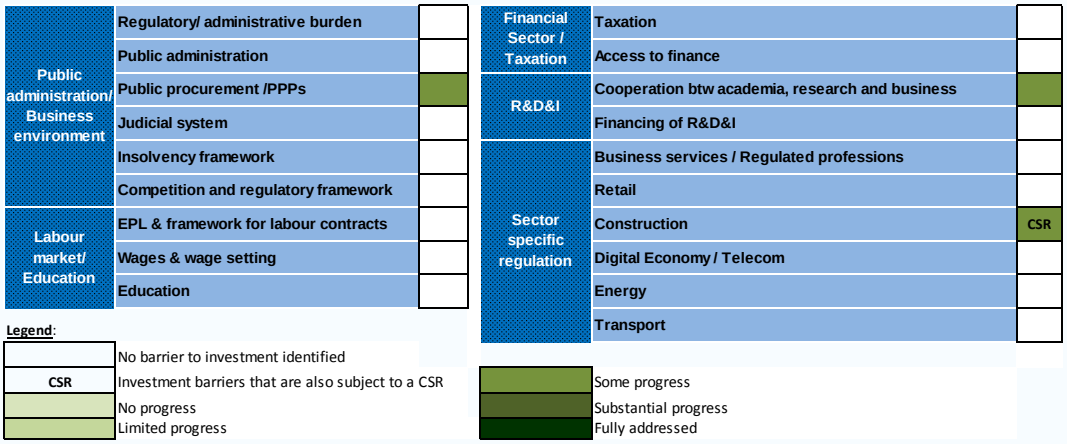
Sweden's infrastructure, particularly the railway system, could benefit from additional investments. Among EU Member States, the quality of Swedish infrastructure ranks 9th in the Global Competitiveness Report (World Economic Forum, 2017). Railroad infrastructure in particular scores relatively low, in contrast with Sweden's strong performance on most other competitiveness indicators considered in the Report. To help address this, the Infrastructure Bill for 2018-2029 provides for an overall increase of 20 % in infrastructure investment (47 % for railway maintenance) compared to the previous planning period covering 2014-2025. Moreover, Sweden announced plans for a first high-speed railway between major metropolitan regions (see Section 4.5.3). This infrastructure investment could also serve to open up opportunities for new residential development, thus helping to alleviate the housing shortage in urban areas.

Box 4.4.1: **Investment challenges and reforms in Sweden**

Macroeconomic perspective

Total investment as a % of GDP was above the EU average over the last decade. Both private and public investment have grown faster than GDP and than the EU average. Even certain sub-categories like investment in construction historically below the EU average have started to grow rapidly. Private investment is expected to grow at a lower but still robust pace with capacity constraints starting to bind in some sectors. Public investment in housing, healthcare and education infrastructure is also set to remain robust in 2018.

Assessment of barriers to investment and ongoing reforms



Barriers to investment in Sweden are overall low (European Commission, 2017a). Some reforms were adopted in public procurement (see Section 4.4.3), research and innovation (see Section 4.5.1) and construction investment. However, scope remains for further measures, particularly on tackling barriers for construction (see Section 4.2.2).

Main barriers to investment and priority actions underway

1. Investment from SMEs could benefit from more transparent public procurement procedures, as the share of contracts awarded to SMEs remains low. The new Public Procurement Strategy (see Section 4.4.3) can contribute to fostering competition, stimulating innovation and developing new products and services.

2. Cooperation between academia and business could be further enhanced, particularly for SMEs. Initiatives such as the Innovation Partnership Programmes 2016-2018 (see Section 4.5.1) can help promote increased collaboration.

3. Construction investment has been held back by a number of interlinked structural barriers. Sweden has gradually implemented a range of policy steps to tackle these bottlenecks (e.g. streamlining planning processes), coupled with some budgetary support. This has contributed to a significant pick-up in residential investment in recent years, but some key structural bottlenecks remain (see Section 4.2.2).

4.4.3. BUSINESS ENVIRONMENT

Sweden has a high-quality and competitive business environment. The country stands out in several areas, including public administration, access to finance, innovation and ability of SMEs to exploit international opportunities. The authorities regularly assess framework conditions to identify and address challenges.

The overall administrative burden for companies is low, although some specific challenges remain. SMEs continue to appreciate the stability of the regulatory environment (European Commission, 2017b). The time needed to set up a business has further fallen to 4 days ([36]). The e-business portal www.verksamt.se is continuously expanding its services and is a one-stop-shop for business reporting. However, an increasing challenge is the slow processing of work permit extensions for highly-skilled non-EU professionals. Finally, national rules and procedures for companies to directly transfer their registered offices into and out of Sweden are missing.

Sweden is one of the top performers in Europe for access to finance. The 2017 survey on access to finance confirms that companies have good access to finance in general (European Commission, 2017c). Almost no SME who applied for a loan was rejected (compared to 5 % at EU level). The 3 most important issues SMEs reported were staff, customers and competition. Only 9 % of SMEs said that access to finance was their most important concern (2013: 10 %). A much higher share than the EU average considers venture capital relevant to their activities. Availability of venture capital is adequate with several private and public funds active on the market. In addition, access to public financial support has further improved with even fewer SMEs reporting difficulties (European Commission, 2017b). SMEs benefit from financial support by various European programmes (InnovFin, EFSI, Employment and Social Innovation (EaSI) programme) and from the European Investment Bank ([37]).

Sweden's innovation performance ranks high in the EU. Relative strengths of the innovation system are in human resources, an overall innovation-friendly business environment and attractive research systems (European Commission, 2017d). At the same time, the share of employees with specialised ICT skills continued to fall and is now below the EU average. The share of companies training their employees on ICT has also fallen (European Commission, 2017b). 28 % of SMEs perceive a shortage of skilled workers as an important barrier to growth (Tillväxtverket, 2017) (see Section 4.3).

Public procurement

The public procurement system is generally efficient and works well, apart from some specific aspects. The proportion of contract award notices without information on the contract value remains very high (20 %, against 6 % on average across the European Economic Area). Thus, it is difficult to identify any unjustified modification of contracts and whether the prices paid correspond to market prices.

The adoption of a national public procurement strategy in 2016 is an important development. This strategy ([38]) promotes the use of public procurement as a tool to drive innovation, address environmental considerations and contribute to a socially sustainable society. It aims at raising the number of potential suppliers and the level of competition: increased SME participation should be encouraged through the division of major public procurements into smaller parts. The strategy also promotes transparency and a better use of data. Overall, the goals stipulated in the new strategy are in line with the priority areas identified by the European Commission ([39]). The National Agency for Public Procurement is using seminars and targeted dialogues with contracting authorities to ensure implementation of the strategy.

([36]) Source: Bolagsverket (Companies Registration Office)

([37]) An overview of EU financial support programmes relevant for Swedish SMEs is available on http://europa.eu/youreurope/business/funding-grants/access-to-finance/search/en/financial-intermediaries?shs_term_node_tid_depth=1646

([38]) See http://www.upphandlingsmyndigheten.se/globalassets/english/procurement/national_public_procurement_strategy_english_web.pdf

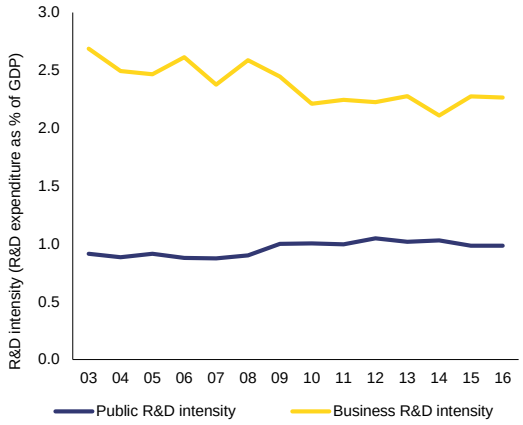
([39]) Commission Communication 'Making Public Procurement work in and for Europe', COM(2017) 572 final, available at: http://ec.europa.eu/docsroom/documents/25612

4.5. SECTORAL POLICIES

4.5.1. RESEARCH, DEVELOPMENT AND INNOVATION

Sweden is one of Europe's innovation leaders. The country benefits from an excellent science base, a highly qualified workforce and several internationally competitive and innovative large companies, both in the manufacturing and services sector. This is also visible in the stable performance for innovation (European Innovation Scoreboard summary index) and business R&D intensity (Graph 4.5.1).

Graph 4.5.1: **Change in business R&D intensity and public R&D intensity (1)**



(1) Public R&D intensity: Government intramural expenditure on R&D (GOVERD) plus higher education expenditure on R&D (HERD) as % of GDP.
Source: European Commission (Eurostat)

Continued investment, stable framework conditions and a broader innovation base are important to keep this leading position. Sweden's innovation model has traditionally relied on large multinational enterprises. The internationalisation of these companies has, however, led in some cases to headquarters moving abroad. There is a risk that corresponding research and innovation activities could partially follow, if conditions do not remain attractive. In addition, the economy has not yet fully exploited the potential of innovative SMEs and start-ups.

There is room for closer cooperation between academia and business. Knowledge exchange and joint projects among firms and universities can support marketable R&D and raise business awareness of upcoming scientific developments. Private co-funding of public R&D expenditures and the share of public-private co-publications in all scientific publications are indicators commonly used to capture such interaction. In both dimensions Sweden's performance has declined in recent years. ([40]) In particular, the below-average performance in co-funding of public R&D expenditure seems to suggest there is scope for closer cooperation.

Ensuring the supply of highly-skilled workers is vital for innovation and business investments. Recent years saw a gradual decline of the number of new graduates, in particular in science and engineering and notably those with special ICT skills (see Section 4.3.2).

Recent policy initiatives have started to address these key challenges. In 2016, the government has launched the 'smart industry' initiative to boost competitiveness and innovation. The 2017-2020 Research Bill also supports both basic and applied research and the development of human resources through an additional budget of around SEK 2.8 billion (EUR 291 million) in 2017-2020, while cooperation between academia and business is promoted e.g. within the five innovation partnership programmes 2016-2018 ([41]).

4.5.2. ENERGY, RESOURCES AND CLIMATE

Climate policy

Sweden's climate policy has been successful and remains ambitious. Between 1990 and 2015 the country's greenhouse gas emissions fell by 25.1 %, more than the EU average of 23.7 %, while its GDP per capita increased by 29 %. In June 2017 the Swedish Parliament adopted a national climate policy framework to have no net emissions of greenhouse gases into the atmosphere by 2045 and negative ones after that. The intention is to move towards an entirely renewable electricity system by 2040, without banning nuclear energy and to halve

([40]) European Innovation Scoreboard 2017 available on http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en

([41]) The specific partnership programmes are (i) next generation's travel and transport, (ii) smart cities, (iii) circular and bio-based economy, (iv) life sciences and (v) connected industry and new materials. See: http://www.government.se/articles/2016/07/innovation-partnership-programmes--mobilising-new-ways-to-meet-societal-challenges/

energy intensity in 2030 compared to 2005. For emissions outside of the EU emissions trading system (ETS), the target is a reduction of 75 % compared to 1990 ([42]).

Although Sweden is on course to meet its EU 2020 greenhouse gas emission target, CO2 emissions from transport remain a challenge. According to the latest projections, the greenhouse gas emission target is expected to be achieved by a wide margin (see Annex A). Emissions from transport account for 33 % of total greenhouse gas emissions and more than 50 % of non-ETS emissions. This is partially related to the Swedish car fleet, which in 2015 had an emission level above the EU average (131 gCO2/km versus. 124.7 gCO2/km). The government therefore has created tax incentives for low-emission vehicles/fuels, and premiums for the purchase of new plug-in hybrids and battery-electric vehicles.

Energy

Energy market

Sweden benefits from a dynamic and competitive electricity wholesale market. This is supported by full liberalisation of the wholesale market combined with good connectivity both to the Nordic electricity market and other European countries. Concentration of power generation is well below the EU average and has been falling over the last decade. Wholesale electricity prices are among the lowest in the EU. However, they are vulnerable to the hydrologic situation due to the importance of hydro power and the availability of the fleet of nuclear power plants.

Households' electricity prices are somewhat below the EU average, and have gradually decreased since 2013. Annual switching rates from one electricity supplier to another are high (10.2 %) and compare favourably to other EU countries. Swedish consumers increasingly opt for more innovative offers such as dynamic electricity contracts linked to spot market prices. The uptake of price-based demand response services has been greatly facilitated by the full rollout of smart meters and a law that has given smaller electricity consumers the right to receive hourly metering and billing for free since 2012.

Gas represents a negligible share of households' energy consumption and therefore gas retail markets are not fully developed. As a result, despite relatively low market concentration prices are higher than the EU average, although they have fallen somewhat since 2013. In addition, taxes, which amount to 45 % of the final price, are also contributing to relatively high household gas prices.

Energy efficiency

Despite a gradual decline in energy consumption over the past years, absolute energy consumption increased in 2016. Therefore, the country is some distance off reaching the 2020 national target.

Energy intensity in industry is well above the EU average. The Swedish industry remains the largest energy consumer accounting for over a third of total final energy consumption. In 2015, Sweden was one of only two EU countries with an increase in industry energy intensity, partly due to the strong presence of energy intensive industries. The government has proposed an energy efficiency programme for the industry sector as part of the budget bill for 2018.

The residential sector's energy consumption per square meter is well above the EU average, even after correcting for climate conditions. While this may partially be due to methodological differences in quantifying living areas, it may in part be related to the widespread use of 'warm rent'. Under this system, occupants of apartment buildings do not pay individually for space heating and domestic hot water, which reduces their incentives for energy efficient behaviour.

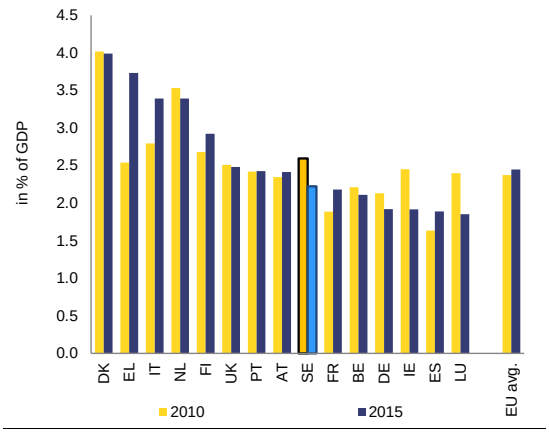
Environmental taxation

Sweden's share of environmental taxes in GDP has fallen since 2010 and was relatively low compared to other Member States in 2015 (Graph 4.5.2). Partly, the sliding share has been due to the intended behavioural impact of taxes, and an increased substitution to biofuels in the transport sector.

([42]) For details, see the 2017 country report for Sweden (European Commission, 2017a, p.47).

In recent years, there has been a focus on removing, or limiting, exemptions and reductions in tax rates for carbon and energy, which should help increase environmental revenues. Further, discounts in the carbon tax on heating fuels in the non-ETS sectors have been progressively reduced and will be totally abolished in 2018. Since 2017, an additional annual appreciation rule for taxes on petrol and diesel has been applied with an annual adjustment of two percentage points on top of consumer price inflation. Recent initiatives to make the economy greener include the increased taxation of aviation in the 2018 budget bill.

Graph 4.5.2: **Tax revenues from environmental taxes (1)**



(1) Energy taxes include taxes on energy products used for both transport and stationary purposes. (2) Transport taxes include (i) taxes related to the ownership and use of motor vehicles, (ii) 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 of use of a natural resource.
Source: European Commission

4.5.3. TRANSPORT SECTOR

Given Sweden's geographical size and location, reliable transport modes are important for trade, mobility and regional cohesion. In spring 2018, the government will decide on the 2018-2029 national transport-modes plan, which the Swedish Transport Administration presented in August 2017. The plan includes a budget of SEK 622.5 billion (EUR 64.6 billion) (SEK 100 billion (EUR 10.4 billion) more than for the previous ten-year-period), split into 26 % allocated to road maintenance (mainly safety improvements and further enabling environmentally friendly solutions), and 20 % targeting rail network maintenance. The remaining 54 % is for new investments to match the growth in traffic volume.

The government aims to increasingly shift traffic from road to rail and maritime modes, thus decreasing the environmental impact of transport. Currently roughly 90% of all goods are transported by road domestically, and a transition to other modes requires significant investments. Investments in the railway system aim to increase capacity and remove bottlenecks to cross-border traffic, while in maritime transport the Transport Administration proposes to focus on upgrading capacity and improving access to ports and sluices. This is complemented by the aviation strategy of January 2017 addressing the role of aviation within the overall transport system.

The planned high-speed railway between the three major metropolitan regions could support labour market connectivity and open up opportunities for new residential development. This will involve striking a balance between cost efficiency and fiscal prudence on the one hand, and a timely and sufficiently large-scale roll-out of the high-speed rail on the other. In parallel to the Transport Administration's plans for high-speed rail, the body responsible for the national negotiation on housing and infrastructure (Sverigeförhandlingen) has received a government mandate to negotiate on the local and regional level to achieve co-financing and project ownership.

Sweden also puts emphasis on further improving the environmental performance of urban transport solutions. There has been a considerable increase in the number of electric cars and bicycles, and tax adjustments to further promote environmentally friendly vehicles will be implemented in 2018. As a result of negotiations under the national negotiation on housing and infrastructure, metropolitan areas are to benefit from public transport investment (e.g. metro and tram extensions) and further construction of bicycle paths.

ANNEX A: OVERVIEW TABLE

Commitments	Summary assessment ([43])
2017 Country specific recommendations (CSRs)	
CSR 1: Address risks related to household debt, in particular by gradually limiting the tax deductibility of mortgage interest payments or by increasing recurrent property taxes, while constraining lending at excessive debt-to-income levels. Foster investment in housing and improve the efficiency of the housing market, including by introducing more flexibility in setting rental prices and revising the design of the capital gains tax.	Sweden 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):
• Address risks related to household debt, in particular by gradually limiting the tax deductibility of mortgage interest payments or by increasing recurrent property taxes	• **No progress** in adjusting fiscal incentives, i.e. changing the mortgage interest deductibility rules or property taxation (see section 4.2.2).
• …while constraining lending at excessive debt-to-income levels.	• **Substantial progress** on constraining lending at excessive debt-to-income levels: a strengthened amortisation requirement for high-debt-to-income mortgages has been adopted and will come into force in March 2018 (see section 4.2.3).
• Foster investment in housing and improve the	• **Some progress** on fostering investment in

([43])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.

efficiency of the housing market, including by introducing more flexibility in setting rental prices and revising the design of the capital gains tax. .	housing and improving the efficiency of the housing market. Sweden is moving forward with the gradual implementation of the '22-point plan' to increase residential construction and improve the efficiency of the housing sector (see section 4.2.3). The authorities have also launched a new initiative to raise participation of foreign firms in the Swedish construction sector. However, no significant policy action has been taken to introduce more flexibility in setting rental prices or to revise the design of the capital gains tax.
Europe 2020 (national targets and progress)	
Employment rate target set in the 2014 NRP: well over 80 %.	Employment rate (%) in 2016: 81.2 % (2015, 80.4 %; 2014, 80.0 %; 2013, 79.8 %; 2012, 79.4 %) The EU-wide target was met already before the crisis in 2007-2008 (80.4 % in 2008), before a drop in the indicator due to the 2008-2009 crisis. Since then progress has picked up and Swedish labour market performance remains solid with a continuously improving trend, and a level now back to pre-crisis record highs. Sweden has had the highest employment rate in the European Union for several years in a row.
R&D target**:** 4 % of GDP	3.25% (2016) No progress towards the target. While public R&D intensity has grown by 1.3 % per year over the 2007-2016 period, business expenditure on R&D as a percentage of GDP decreased by 0.5 % per year over the same period, resulting in a stagnation in total R&D intensity. Sweden will reach its national target for 2020 only if the trend in business expenditure can be reversed.
National greenhouse gas (GHG) emissions target: -17 % in 2020 compared to 2005 (in non-ETS sectors)	Between 2005 and 2016, Sweden's GHG emissions in the non-ETS sectors fell by 22 %. They are projected to have decline by 32 % overall by 2020, thus exceeding the national target by 15 %.
2020 Renewable energy target: 49 % of final energy consumption	At about 54 %, Sweden has already exceeded its 2020 target.
Sweden's 2020 energy efficiency target is 43.4 Mtoe expressed in primary energy consumption and 30.3 Mtoe expressed in final	Sweden's primary energy consumption in 2016 was of 47.1 Mtoe, a significant increase compared to 2015. Final energy consumption in 2016

energy consumption	reached 32.7 Mtoe, also a slight increase compared to 2015. More efforts are needed to meet the indicative national 2020 target.
Early school leaving target: below 7 %	Early leavers from education and training (share of the population aged 18-24 with at most lower secondary education and not in further education or training) in 2016: 7.4 % (2015: 7 %, 2014, 6.7 %; 2013, 7.1 %; 2012, 7.5 %). The rate is somewhat above the 7 % target.
Tertiary education target: 45-50 %	Tertiary educational attainment (share of population 30-34 having successfully completed tertiary education) in 2016: 51 % (2015: 50.2 %, 2014, 49.9 %; 2013, 48.3 %; 2012, 47.9 %). The target of 45-50 % has been achieved.
Target on the reduction of population at risk of poverty or social exclusion in number of persons: Reducing to well under 14 % the number of people aged 20-64 who are not in the labour force (except full-time students), long-term unemployed or on long-term sick leave.	The corresponding indicator has reached 12.0 % in 2016, according to feedback from national authorities (2015, 12.4%; 2014, 12.6 %; 2013, 12.7%; 2012, 13.1%) The target has been reached and the trend remains good.

ANNEX B: MACROECONOMIC IMBALANCE PROCEDURE SCOREBOARD

Table B.1: **The MIP Scoreboard for Sweden (AMR 2018) (1) (2)**

			Thresholds	2011	2012	2013	2014	2015	2016
External imbalances and competitiveness	Current account balance, % of GDP	3 year average	-4%/6%	5.8	5.7	5.5	5.2	4.9	4.6
	Net international investment position	% of GDP	-35%	-8.0	-14.6	-12.5	1.2	4.6	11.2
	Real effective exchange rate - 42 trading partners, HICP deflator	3 year % change	±5% (EA) ±11% (Non-EA)	3.2	10.2	5.1	-3.7	-8.2	-9.2
	Export market share - % of world exports	5 year % change	-6%	-12.1	-19.1	-16.9	-9.2	-9.1	-7.9
	Nominal unit labour cost index (2010=100)	3 year % change	9% (EA) 12% (Non-EA)	5.6	4.0	8.6	6.9	2.4	2.0
Internal imbalances	House price index (2015=100), deflated	1 year % change	6%	0.8	0.7	4.7	8.3	12.1	7.6
	Private sector credit flow, consolidated	% of GDP	14%	6.9	2.4	4.5	4.8	7.5	7.6
	Private sector debt, consolidated	% of GDP	133%	190.8	192.3	194.5	193.9	188.4	188.5
	General government gross debt	% of GDP	60%	37.9	38.1	40.8	45.5	44.2	42.2
	Unemployment rate	3 year average	10%	8.2	8.1	7.9	8.0	7.8	7.4
	Total financial sector liabilities, non-consolidated	1 year % change	16.5%	3.0	5.4	9.0	13.0	2.4	9.0
Employment indicators	Activity rate - % of total population aged 15-64	3 year change in pp	-0.2 pp	0.6	1.4	2.0	1.6	1.4	1.0
	Long-term unemployment rate - % of active population aged 15-74	3 year change in pp	0.5 pp	0.7	0.4	-0.2	-0.1	0.0	-0.1
	Youth unemployment rate - % of active population aged 15-24	3 year change in pp	2 pp	2.6	-1.3	-1.2	0.1	-3.3	-4.7

(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.
(2) Figures highlighted are those falling outside the threshold established in the European Commission's Alert Mechanism Report.
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)	286.6	278.8	288.4	285.4	282.9	300.7
Share of assets of the five largest banks (% of total assets)	57.4	58.3	58.5	57.8	56.3	-
Foreign ownership of banking system (% of total assets)(2)	5.9	6.2	6.9	7.2	8.2	6.1
Financial soundness indicators:2)						
- non-performing loans (% of total loans)(3)	0.5	0.5	1.4	1.2	1.1	0.5
- capital adequacy ratio (%)	12.1	12.3	22.2	24.1	26.3	26.2
- return on equity (%)(4)	11.3	11.1	11.8	11.2	11.9	6.1
Bank loans to the private sector (year-on-year % change)(1)	3.6	3.0	5.1	4.4	7.3	6.1
Lending for house purchase (year-on-year % change)(1)	4.7	5.4	6.4	8.5	7.6	7.4
Loan to deposit ratio(1)	207.8	201.9	201.0	195.7	192.5	184.5
Central Bank liquidity as % of liabilities(5)	0.0	0.0	0.0	0.0	0.0	0.0
Private debt (% of GDP)	192.3	194.5	193.9	188.4	188.5	-
Gross external debt (% of GDP)(2) - public	18.0	18.7	21.9	20.3	16.8	14.7
- private	61.2	54.9	54.9	53.1	50.2	47.8
Long-term interest rate spread versus Bund (basis points)*	9.7	55.1	55.3	22.3	45.0	32.5
Credit default swap spreads for sovereign securities (5-year)*	36.2	14.3	9.9	9.5	14.2	10.9

(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
(5) Latest data April 2017.
* Measured in basis points.
Source: European Commission (long-term interest rates); World Bank (gross external debt); Eurostat (private 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)	7.5	7.1	6.7	7.0	7.4	:
Gender employment gap (pps)	5.1	5.0	4.6	4.2	3.8	4.0
Income inequality, measured as quintile share ratio (S80/S20)	4.0	4.0	4.2	4.1	4.3	:
At-risk-of-poverty or social exclusion rate[1] (AROPE)	17.7	18.3	18.2	18.6	18.3	:
Young people neither in employment nor in education and training (% of population aged 15-24)	7.8	7.5	7.2	6.7	6.5	:
Dynamic labour markets and fair working conditions†						
Employment rate (20-64 years)	79.4	79.8	80.0	80.5	81.2	81.8
Unemployment rate[2] (15-74 years)	8.0	8.0	7.9	7.4	6.9	6.7
Gross disposable income of households in real terms per capita[3] (Index 2008=100)	:	:	111.7	113.3	115.4	:
Public support / Social protection and inclusion						
Impact of social transfers (excluding pensions) on poverty reduction[4]	47.6	44.6	48.0	45.3	45.8	:
Children aged less than 3 years in formal childcare	52.0	55.0	56.8	64.0	51.0	:
Self-reported unmet need for medical care	1.4	1.9	1.5	1.3	1.6	:
Individuals who have basic or above basic overall digital skills (% of population aged 16-74)	:	:	:	72.0	69.0	77.0

† 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: Eurostat.

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

Labour market indicators	**2012**	**2013**	**2014**	**2015**	**2016**	**2017** [5]
Activity rate (15-64)	80.3	81.1	81.5	81.7	82.1	:
Employment in current job by duration						
From 0 to 11 months	17.5	17.2	17.8	18.3	18.9	:
From 12 to 23 months	10.6	9.9	10.0	10.0	10.7	:
From 24 to 59 months	15.4	16.5	17.6	17.3	17.1	:
60 months or over	55.9	55.7	53.9	53.6	52.6	:
Employment growth* (% change from previous year)	0.7	1.0	1.4	1.5	1.7	2.4
Employment rate of women (% of female population aged 20-64)	76.8	77.2	77.6	78.3	79.2	79.8
Employment rate of men (% of male population aged 20-64)	81.9	82.2	82.2	82.5	83.0	83.8
Employment rate of older workers* (% of population aged 55-64)	73.0	73.6	74.0	74.5	75.5	76.4
Part-time employment* (% of total employment, aged 15-64)	25.0	24.7	24.5	24.3	23.9	23.4
Fixed-term employment* (% of employees with a fixed term contract, aged 15-64)	15.9	16.3	16.8	16.6	16.1	16.1
Transition rate from temporary to permanent employment (3-year average)	41.2	40.8	40.0	38.4	:	:
Long-term unemployment rate[1] (% of labour force)	1.5	1.4	1.4	1.5	1.3	1.3
Youth unemployment rate (% active population aged 15-24)	23.7	23.6	22.9	20.4	18.9	17.8
Gender gap in part-time employment	26.1	24.9	24.4	23.1	22.6	21.4
Gender pay gap[2] (in undadjusted form)	15.5	14.6	13.8	14.0	:	:
Education and training indicators	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Adult participation in learning (% of people aged 25-64 participating in education and training)	27.0	28.4	29.2	29.4	29.6	:
Underachievement in education[3]	27.1	:	:	20.8	:	:
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	47.9	48.3	49.9	50.2	51.0	:
Variation in performance explained by students' socio-economic status[4]	10.6	:	:	12.2	:	:

* 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: Eurostat, OECD.

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

	2012	2013	2014	2015	2016	2017
Expenditure on social protection benefits* (% of GDP)						
Sickness/healthcare	7.3	7.5	7.5	7.5	:	:
Disability	3.6	3.6	3.5	3.3	:	:
Old age and survivors	12.5	12.9	12.5	12.3	:	:
Family/children	3.0	3.1	3.1	3.0	:	:
Unemployment	1.2	1.3	1.1	1.0	:	:
Housing	0.5	0.5	0.5	0.4	:	:
Social exclusion n.e.c.	0.7	0.7	0.8	0.9	:	:
Total	28.7	29.5	28.9	28.6	:	:
of which: means-tested benefits	0.8	0.8	0.8	0.7	:	:
General government expenditure by function (% of GDP, COFOG)						
Social protection	20.8	21.3	20.8	20.4	20.6	:
Health	6.9	7.0	7.0	6.9	6.9	:
Education	6.5	6.6	6.6	6.5	6.6	:
Out-of-pocket expenditure on healthcare (% of total health expenditure)	15.4	15.5	15.5	15.2	:	:
Children at risk of poverty or social exclusion (% of people aged 0-17)*	19.4	20.2	20.5	19.8	19.9	:
At-risk-of-poverty rate[1] (% of total population)	15.2	16.0	15.6	16.3	16.2	:
In-work at-risk-of-poverty rate (% of persons employed)	7.2	7.6	7.7	8.0	6.7	:
Severe material deprivation rate[2] (% of total population)	1.8	1.9	1.0	1.1	0.8	:
Severe housing deprivation rate[3], by tenure status						
Owner, with mortgage or loan	0.8	0.5	0.5	0.5	0.5	:
Tenant, rent at market price	3.7	4.1	5.0	6.8	6.7	:
Proportion of people living in low work intensity households[4] (% of people aged 0-59)	8.1	9.4	9.0	8.7	8.5	:
Poverty thresholds, expressed in national currency at constant prices*	116749	118780	119560	122901	124757	:
Healthy life years (at the age of 65)						
Females	:	13.8	16.7	16.8	:	:
Males	:	12.9	15.2	15.7	:	:
Aggregate replacement ratio for pensions[5] (at the age of 65)	0.6	0.6	0.6	0.6	0.6	:
Connectivity dimension of the Digital Economy and Society Inedex (DESI)[6]	:	:	67.7	69.8	72.2	75.5
GINI coefficient before taxes and transfers*	43.6	43.9	44.7	44.2	48.2	:
GINI coefficient after taxes and transfers*	24.8	24.9	25.4	25.2	27.6	:

* 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: Eurostat, 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	15.85	1.90	-0.48	0.69	1.38	-1.28	2.56
Labour productivity in Construction	2.43	-4.85	-8.23	-4.50	0.62	3.17	1.10
Labour productivity in Market Services	1.17	2.66	2.80	3.30	2.86	5.50	0.51
Unit labour costs (ULC) (whole economy, year-on-year % change)							
ULC in Industry	-17.32	1.62	5.66	1.45	1.79	2.08	-0.50
ULC in Construction	0.70	10.27	10.80	6.71	1.95	0.41	2.42
ULC in Market Services	-1.39	1.86	2.46	-0.31	-0.62	-2.07	1.69
Business Environment	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Time needed to enforce contracts[(1)] (days)	314.0	314.0	314.0	321.0	321.0	321.0	321.0
Time needed to start a business[(1)] (days)	16.0	16.0	16.0	16.0	16.0	7.0	7.0
Outcome of applications by SMEs for bank loans[(2)]	na	0.20	na	0.57	0.71	0.38	0.36
Research and innovation	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
R&D intensity	3.22	3.25	3.28	3.31	3.15	3.27	3.25
General government expenditure on education as % of GDP	6.50	6.40	6.50	6.60	6.60	6.50	6.60
Persons with tertiary education and/or employed in science and technology as % of total employment	49	50	51	52	54	55	56
Population having completed tertiary education[(3)]	28	29	30	31	33	34	35
Young people with upper secondary level education[(4)]	87	87	86	86	87	87	87
Trade balance of high technology products as % of GDP	0.14	0.11	-0.14	0.09	-0.07	-0.11	na
Product and service markets and competition					**2003**	**2008**	**2013**
OECD product market regulation (PMR)[(5)], overall					1.50	1.61	1.52
OECD PMR5, retail					0.72	0.60	0.60
OECD PMR5, professional services					0.77	0.55	0.55
OECD PMR5, network industries[(6)]					2.30	2.20	1.87

(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 / €	0.13	0.13	0.13	0.12	0.11	0.12
Carbon intensity	kg / €	0.16	0.15	0.15	0.14	0.13	-
Resource intensity (reciprocal of resource productivity)	kg / €	0.55	0.56	0.57	0.56	0.54	0.56
Waste intensity	kg / €	-	0.41	-	0.43	-	-
Energy balance of trade	% GDP	-1.8	-1.7	-1.5	-1.3	-0.8	-0.8
Weighting of energy in HICP	%	11.99	11.68	11.01	10.69	9.64	8.66
Difference between energy price change and inflation	%	0.7	-3.9	-0.4	-2.5	-4.1	1.4
Real unit of energy cost	% of value added	9.6	9.7	8.8	8.9	-	-
Ratio of environmental taxes to labour taxes	ratio	0.10	0.10	0.09	0.09	0.09	-
Environmental taxes	% GDP	2.4	2.4	2.4	2.2	2.2	2.2
Sectoral							
Industry energy intensity	kgoe / €	0.15	0.16	0.16	0.15	0.16	-
Real unit energy cost for manufacturing industry excl. refining	% of value added	13.8	13.0	12.3	12.3	-	-
Share of energy-intensive industries in the economy	% GDP	-	-	-	-	-	-
Electricity prices for medium-sized industrial users	€ / kWh	0.09	0.08	0.08	0.07	0.06	0.06
Gas prices for medium-sized industrial users	€ / kWh	0.05	0.05	0.06	0.05	0.04	0.04
Public R&D for energy	% GDP	0.04	0.04	0.03	0.04	0.03	0.04
Public R&D for environmental protection	% GDP	0.02	0.02	0.02	0.02	0.01	0.01
Municipal waste recycling rate	%	47.3	47.2	48.7	49.9	48.0	48.9
Share of GHG emissions covered by ETS*	%	35.7	34.7	36.3	35.9	32.9	36.8
Transport energy intensity	kgoe / €	0.44	0.42	0.42	0.43	0.42	0.44
Transport carbon intensity	kg / €	1.04	0.96	0.93	0.91	0.89	-
Security of energy supply							
Energy import dependency	%	36.7	29.2	31.5	32.0	29.9	31.9
Aggregated supplier concentration index	HHI	24.5	16.3	16.6	21.8	20.4	-
Diversification of energy mix	HHI	0.29	0.32	0.30	0.31	0.33	0.31

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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