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2017 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

This report assesses Denmark's economy in light of the European Commission's Annual Growth Survey published on 16 November 2016. In the survey the Commission calls on EU Member States to redouble their efforts on the three elements of the virtuous triangle of economic policy – boosting investment, pursuing structural reforms and ensuring responsible fiscal policies. In so doing, Member States should put the focus on enhancing social fairness in order to deliver more inclusive growth.

The recovery of the Danish economy following the crisis has been relatively slow compared with peer countries. Denmark reached its pre-crisis level of GDP in 2014 and the output gap is still negative, estimated at -1.6 % in 2016, according to the Commission winter 2017 forecast. However, looking at real GDP trends alone masks the relative strength of the Danish recovery. Employment growth has been particularly robust since 2012 underpinned by strong expansion of the services sector. Denmark has also benefitted from improving terms of trade and increasing returns on its foreign assets, boosting the wealth of the Danes. The modest recovery is expected to continue to be driven by domestic demand with a growing contribution from investment. Real GDP is expected to grow by 1.5 % in 2017 and by 1.8 % in 2018.

As a proportion of GDP, investment in Denmark remains below the EU average. Despite a recent pick-up, business investment is well below its pre-crisis peak in 2008, which can partly be attributed to the weakness of the sea freight business and North Sea oil and gas extraction. Investment is expected to pick up in the coming years. Business investments are forecast to gain pace as the maturing recovery leads to higher capacity utilisation. Robustly growing property prices are forecast to provide further impetus for housing investment in the coming years. Public investment, which was used actively to support the economy during the crisis and which reached a historically high level of 3.9 % of GDP in 2014, is expected to continue a gradual decline towards levels more in line with historical averages.

At 9.2 % of GDP in 2015, the current account surplus remains very high. The high surplus partly reflects adjustment to the crisis, as business and housing investments declined and corporate savings have increased. Household savings are also growing, in particular in the form of pension funds. Since investments are forecast to gradually pick up in the coming years, the current account surplus is expected to decline at a moderate pace.

Danish competitiveness indicators do not point to major challenges in terms of competitiveness. Both the real effective exchange rate and unit labour costs have developed in line with the main trading partners in recent years. This has been supported by domestic prices growing more slowly than in the main trading partners.

Labour market conditions have improved in recent years. The employment rate is estimated to have increased to 77.0 % in 2016, just above the historical 1993-2015 average of 76.9 %. The unemployment rate, which has remained relatively low during the crisis, has fallen steadily since 2011 and is expected to fall further, as economic growth picks up. The Danish authorities have adopted a series of labour market reforms in recent years that focus particularly on increasing work incentives and improving the efficiency of active labour market policies. These could contribute to achieving the Europe 2020 employment target and to the sustainability of the advanced Danish welfare model.

House prices have been rising steadily in real terms since they hit their lowest point in 2012. House price developments have been uneven both in geographical terms and across housing segments. The rise has been mainly driven by urban areas: prices in Copenhagen have climbed by 47 % since Q2 2012 compared to a national average of 19 %. This trend can be explained by strong fundamentals such as rising population, robustly rising disposable incomes and historically low mortgage interest rates but also by supply side inefficiencies in certain areas.

Overall, Denmark has made some progress in addressing the 2016 country-specific recommendations. Some progress was made on easing restrictions for retail establishment and on removing the remaining barriers posed by authorisation and certification schemes in the construction sector. Some progress has also been made on incentivising cooperation between businesses and universities.

Denmark has either reached or is making good progress towards its national Europe 2020 Strategy targets on employment, R&D, greenhouse gas emissions, renewable energy, early school leaving, tertiary education and energy efficiency. It may, however, face challenges in achieving its national target on reducing the number of people at risk of poverty or social exclusion.

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

- **Although house prices on national average have been growing in line with their main fundamentals, they have surged in the main urban areas.** The increase has not only been driven by strong fundamentals but also by supply side inefficiencies in particular in the main cities. In addition, the current property tax system is not equipped to reduce house price swings and helps exacerbate rising regional house price differences. A possible overvaluation of house prices in certain regions of Denmark could pose a risk of a disorderly and harmful correction in the medium term, with a potential impact on the banking sector and the real economy. Housing shortages in the main urban areas can hamper labour mobility.

- **Despite positive developments over the last years, the large household debt could imply a potential challenge to financial stability.** Although household debt as a proportion of GDP or disposable income remains one of the highest in the EU, it has been decreasing continuously over recent years, in particular between 2014 and 2016. A significant portion of the household debt is related to housing, and gross debt is compensated by housing assets and pension wealth. Nevertheless, pension funds are accessible only upon retirement and mostly through monthly instalments. The bulk of the pension funds' assets is held in equities and in bonds and is thus subject to fluctuations in value. Therefore, Danish households' balance sheet can be vulnerable to shocks affecting their debt servicing ability.

- **While employment rates are high and unemployment is low, certain groups remain on the margins of the labour market.** This particularly applies to migrants from outside the EU, workers above the age of 60, young people and people with reduced work capacity and disabilities. Recent reforms of active labour market policies have ensured more individualised support for the unemployed and vulnerable persons. The 2015 reform of the unemployment insurance system, followed by a number of policy initiatives in 2016, seeks to improve the incentives to work. These include capping the social assistance, introducing a work requirement for social benefit recipients and reducing social benefits for those who recently resided outside Denmark.

- **There is a shortage of labour for certain types of workers.** The growing lack of workers with a vocational education constitutes a challenge for some sectors, in particular for the construction sector. Recent reforms of active labour market policies and educational reforms seek to address this issue. In 2016, tripartite negotiations resulted in employers committing to create 8 000-10 000 additional apprenticeship places by 2025, with the overall aim of improving the quality and attractiveness of vocational education and thereby meeting the demanded skills composition of workers. Furthermore, in the area of digitally-skilled workforce, the share of ICT specialists has been steady in the last years. These skills are particularly relevant to foster the capacity of the Danish economy to further innovate and grow.

- **The government has introduced a series of policy measures with the overall purpose of improving refugees' integration into the labour market and reducing the number of asylum seekers.** Focus is on early intervention, individual skills assessment and job-oriented integration programmes. A cash bonus scheme applies for companies that hire refugees.

- **School education outcomes in Denmark are above the EU average.** According to the OECD PISA 2015, Danish students perform better than the OECD average in terms of reading, mathematics and science. Performance in mathematics in particular improved significantly compared to 2012, while performance in reading and science improved slightly. However, the situation of students

with a migrant background continues to be of concern. There is a large performance gap between non-immigrants and first-generation immigrants. Furthermore, second-generation do not appear to be catching up with natives without a migrant background.

- **While the Danish economy's productivity level is among the highest in the EU, productivity growth has been on a downward trajectory.** In 2014, the Productivity Commission pointed to a broad range of possible impediments to productivity growth, including, in particular, weak competition in the domestically oriented services sector, weaknesses in the Danish education system, weak productivity growth in the public sector and unexploited potential to foster the commercialisation of university research outputs due to certain regulatory barriers in the relation with businesses. Even though R&D spending relative to GDP is high in Denmark, it is not translated adequately to economic growth, productivity and investment. Investment needs in the transport infrastructure persist, stemming from projected faster growth of freight and passenger transports than of the overall economy and from a need to meet higher climate, security and performance requirements.

- **Danish start-ups are characterised by low start-up size, low start-up ratios and low net job creation**. Denmark has one of the smallest average company sizes at entry, and significantly lower than in many other Member States. Start-up ratios and net job creation in Denmark continue to be low. For instance, the net job creation by entrants that survive at least three years represents around 2.5 % of overall employment, lower than in other Member States. Scaling-up is a challenge, because new businesses do not have the capacity or the incentives to grow.

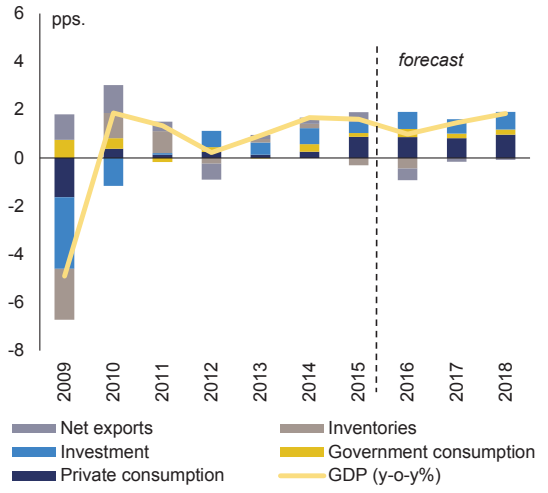
- **The government has taken measures to increase competition in the services sector that could increase productivity and investment.** Services account for more than 60 % of Danish exports in value added terms. Services' share of total inward investments is also high, indicating relatively low restrictiveness in services trade. However, Denmark can improve the efficiency of its economy by prioritising reforms that enhance competition in services markets, particularly by focusing on the remaining horizontal measures that affect all types of services as well as certain services sectors where specific restrictions remain. Construction and retail trade are in the process of being opened up to more competition. Similar developments in other services, including wholesale trade and taxi services, have the potential to boost productivity and generate more employment opportunities.

1. ECONOMIC SITUATION AND OUTLOOK

GDP growth

Economic growth slowed in 2016. According to the Commission's winter 2017 forecast, GDP is expected to have grown by 1.0 % in 2016, mainly driven by domestic demand, in particular by private consumption growth. The gradual recovery of the Danish economy is expected to continue in the near-term, with real GDP forecast to accelerate to 1.5 % in 2017 and to 1.8 % in 2018 (Graph 1.1). The economic recovery is expected to be kept driven by domestic demand with an increase in the contribution from investment.

Graph 1.1: **Contributions to GDP growth in Denmark**



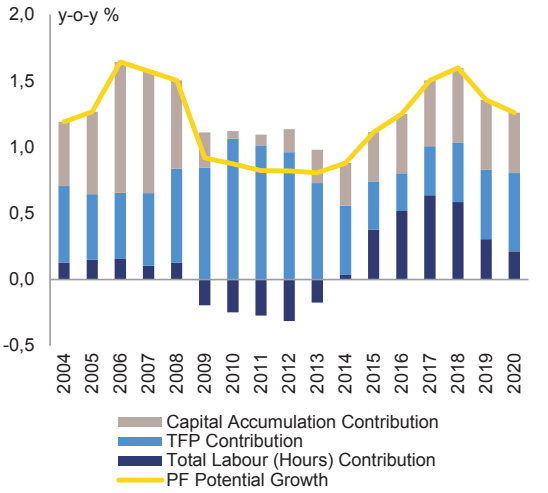
Source: European Commission

GDP growth has been relatively modest following the crisis. The output gap is still negative, estimated at –1.6 % in 2016 in the Commission winter 2017 forecast. However, subdued real GDP trends somewhat mask the relative strength of the Danish recovery according to alternative indicators. Employment growth, underpinned by the strong expansion of the services sector, has been particularly robust since 2012. Denmark has also benefited from improving terms of trade and increasing returns on its foreign assets, increasing the wealth of the Danes. Taking into account net factor incomes from abroad, per capita GNI developed much more favourably than per capita GDP over the past decade. This trend is expected to continue in the short term.

Potential growth

Potential GDP growth has picked up gradually since 2013. In 2016, potential GDP growth is estimated to have been around 1.2 % (Graph 1.2) and is forecast to remain at this level for the next couple of years. The pick-up in potential growth since 2013 has been primarily due to an increase in total working hours. The contribution of capital accumulation, which was a key driver of the pre-crisis growth, is forecast to remain stable, but significantly below the pre-crisis levels. The contribution of total factor productivity, which reflects how efficiently labour and capital inputs are combined, is expected to improve slightly.

Graph 1.2: **Contributions to potential growth - Denmark**



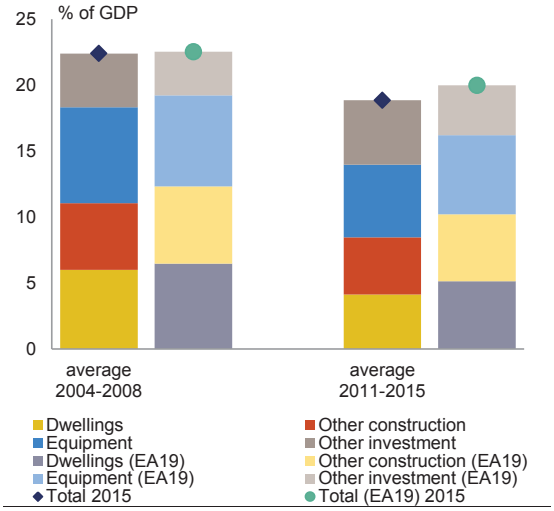
Source: European Commission

Domestic demand

Private consumption has been an important driver of GDP growth. It has been underpinned by rising disposable incomes, strong growth in employment and wages as well as low inflation. The net asset position of households has also improved, partly due to the increase in house prices since mid-2012. Consumer confidence remains at levels consistent with continued growth in private consumption, yet has been declining since the spring of 2015 and may therefore represent a downside risk for private consumption. The household savings rate is estimated to stand at around 11 % of disposable income in 2016, which is high compared to the historical average of 7 % of disposable income over the past 15 years.

Investment activity has been subdued. Investment as a share of GDP was broadly at the EU average levels until 2008, but it took a severe hit in the crisis when it fell across all categories. Total investment (gross fixed capital formation) has been slowly increasing for the last 5 years, but at 19.2 % of GDP in 2015 its level remains still relatively low, and slightly lower than the euro area average of 19.7 % of GDP (see Graph 1.3).

Graph 1.3: **Gross fixed capital formation Denmark vs EU19**

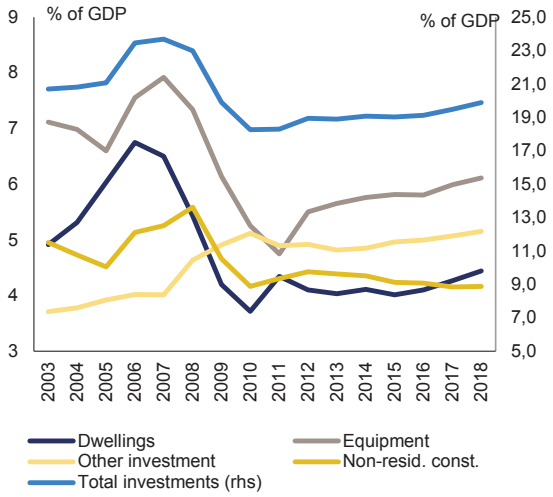


Source: Eurostat

The investment components show diverging trends since the crisis. While machinery and equipment investment accelerated somewhat since 2012, they are still approximately 12 % below their pre-crisis peak in 2007, and also below the EU average. Sluggish business investments can partly be attributed to the weakness of the sea freight business and North Sea oil and gas extraction. Construction investment has been growing in line with GDP since 2011 although they are approximately 20 % below their peak in 2007. Considering the overinvestments in particular in dwellings in the pre-crisis period, construction investments appear to have stabilised at more sustainable levels now. Other investment (which also includes R&D investments) is the only investment component that has been relatively stable compared to its share of GDP hovering around 5 % of GDP since 2010.

Investment is expected to pick up in the coming years. Business investments are forecast to gain pace as the maturing recovery leads to higher capacity utilisation. Robustly growing house prices (see Section 3.2) are forecast to provide further impetus for dwellings investment in the coming years (Graph 1.4). Public investment, which actively supported the economy during the crisis and which reached a historically high level of 3.9 % of GDP in 2014, is expected to continue declining gradually as a share of GDP towards levels more in line with historical averages. The new government, which took office in end November 2016, has established a new Minister for Public Sector Innovation.

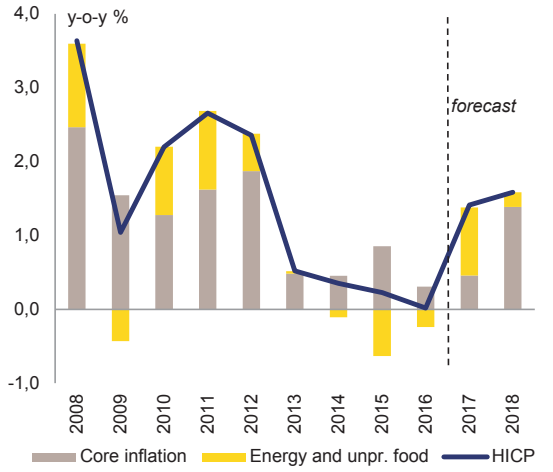
Graph 1.4: **Investment components - Denmark**



Source: Eurostat

Consumer price inflation remains low, but is expected to pick up. The harmonised index of consumer prices (HICP) was flat in 2016. Inflation has been dragged down by a fall in prices of non-energy industrial goods and of energy. Core inflation, which excludes energy and unprocessed foods, grew by a mere 0.3 % in 2016. HICP inflation is expected to pick up as the effect from the decline in energy prices tapers off and capacity utilisation increases. Consumer prices are forecast to increase by 1.4 % in 2017 and 1.6 % in 2018 (Graph 1.5).

Graph 1.5: **Consumer price inflation**



Source: European Commission

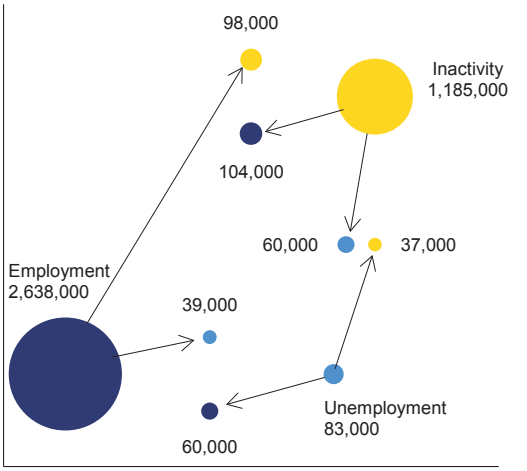
Labour market

Employment trends have remained strong despite weak GDP growth. Employment growth has gathered steam, growing every quarter since the beginning of 2013, expanding at an estimated rate of 1.5 % in 2016. This strong performance, which has been driven by private sector employment — in particular the services sector — contrasts with the moderate recovery of GDP. However, this is due to the weak performance of sectors with high capital intensity, such as the oil and gas extraction sector and the shipping sector, whereas more labour-intensive sectors have performed better.

The employment rate is increasing. The employment rate increased to 76.5 % in 2015, close to the historical (1993-2015) average of 76.9 %. The employment rate reached a low in early 2014, and has shown a clear upward trend since then. In the short term, employment is forecast to continue growing due to the ongoing recovery of the economy and increased labour supply due to a series of reforms implemented in recent years.

The fall in the unemployment rate has stalled. The unemployment rate, which has been on a downward trend since early 2012, has flattened out at close to 6 % since 2015. However, the unemployment rate is higher than before the crisis, at a level that corresponds to about 180 000 unemployed people. This is to be seen in the light of an increase in the activity rate, as new groups of people who have previously been inactive enter the labour market (Graph 1.6). The activity rate increased from 78.5 % in 2015 to 80.2 % in the third quarter of 2016. Despite the increasing activity rate, the increasing surplus of unskilled labour and the lack of workers with a vocational education constitute an important challenge for Denmark. According to the Economic Council of the Labour Movement think-tank, there will be an estimated shortage of 70 000 vocational workers alongside a surplus of 65 000 unskilled workers in 2025 (Arbejderbevægelsens Erhvervsråd, 2016a). Furthermore, lower employment rates can be observed for those on the margins of the labour market, and better inclusion of vulnerable groups such as migrants, young people and people with reduced work capacity and disabilities remains a key challenge (see Section 3.3 and also Aasen et al. 2016).

Graph 1.6: **Flows in the Danish labour market**



(1) The graph shows average quarterly flows between employment, inactivity and unemployment in the period Q2-2015 to Q2-2016. For example, each quarter on average 60 000 persons went from unemployment to employment.
Source: Eurostat

Long-term unemployment remains low. At 1.7 % of the active population in 2015, long-term unemployment (unemployed for more than 12 months) remained low, although it was higher than the 1999-2015 average of 1.2 %. The level of long-term unemployment was one of the lowest in the EU in 2015 after Sweden and the UK (see also Bjørsted et al 2016). Keeping long-term

unemployment low is important in order to reduce the negative effects on human capital during spells of unemployment. The share of youth unemployment also remains low (11.1 % in the first half of 2016), as well as the share of young people (15-24 years) not in employment, education or training (NEETs), which, though increasing, remains clearly below the European average (6.2 % as compared with the EU average of 12.0 % in 2015).

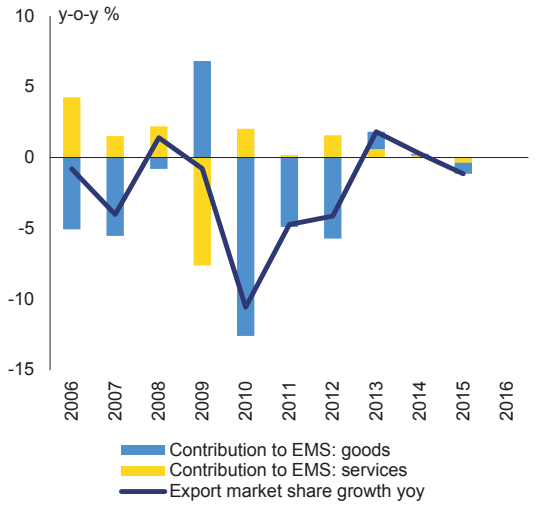
Social developments

Income inequality has increased slightly but remains low compared to the EU average. Measured by the S80/S20 ratio there has been a modest increase in income inequality in Denmark in the 2008-2015 period (from 3.6 to 4.1). These developments are also reflected in the Gini coefficient of equivalised disposable income, which increased from 25.1 to 27.4 in the same period. The worsening has been driven by income growth in the upper end of the distribution, which however remains comparatively equal by EU standards. While market income inequality is typically high in Denmark, the tax and benefit system has been effective in counteracting this, as shown by a large gap between inequality before and after taxes and transfers([1]).

External position and competitiveness

Export growth has picked up in the first half of 2016, after a weak performance in 2015. Nevertheless, Denmark has suffered a substantial loss of export market shares over the past decade. This loss has been concentrated in goods markets and has not been compensated by the limited market share gains in services exports (Graph 1.7). Total exports are expected to continue growing in 2017 and 2018, broadly in line with world trade, thus limited market share losses are forecast to persist for the coming years.

Graph 1.7: **Export market share breakdown - Denmark**



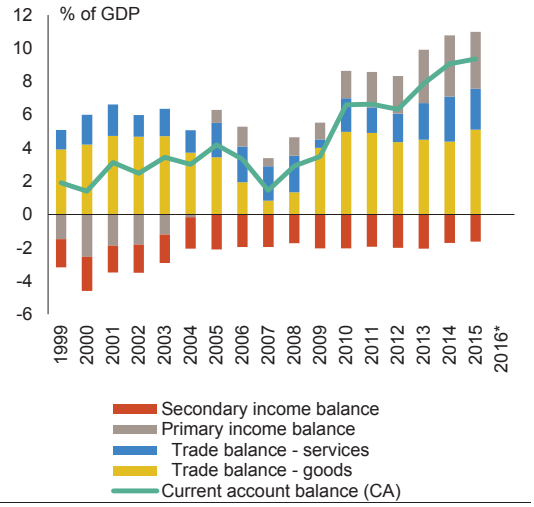
Source: Eurostat

The current account surplus remains high. The current account balance stood at 9.2 % of GDP in 2015, slightly higher than in 2014([2]).The high surplus reflects weak domestic demand, in particular relatively weak investments, high savings in the corporate sector and higher yields on investments abroad than those in Denmark. The trade surplus in goods has been relatively stable, while the contribution of services and net incomes to the current account balance has been increasing over recent years (Graph 1.8). Since 2004 the yields on assets held abroad have been higher than on liabilities held by foreigners in Denmark, resulting in a growing contribution of net income to the current account balance (see also Leszczuk and Pojar, 2016).

([1]) While the Gini index on 'disposable income before tax and transfers' represents inequality levels before the transfers in cash and the payment of taxes, the Gini index on 'disposable income after tax and transfers' also takes into account the redistributive impact of taxes and cash transfers (including social security cash transfers). The difference between the two Gini indexes can be used as a measure of the redistributive impacts of taxes and transfers.

([2]) The current account surplus was revised upwards in November 2016 from 6.7 % of GDP to 9.2 % of GDP for the year 2015. The revision was partly due to an improvement in the reporting on foreign trade conducted by Danish companies operating abroad, but also larger than expected primary income.

Graph 1.8: **Breakdown of the current account - Denmark**

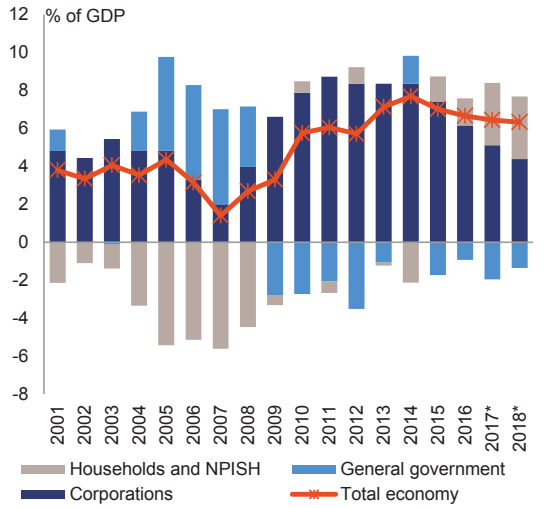


Source: European Commission

The current account surplus in Denmark is mostly due to high corporate savings and continued household deleveraging. Following the crisis, the current account balance was boosted by increasing corporate savings due to the weakness of domestic demand (such as investments). The surplus thus partly reflects the adjustment to the crisis, which is reflected in a substantial negative output gap. In cyclically adjusted terms ([3]), the current account surplus was close to 5 % of GDP in 2016. As business investments are gradually picking up in the coming years, the corporate sector is forecast to reduce its saving rate. Increased household savings are projected to some extent to compensate for falling corporate savings. Households switched from net borrowers to net lenders in 2015, and they are forecast to become an important driver of the increase in the current account surplus. This is due at large to an increase in households' savings and only to a smaller extent to a drop in their investment. Growing savings for instance in the form of pension savings outweigh the growth of household investments.

As a result, the current account surplus is expected to fall gradually from the current high levels (Graph 1.9). As the economic cycle slowly normalises and the output gap closes, the current account surplus is expected to decline to around 7 % over the coming years. Boosting investments and increasing productivity could help Denmark further strengthen its economic growth, which would result in a gradual correction of the high current account surplus.

Graph 1.9: **Net Lending/Borrowing by Sector - Denmark**



(1) NPISH denotes non-profit institutions serving households
Source: European Commission

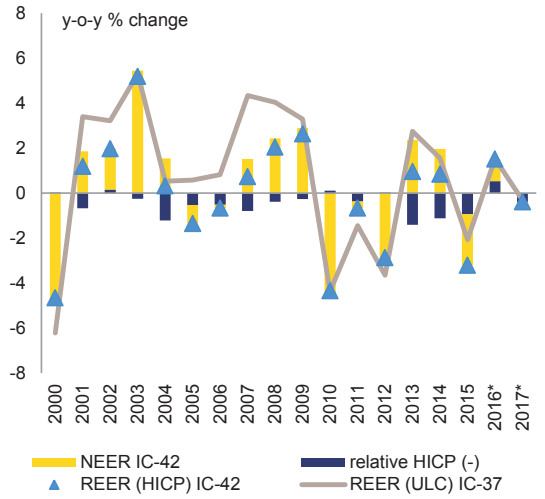
Accumulated current account surpluses have led to a high net international investment position (NIIP) that reached 42 % of GDP in 2015. However, the NIIP has not increased since 2013, as valuation losses, mainly linked to financial derivatives and the increasing price of Danish equity liabilities, offset the positive impact of the current account surplus. The current account surplus necessary for a stable NIIP over the next 10 years is a mere 1.2 % of GDP in the case of Denmark. Therefore, the NIIP is expected to increase in the next few years, although not on a par with the current account surpluses. The high net stock of foreign assets is expected to continue to generate significant financial revenues in the coming years, sustaining the high current surplus.

Denmark's external price competitiveness remains strong. Both the real effective exchange rate (REER) and the unit labour cost (ULC) indicators have been developing broadly in line with those for the main trading partners over the past few years. Domestic prices grew more slowly

([3]) This is the current account balance that would prevail if both the domestic and the trade partner economies would have closed their output gaps. This figure may be the most appropriate to filter out the impact of the business cycle from the current account balance.

than in the country's main trading partners (Graph 1.10).

Graph 1.10: **Breakdown of the real effective exchange rate for Denmark**



(1) NEER: Nominal Effective Exchange Rate; REER: Real Effective Exchange Rate
Source: European Commission

Monetary policy

The fixed exchange rate policy is a cornerstone of Danish economic policy. Denmark has pursued a fixed exchange rate regime since 1982, first vis-à-vis the Deutsche Mark and since 1999 vis-à-vis the euro. The fixed exchange rate policy has proven successful even in periods of turbulence and enjoys broad political backing.

Financial sector, housing market and private indebtedness

Indicators suggest that the Danish banking sector is stable. Banks are well capitalised and bank profitability has improved. Although the non-performing loans ratio is low and declining, the quality of bank assets in Denmark is outperformed by its Nordic peers, as some Danish banks are still suffering from legacies of the economic crisis.

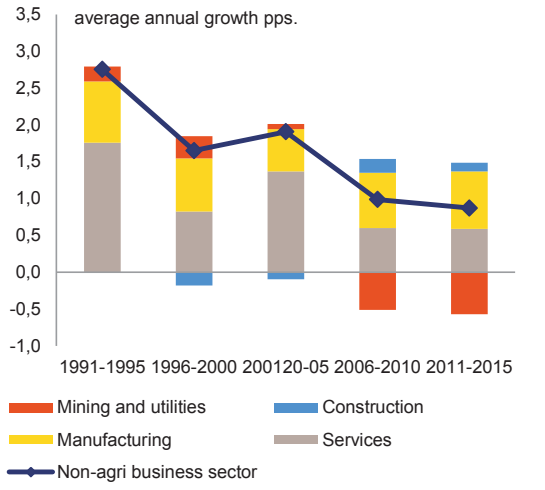
House price growth has continued. House prices have continued to rise in 2016, but at a somewhat slower pace than in 2015. House prices are supported by low interest rates and growing incomes, while in the large cities — where price growth has been higher than the national average —– high population growth has increased demand for housing. House prices have been growing throughout the country, mainly in line with their fundamentals, and a wide range of policy measures in the aftermath of the crisis has so far been successful in containing upward pressure on house prices (see also Section 3.2). However, house prices have been surging in the main urban areas and house prices are already above their pre-crisis levels in Copenhagen, where the increase has been driven by supply side inefficiencies as well.

Danish households have continued deleveraging. Households in Denmark have been in a state of passive deleveraging following the bursting of the housing bubble in 2007. The overall loan growth rate has shown a moderate rise, while mortgage lending as a share of GDP and disposable income has been falling. Households' debt-to-GDP ratio has fallen from its peak of 143 % in 2009 to 120.7 % in 2016.

Productivity challenges

Danish productivity developments have been more positive than previously thought. On 15 November 2016, Statistics Denmark published a significant revision of historical national accounts numbers. The revision was particularly large for the years 2013-2015. The recovery of the Danish economy following the crisis now appears stronger and productivity development has been significantly more positive than previously anticipated. However, productivity growth has flattened out over the last 15 years, at around 1 % per year. Slow productivity growth in the services sector, which has increased its share in gross value added, is one important factor behind the slow productivity growth in Denmark. Lack of competition in the domestic services sector, which is less exposed to foreign competition, has been identified as an important contributing factor in this regard. In particular, the construction, taxi and retail sectors have been identified as having significant barriers to competition (see also Section 3.4.3).

Graph 1.11: **Average annual productivity growth**



Source: Statistics Denmark

Main macroeconomic risks

Risks to the macroeconomic outlook appear broadly balanced. Downside risks relate to uncertainty as regards the external environment. Conversely, there are upside risks to domestic demand if households and companies reduce their currently high rates of saving and increase their consumption and investments.

Rising house prices could make the economy vulnerable to shocks. A possible overvaluation of house prices in certain regions could entail risks of a disorderly and harmful correction in the medium term, with a potential impact on the banking sector and the real economy. Housing shortage in the main urban areas can hamper labour mobility.

The high level of household indebtedness makes the economy more sensitive to shocks. Although households' high gross debt is matched by even higher assets, most of those assets are relatively illiquid, such as housing and pension savings. Assets are also prone to valuation effects, and drops in house prices can affect their debt service ability with broader economic consequences depending on distributional aspects and size of wealth effects. Nevertheless, studies from the central bank and from Danish authorities indicate that Danish households are resistant to the type of tail risk events as described above, due to a concentration of debt within the group of households with the highest income. The Danish authorities have also taken a number of measures to make the mortgage system more robust and to strengthen the stability, supervision and regulation of the financial system (see also Section 3.2).

Public finances

Revenue volatility masks the underlying improvement in public finances. The general government balance is expected to improve from a deficit of 1.3 % of GDP in 2015 to a deficit of 0.9 % of GDP in 2018. The profile of the headline balance is, however, partly affected by volatile revenue items. According to the Commission winter 2017 forecast, the fiscal balance is expected to deteriorate to a deficit of 1.6 % of GDP in 2016-17, before improving to 0.9 % of GDP in 2018. The deterioration from 2015 to 2016 should be seen in light of extraordinary revenues from the restructuring of capital pensions in 2013-2015. Another important factor is the volatility of revenues from the pension yield tax. The revenues from this tax are expected to decrease by around 0.8 % of GDP from 2016 to 2017.

The structural balance is affected by the same volatility. The structural balance is expected to improve from a deficit of around 2 % of GDP in 2015 to a deficit of around ½ % of GDP in 2016, and 2017. In 2018, the structural balance is expected to reach balance. The profile of the structural balance is also affected by the volatility of pension yield tax revenues and of other volatile revenue items such as revenues from North Sea oil and gas extraction. While Danish authorities filter this volatility out of their estimates for the structural balance, this is not allowed under the commonly agreed methodology applied by the Commission.

Public debt is low and remains on a downward path. The general government gross debt level is expected to gradually decline from 39.6 % of GDP in 2015 to 36.9 % of GDP in 2018. This is well below the threshold of the Stability and Growth Pact (60 % of GDP), and significantly lower than the EU average of 85 % of GDP in 2015. Risks related to Denmark's fiscal sustainability appear to be low in the medium and long term due to low and gradually falling public debt and falling public spending forecasts related to pensions (see also Section 3.1).

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

	2004-2008	2009	2010	2011	2012	2013	2014	2015	forecast 2016	2017	2018
Real GDP (y-o-y)	1.9	-4.9	1.9	1.3	0.2	0.9	1.7	1.6	1.0	1.5	1.8
Private consumption (y-o-y)	2.7	-3.4	0.8	0.3	0.5	0.3	0.5	1.9	1.8	1.7	2.0
Public consumption (y-o-y)	1.9	3.0	1.6	-0.6	0.8	-0.1	1.2	0.6	1.3	0.7	0.8
Gross fixed capital formation (y-o-y)	4.3	-13.0	-5.7	0.4	3.7	2.7	3.5	2.5	3.7	3.0	3.6
Exports of goods and services (y-o-y)	5.7	-9.2	2.9	7.2	1.2	1.6	3.6	1.8	0.2	2.7	3.3
Imports of goods and services (y-o-y)	8.6	-11.9	0.5	7.4	2.7	1.5	3.6	1.3	1.3	3.4	3.9
Output gap	3.3	-3.6	-2.6	-2.1	-2.7	-2.6	-1.8	-1.3	-1.6	-1.6	-1.4
Potential growth (y-o-y)	1.4	0.9	0.9	0.8	0.8	0.8	0.9	1.1	1.2	1.5	1.6
Contribution to GDP growth:											
Domestic demand (y-o-y)	2.7	-3.8	-0.3	0.0	1.1	0.6	1.2	1.5	1.9	1.6	1.9
Inventories (y-o-y)	0.1	-2.1	1.0	0.9	-0.2	0.1	0.2	-0.3	-0.4	0.0	0.0
Net exports (y-o-y)	-0.9	1.1	1.2	0.4	-0.7	0.2	0.3	0.4	-0.5	-0.2	-0.1
Contribution to potential GDP growth:											
Total Labour (hours) (y-o-y)	0.1	-0.2	-0.2	-0.3	-0.3	-0.2	0.0	0.4	0.5	0.6	0.6
Capital accumulation (y-o-y)	0.7	0.3	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
Total factor productivity (y-o-y)	0.6	0.8	1.1	1.0	1.0	0.7	0.5	0.4	0.3	0.4	0.5
Current account balance (% of GDP), balance of payments	3.0	3.5	6.6	6.6	6.3	7.8	8.9	9.2	.	.	.
Trade balance (% of GDP), balance of payments	4.0	4.5	6.9	6.4	6.0	6.6	7.0	7.4	.	.	.
Terms of trade of goods and services (y-o-y)	0.7	0.3	2.4	-1.9	0.5	1.0	0.8	0.2	-0.3	0.1	0.3
Capital account balance (% of GDP)	0.0	0.0	0.0	0.3	0.0	0.0	-0.2	-0.4	.	.	.
Net international investment position (% of GDP)	-1.8	0.9	12.8	27.8	36.1	37.2	44.1	34.0	.	.	.
Net marketable external debt (% of GDP) (1)	-29.7	-32.4	-27.8	-23.4	-16.7	-14.5	-4.3	-4.0	.	.	.
Gross marketable external debt (% of GDP) (1)	142.4	165.4	169.9	162.2	159.1	156.0	150.5	141.8	.	.	.
Export performance vs. advanced countries (% change over 5 years)	6.7*	3.6*	-3.3	-5.9	-7.9	-9.9	-9.4	-6.82	.	.	.
Export market share, goods and services (y-o-y)	0.3	-1.6	-9.8	-4.2	-4.8	2.2	0.1	-2.3	.	.	.
Net FDI flows (% of GDP)	2.5	0.9	3.5	-0.1	1.6	1.8	1.0	1.8	.	.	.
Savings rate of households (net saving as percentage of net disposable income)	-2.9	0.7	1.8	0.8	0.1	2.3	-1.8	4.4	.	.	.
Private credit flow, consolidated (% of GDP)	17.7	-1.8	-3.0	4.5	7.9	-2.7	0.2	-1.2	.	.	.
Private sector debt, consolidated (% of GDP)	198.3	232.2	220.7	221.0	224.0	216.3	215.6	210.1	.	.	.
of which household debt, consolidated (% of GDP)	119.1	141.6	137.6	137.8	135.7	132.8	131.4	128.3	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	78.2	89.7	82.3	82.6	87.7	83.0	83.8	81.4	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	3.8	6.6	7.9	8.7	8.4	8.4	8.4	7.4	6.2	5.1	4.4
Corporations, gross operating surplus (% of GDP)	22.6	20.0	22.2	22.2	22.9	22.7	22.4	21.9	20.8	21.0	21.0
Households, net lending (+) or net borrowing (-) (% of GDP)	-4.8	-0.5	0.6	-0.6	0.9	-0.2	-2.1	1.3	1.4	3.3	3.3
Deflated house price index (y-o-y)	7.6	-13.1	0.3	-4.0	-4.9	3.1	3.0	6.3	.	.	.
Residential investment (% of GDP)	6.0	4.2	3.7	4.3	4.1	3.7	3.9	4.0	.	.	.
GDP deflator (y-o-y)	2.7	0.5	3.2	0.6	2.4	0.9	0.8	0.9	0.0	1.4	1.8
Harmonised index of consumer prices (HICP, y-o-y)	2.0	1.0	2.2	2.7	2.4	0.5	0.4	0.2	0.0	1.4	1.6
Nominal compensation per employee (y-o-y)	3.5	2.8	3.2	1.4	1.8	1.6	1.5	1.5	1.9	2.2	2.7
Labour productivity (real, person employed, y-o-y)	0.5	-1.8	4.3	1.4	1.0	1.0	0.7	0.3	.	.	.
Unit labour costs (ULC, whole economy, y-o-y)	3.0	4.7	-1.0	0.0	0.9	0.6	0.8	1.1	2.4	1.8	1.7
Real unit labour costs (y-o-y)	0.3	4.1	-4.1	-0.6	-1.5	-0.3	0.1	0.2	2.4	0.4	-0.1
Real effective exchange rate (ULC, y-o-y)	1.9	2.9	-4.5	-1.8	-3.9	1.9	1.0	-2.5	2.5	0.6	-0.1
Real effective exchange rate (HICP, y-o-y)	0.2	2.6	-4.4	-0.7	-2.9	1.0	0.8	-3.2	1.1	-1.4	.
Tax rate for a single person earning the average wage (%)	41.0	39.5	38.3	38.4	38.6	35.8	35.6	35.9	.	.	.
Tax rate for a single person earning 50% of the average wage (%)	37.5*	36.6	35.3	35.4	35.7	31.0	30.8	31.1	.	.	.
Total Financial sector liabilities, non-consolidated (y-o-y)	10.2	6.7	10.4	-0.3	0.9	2.3	9.1	0.5	.	.	.
Tier 1 ratio (%) (2)	.	14.4	15.1	15.5	17.3	17.7	16.4	18.0	.	.	.
Return on equity (%) (3)	.	-3.7	1.8	-0.1	1.8	3.8	3.6	6.5	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (4)	.	2.8	3.1	3.0	3.9	3.9	5.1	4.0	.	.	.
Unemployment rate	4.3	6.0	7.5	7.6	7.5	7.0	6.6	6.2	6.2	5.9	5.7
Long-term unemployment rate (% of active population)	0.8	0.6	1.5	1.8	2.1	1.8	1.7	1.7	.	.	.
Youth unemployment rate (% of active population in the same age group)	8.0	11.8	13.9	14.2	14.1	13.0	12.6	10.8	12.0	.	.
Activity rate (15-64 year-olds)	80.3	80.2	79.4	79.3	78.6	78.1	78.1	78.5	.	.	.
People at risk of poverty or social exclusion (% total population)	16.7	17.6	18.3	17.6	17.5	18.3	17.9	17.7	.	.	.
Persons living in households with very low work intensity (% of total population aged below 60)	9.5	8.8	10.6	10.5	10.2	11.9	12.2	11.6	.	.	.
General government balance (% of GDP)	4.0	-2.8	-2.7	-2.1	-3.5	-1.0	1.4	-1.3	-1.6	-1.6	-0.9
Tax-to-GDP ratio (%)	47.8	46.3	46.3	46.3	46.9	47.5	50.3	47.6	47.0	46.1	45.9
Structural budget balance (% of GDP)	.	.	-1.1	-0.7	-0.3	-0.9	-0.6	-1.9	-0.6	-0.6	0.0
General government gross debt (% of GDP)	34.8	40.2	42.6	46.1	44.9	44.0	44.0	39.6	38.3	37.8	36.9

(1) Sum of portfolio debt instruments, other investment and reserve assets
(2,3) domestic banking groups and stand-alone banks.
(4) domestic banking groups and stand-alone banks, foreign (EU and non-EU) controlled subsidiaries and foreign (EU and non-EU) controlled branches.
(*) Indicates BPM5 and/or ESA95

Source: European Commission, European Central Bank

2. PROGRESS WITH COUNTRY-SPECIFIC RECOMMENDATIONS

Progress with the implementation of the recommendations addressed to Denmark in 2016([4]) has to be seen in a longer term perspective since the introduction of the European Semester in 2011. As regards CSR 1, Denmark delivered a timely and durable correction of its excessive deficit between 2010 and 2013. The general government deficit, which according to the notification from the Danish authorities in April 2010 was planned at 5.4 % of GDP in 2010, never actually exceeded the 3 % of GDP Treaty reference value in the years in the Excessive Deficit Procedure, with the exception of 2012, when the headline balance was affected negatively by a one-off measure related to a pension reform. In the period, the headline balance improved from -2.7 % of GDP in 2010 to -1.1 % of GDP in 2013 and the deficit has been below 3 % of GDP since then. The fiscal framework was strengthened with the transposition of the requirements of the Fiscal Compact into national law, as well as with the introduction of legally binding multi-annual expenditure ceilings on all three levels of governance, which took effect in 2014.

Increasing productivity growth, business investment and competition in the domestically-oriented services sector have been prominent on the Danish government's agenda. Several continuous, but limited, steps have been taken in the right direction since 2011. A 'Productivity Commission' was established in 2012 to propose recommendations that could enhance productivity in the Danish private and public sectors. Several of the recommendations published in 2014 have been implemented since then. Such measures include the further opening up of municipal and regional procurement of services to competition, or simplifications of the Public Procurement Act. However, the recommendations of the Productivity Commission on the regulation of businesses such as taxis, or the provision of train services, have so far not been followed up. As regards construction, there are ongoing modifications in the Building Regulation with the objective to ease and simplify the building permit procedure for construction, or ongoing analysis of the construction sector with a view to adapting Danish regulation to international standards, thereby enabling increased foreign competition in the sector. Proposed changes in the Danish Planning Act aim to ease the restrictions on retail establishments by allowing the construction of larger shops and granting local municipalities more flexibility in the planning process for the retail sector.

Long-term labour supply and the improvement of the employability of those at the margins of the labour market was a topic in the CSRs to Denmark in 2011-2014. Denmark implemented a number of labour market, pension and social reforms in this period. Measures were also taken to improve the quality of the education system and to reduce the drop-out rates within vocational education. Denmark made sufficient progress for the recommendations in these areas to be dropped in 2015.

The 2011-2012 recommendation to strengthen the stability of the housing market and the financial market in the medium term was dropped following a number of initiatives from the Danish authorities. These initiatives included more restrictive use of variable rate loans and loans with deferred amortisation, a scheme for improved loan risk signalling, and intensified monitoring of system risks. Detailed studies from the National Bank and the Ministry of Business and Growth of the structure of household debt, based on actual microdata, pointed to relatively high resilience among Danish households in the event of interest rate increases.

Overall, Denmark has made some progress([5]) in addressing the 2016 country-specific recommendations. As regards CSR 2, the government tabled reforms for the retail sectors which, however, have not yet been adopted, hence limited progress in this area. The mapping of standards in 2015, the modernisation of the law on electrical installations in 2015, and the proposed amendments to the Building Regulation in order to simplify procedures have resulted in some progress towards increasing competition in the construction sector. Policy initiatives to encourage cooperation between businesses and universities by specific

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

([5]) 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. This overall assessment does not include an assessment of compliance with the Stability and Growth Pact.

Table 2.1: **Summary table of the 2016 CSR assessment**

Denmark	**Overall assessment of progress with 2016 CSRs: Some**
CSR 1: *Respect the medium-term budgetary objective in 2016 and achieve an annual fiscal adjustment of 0.25% of GDP towards the medium-term budgetary objective in 2017.*	CSRs related to compliance with the Stability and Growth Pact will be assessed in spring once the final data is available.
CSR 2: *Enhance productivity and private sector investment by increasing competition in the domestic services sector, in particular retail and construction and to incentivise the cooperation between businesses and universities.*	**Some progress** Some progress in increasing competition in the construction sector and limited progress on increasing competition in the retail sector.
	Some progress in incentivising the cooperation between businesses and universities.

Source: European Commission

programmes and the setting up of a new Innovation Fund also constitute some progress.

Box 2.1: **Contribution of the EU budget to structural change in Denmark**

The total allocation of the European Structural and Investment Funds (ESI funds) in Denmark amounts to EUR 1.5 billion for 2014-2020. This is equivalent to around 0.1% of GDP annually (over 2014-2017) and 2% of national public investment[1]. By 31 December 2016, an estimated EUR 528 million, which represents about 34 % of the total allocation for ESI Funds, have already been allocated to concrete projects.

Financing under the European Fund for Strategic Investments (EFSI), Horizon 2020, the Connecting Europe Facility and other directly managed EU-funds is additional to the ESI funds. By end 2016, Denmark has signed agreements for EUR 658.7 million for projects under the Connecting Europe Facility. The EIB Group approved financing under EFSI amounts to EUR 329 million, which is expected to trigger nearly EUR 1 billion in total investments (as of end 2016).

All necessary reforms and strategies as required by ex-ante conditionalities have been put in place for an efficient up take of the funds[2].

All relevant CSRs were taken into account when designing the 2014-2020 programmes. ESI Funds investments in Denmark aim to a large extent at promoting SME development. A substantial part of these investments concerns the establishment of clusters and networking constellations with the aim of supporting SMEs in innovation-oriented collaboration with research institutes and/or universities, and of helping them with exchanging knowledge and transfer of technology. In this respect, the ESI Funds respond well to the challenges of the CSR, as it is expected that support for innovation in businesses will result in 2.700 businesses presenting products, which are new to the business or the market.

In addition to the challenges identified in the CSR, **the ESI Funds address other structural weaknesses which impede growth and competitiveness**. These include investments in energy efficiency measures in businesses which on the one hand will increase the competitiveness of SMEs (increased energy savings equivalent to EUR 22 million are expected during the programming period) and on the other hand will reduce carbon-dioxide emissions of more than 127.000 tonnes CO2-equivalents. ESI Funds also address the challenges identified in previous years in the context of the European Semester, such as social inclusion by targeting the employability of people at the margins of the labour market and improvements in vocational training and higher education. Consequently, more than 11 000 persons are expected to receive training to improve or ensure their employability.

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

[1] National public investment is defined as gross capital formation + investment grants + national expenditure on agriculture and fisheries

[2] At the adoption of programmes, Member States are required to comply with a number of ex-ante conditionalities, which aim at improving framework and investment conditions for the majority of areas of public investments. For Members States that do not fulfil all the ex-ante conditionalities by the end 2016, the Commission has the possibility to propose the temporary suspension of all or part of interim payments

3. REFORM PRIORITIES

3.1. PUBLIC FINANCES AND TAXATION

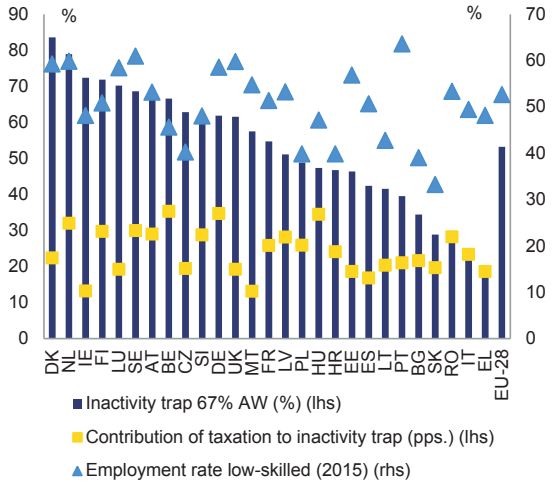
3.1.1. TAXATION SYSTEM

Recent developments in Denmark's tax system aimed to make it more favourable to investment and entrepreneurship. The 2025 plan presented by the previous government (and which is expected to be continued in some form by the new government) aimed to increase investment and productivity. It plans to reduce taxes for businesses through introduction of an allowance for corporate equity (ACE) for new equity, expand tax deductions for R&D expenses and cut taxes for new businesses. It also plans to encourage investors to put their money into promising small enterprises. In order to reduce incentives to debt uptake, the government plans to limit the possibility of deducting interest on loans in the personal income taxation system.

Recurrent property taxes have been frozen and property valuations are outdated. The government has come forward with a plan for a new, more accurate way to assess the value of properties. This plan could make property owners pay taxes based on the current market value of their houses. The government also aims to reduce property taxes: according to its plans, two thirds of homeowners should pay less than under current rules and the rest should not see a bigger tax bill due to permanent tax discount that the government plans to introduce (see also Section 3.2).

Low-income earners in Denmark are faced with a high inactivity trap to which current taxation system also contributes (Graph 3.1.1). In order to promote job creation, the government plans to reduce personal income taxes, especially on low and middle incomes. These changes aim to increase labour supply and increase the employment rate. In Denmark, the risk of being poor is lower than in most other EU countries, yet 12.7 % of the population was at risk of poverty in 2015. The government has proposed making income earned by homeless people tax-free up to a threshold, and to grant a special cash benefit for people who have been out of the labour market for a long time (see also Section 3.3).

Graph 3.1.1: **Inactivity trap for low income earners in EU Member States, 2015**

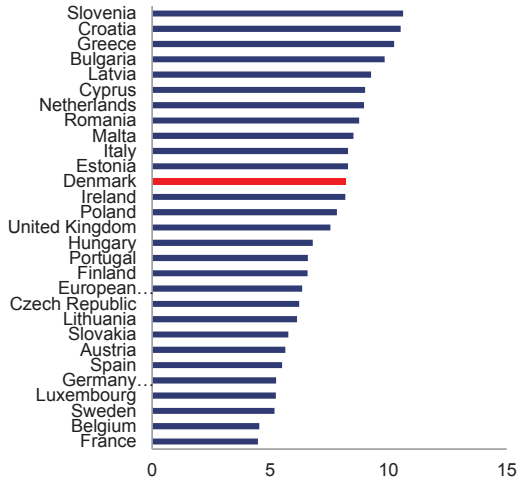


Source: European Commission tax and benefits indicator database based on OECD data

The Danish Public Service Obligation's (PSO) objective is to support Denmark's ambitious environmental objectives. PSO is a tariff levied upon all electricity consumed in Denmark for the support of renewable energy. As from 2017, Denmark is phasing out the PSO tax replacing it with revenues from the general State budget. The government based its decision on an evaluation of the PSO scheme, which showed that its impact on energy costs was too high compared to its effectiveness in promoting the development of renewables. In addition, the European Commission raised competition concerns over the PSO tax scheme, because electricity producers from other EU Member States exporting electricity to Denmark did not have access to subsidies under the same conditions as Danish energy companies.

Environmental tax revenues relative to GDP, at 4.08 % in 2014, are high compared to the EU average of 2.46 %. Compared to the total revenues from taxes and social-security contributions, environmental tax revenues accounted for 8.18 % in 2014 (EU average: 6.35 %) as shown in Graph 3.1.2. This represents a modest decrease compared to 2013 (8.92 %).

Graph 3.1.2: **Environmental tax revenues percentage of total revenues from taxes and social contributions (excluding imputed social contributions) in 2014**



Source: Eurostat

3.1.2. FISCAL FRAMEWORK

The fiscal framework in Denmark consists of a medium-term budgetary strategy, the Budget Law and the rules following from the Stability and Growth Pact. The medium-term budgetary strategy applies to all levels of government. The central objective in the strategy is to achieve a structural general government balance or surplus in the medium to long term.

Compliance with the national fiscal rules is being monitored by the Danish Economic Council (DORS). As a part of the 2012 Budget Law, DORS, an independent institution, was designated 'fiscal watchdog', and is monitoring the long-term sustainability of public finances, the medium-term development of the budget balance and whether the expenditure ceilings are complied with, and whether these are in line with the medium-term fiscal objective.

3.1.3. FISCAL SUSTAINABILITY

Risks to Denmark's fiscal sustainability are low in the short, medium and long term. According to the forthcoming European Commission's Debt Sustainability Monitor, risks related to Denmark's fiscal sustainability appear to be low in the short, medium and long term. There are no short-term risks of fiscal stress, though some variables (such as the share of short-term public debt out of total debt) point to certain short-term challenges. The government's contingent liability risks from the banking sector, in particular due to high bank loan-to-deposit ratio and the relatively high share of non-performing loans coupled with low (less than 33 %) coverage ratios also require constant monitoring. In the medium term, there are no apparent risks from a debt sustainability analysis perspective due to the low stock and gradually decreasing public debt until the end of projections (2027). Debt projections appear resilient to potential shocks to nominal growth, interest rates and primary balance. No medium-term risks emerge from the analysis of the sustainability gap indicator S1([6]) either. This is due to the debt ratio being far below the 60 % Treaty reference value, decreasing age-related public spending and the favourable initial budgetary position. Finally, there are no sustainability risks for Denmark in the long run, assuming that the Commission's structural primary surplus forecast for 2018 will be kept beyond that year. Risks in the long term appear limited due to the favourable initial budgetary position and because increasing public spending on healthcare and long-term care are expected to be compensated almost fully by forecast falls in public spending related to pensions and other factors.

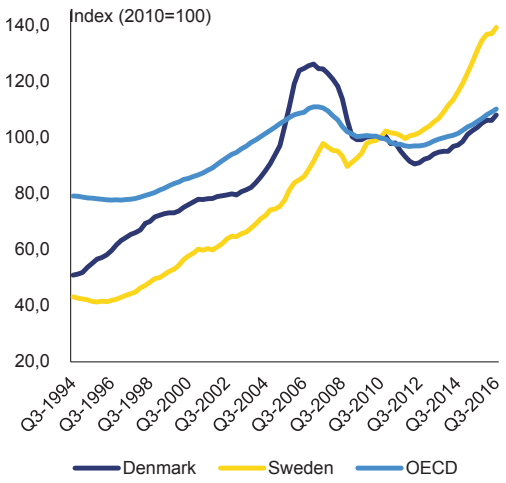
([6]) The medium-term sustainability indicator S1measures the fiscal adjustment effort required, in cumulated terms over the next 5 years after the period covered by the forecast horizon (i.e. from 2019) to drive the public debt-to-GDP ratio down to 60 % in 15 years' time (currently 2031).

3.2. FINANCIAL SECTOR

3.2.1. HOUSING MARKET AND PRIVATE INDEBTEDNESS

Danish real house prices have accelerated steadily since they reached their lowest level in Q2 2012. The annual growth rate increased from 1.5 % in Q1-2013 to 6.3 % in Q4-2015, although slowed slightly to 4.3 % in Q3-2016 (see Graph 3.2.1). House price growth has been steeper in certain geographical areas and housing segments. The rise has been mainly driven by the main urban areas: for instance, prices in Copenhagen climbed by 47 % compared to the national average of 19 % since 2012. While average house prices in Denmark are still almost 14 % below their Q1 2007 peak, the prices in Copenhagen are now above their pre-crisis levels. Prices of multi-dwelling buildings (concentrated in urban areas) have increased by 44 % since the trough in 2012, while prices for single family houses increased by 17 % in the same period.

Graph 3.2.1: **Real house price increase (Index 2010=100)**



Source: Eurostat, OECD

Demand side drivers are supporting house price growth. Strong urbanisation trends put upward pressure on property prices in the main urban areas. While the population of Denmark grew by an average of 3 % between 2008 and 2015, the population of Copenhagen grew by 17 %, and Copenhagen is expected to remain one of the fastest-growing capitals in the EU. Although Denmark's GDP grew by only an estimated 5 % between 2012 and 2016 real disposable incomes grew by 18 % during the same period, on a par with house prices. Low inflation has further eased financing conditions, and mortgage interest rates fell to historically low levels in 2015, although they have increased slightly since then. The favourable financing conditions are further magnified by the availability of interest-only loans. The unique Danish mortgage system has been able to provide households with a large number of low-cost mortgage loans, resulting in one of the lowest mortgage rates in the EU.

Policy remains favourable for building up housing equity. Although interest deductibility for mortgage loans is being gradually reduced from 33 % in 2007 to 25 % by 2019, it remains one of the highest in the EU. Denmark also belongs to a group of relatively few EU countries where there is no ceiling on the total amount of the deduction, and there are no special conditions for a mortgage loan to qualify for the tax deduction ([7]).

Features of the property tax system can be improved in order to reduce house price swings. Housing taxation in Denmark consists of two separate taxes: property value tax and land tax. The majority of homeowners pay recurrent property taxes on the basis of 2001-2002 assessments and land tax increase has been capped (see also Section 3.1). This means that a nominal ceiling is imposed on the property value tax so that a rise in the value of property will not increase tax payments for many home owners. As a result, since 2001, the effective tax rate for housing at national level has dropped from 1 % in 1998 to below 0.55 % in 2015 with large variations across municipalities (Klein et al., 2016). The current property tax system thus favour areas that have had the highest house price growth (such as the main urban areas) and can lead to greater fluctuations of house prices. The current system also limits the budgetary revenues from increased house prices. In January 2017 the government presented a proposal to adjust the Danish housing taxation system.

Supply-side inefficiencies are particularly persistent in the main urban areas. Rapidly rising land prices and long and complex planning processes remain significant supply-side

([7]) In the Netherlands, for instance, only amortised loans are eligible for a tax deduction.

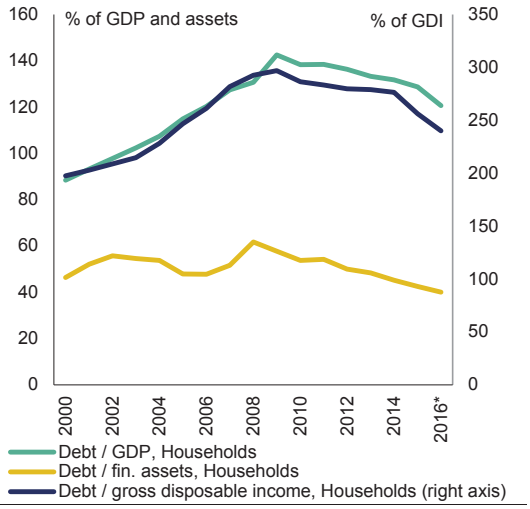
constraints on housing in Denmark. The supply side may also be held back in the near future by a lack of skilled labour (Dansk Byggeri 2015).

The rental market remains subject to one of the highest degrees of rent control among EU countries. Despite reforms ([8]) in this area, around 80 % of the private rental housing market stock still remain under rent control. As a result of high rent control (Cuerpo et al., 2014), rental prices have fallen below market prices in certain regions, in particular in the Copenhagen area. Significant deviation between market prices and rental prices can limit the supply of rental apartments and fuel demand for owner-occupied houses which puts further upward pressure on house prices. Reduced rental market opportunities can make it difficult for low-income households to access cheap entry-level housing, thereby negatively affecting labour mobility.

Despite accelerating house price growth, credit developments remained subdued. The average annual growth rate of lending to households has been gradually falling since 2007 growing at a rate of only 1 % in 2016. As a result, Danish households have been in a gradual passive deleveraging phase since 2007, in which benign credit demand and supply conditions are facilitating smooth and gradual adjustment of household debt driven by nominal growth of the economy. Household debt as a share of GDP and disposable income has been decreasing continuously: the level of household debt to disposable income has declined from its peak of 297 % in 2009 to 240.1 % in 2016 (one of the highest rates of deleveraging among the EU), while the level of household debt to GDP fell from its peak of 142.5 % of GDP in 2009 to 120.7 % in 2016. Deleveraging trends significantly accelerated between 2014 and 2016, when debt to disposable income decreased by 36 pps. and debt to GDP by 11.1 pps. (see Graph 3.2.2).

Large household debt is underpinned by a strong financial position of households, with assets exceeding gross debt. Due to policy incentives, Danish households save in pension schemes and housing equity rather than reducing their gross debt. This has resulted in balance-sheet expansion with a high level of assets and liabilities. A significant portion of household debt is related to housing wealth, and gross debt is compensated by pension wealth. Households' debt to financial assets ratio has fallen from a peak of 61.7 % in 2008 to 40 % in 2016.

Graph 3.2.2: **Leverage, Households - Denmark (2015)**



Source: Eurostat

High pension savings mean that Danish households are in a position to service their debt even after retirement. Nevertheless, these funds are accessible only upon retirement, and mostly through monthly instalments. The bulk of pension fund assets is held in equities and bonds, and is therefore subject to fluctuations in value. This means that Danish households' balance sheet can be vulnerable to shocks which could affect their debt servicing ability.

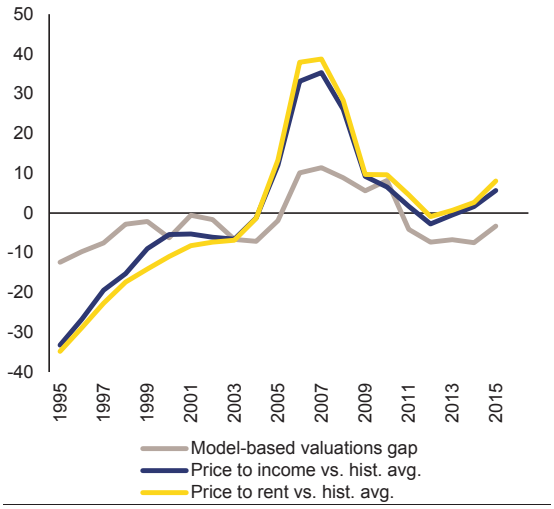
In the short term, house prices in Denmark appear to be in line with their underlying fundamentals. Nevertheless, the affordability (price-to-income) ratio has been increasing steadily since 2011 although it is still 25 % below its peak during the housing cycle. European Commission calculations do not suggest a potential overvaluation on a national scale, as house prices appear to be around their fair value (see Graph 3.2.3) ([9]). Nevertheless, such aggregate figures

([8]) In Denmark, rent control was abolished in 1991 for new buildings, and so only buildings built before 1991 remain subject to rent control.

([9]) The aggregate valuation gap is an average of three measures: (1) the affordability gap (price-to-income deviation with respect to its long-term average); (2) the yield gap (price-to-rent deviation from its long-term

could mask regional differences and some recent analyses argue for a potential overvaluation in the Copenhagen area (Klein et. al., 2016).

Graph 3.2.3: **Overvaluation gap with respect to price/income, price/rent and fundamental model valuation gaps**



(1) Overvaluation gap estimated as an average of the price/income, price/rent and fundamental model valuation gaps. Long-term values are computed over 1995-2015.
Source: Commission services calculations.

Despite positive developments over the last years, the high level of household debt could pose a potential challenge to financial stability. If households are affected by shocks to their income, their mortgage interests expenditure or the value of their housing, their consumption will likely fall. This was experienced by several EU countries after the financial crisis, including Denmark, and together with the fall in housing investments contributed to a prolonged economic slump. If such risks were to materialise, there could be potential spill-over effects to other countries in the Nordic-Baltic region. As a result, the European Systemic Risk Board — which in 2016 conducted an EU-wide forward-looking assessment of vulnerabilities relating to residential real estate — issued warnings to Denmark on vulnerabilities in the residential real estate sector resulting from a combination of a procyclical housing tax system, a highly regulated rental market, non-amortising loans, and a high proportion of variable interest rate mortgages ([10]).

Denmark has introduced a wide set of policy measures to reduce risks stemming from rising house prices and indebtedness and to strengthen the resilience of the financial sector. The deductibility of interest on mortgages is being gradually reduced. The macroprudential measures for commercial banks known as the 'Supervisory Diamond'([11]) are being gradually implemented. A 5 % compulsory downpayment for new loan applications was introduced in November 2015. New guidelines with credit rating recommendations on the mortgaging of homes in growth areas (currently Copenhagen and Aarhus) have been introduced from 2016. The 'seven best practices' include interest rate stress tests, amortisation requirements for negative net wealth customers, and net wealth requirements for customers with high loan-to-income ratios (see also Section 3.2.2).

Risks related to high household debt are also gradually being reduced by changes in the composition of the loan portfolio. The pace of mortgage loan amortisation by Danish households has increased in recent years, although it still remains relatively low and the proportion of variable interest rate mortgage loans from new loans has declined. These trends could nevertheless also reverse if interest rates start to increase and households opt for lower monthly payments by extending the amortisation period.

3.2.2. FINANCIAL SECTOR STABILITY

Financial soundness indicators suggest that the banking sector is stable. Banks are well capitalised: the average Tier 1 ratio was at 17.8 % in mid-2016 (Table 1.1). The quality of bank assets in Denmark is outperformed by its Nordic peers, as some Danish banks are still suffering from legacies of the economic crisis in 2009, especially smaller banks in rural areas. Yet, the average ratio of non-performing loans decreased from 5.1 % in

average); and (3) an estimate of the deviation from equilibrium values from a fundamental error-correction model.

([10]) The Board's warnings to Denmark and seven other Member States were published on 28 November 2016.

([11]) A supervisory tool that monitors banks' performance against five benchmarks: large exposures, lending growth, exposure towards commercial property, funding ratio and liquidity.

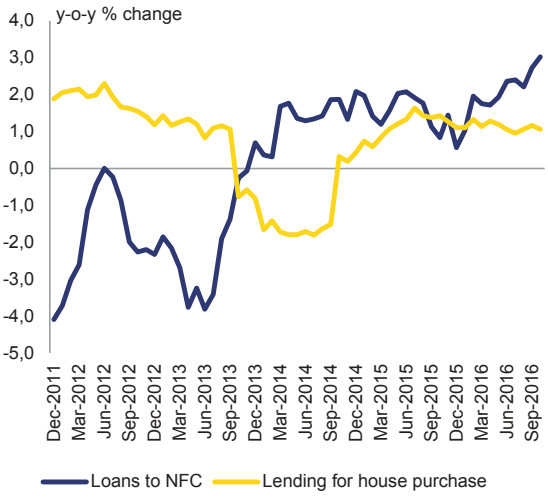
2014 to 3.6 % in June 2016. Bank profitability further improved and in 2015 both the return on equity (6.8 %) and the return on assets (0.4 %) were above the EU average (4.3 % and 0.3 %, respectively). The sector profitability ratio is lowered by the mortgage credit institutions, whose standard business model is to charge low margins on mortgage loans.

The bond market is very well developed. The overall size of the debt securities market in Denmark increased from EUR 492 billion in 2008 to EUR 644 billion in 2015 (242 % of GDP). Bank-issued debt securities, primarily the mortgage bonds, accounted for EUR 503 billion or 189 % of GDP, constituting the largest segment. The government is the second biggest issuer with the value of outstanding sovereign bonds amounting to EUR 109 billion (equivalent to 41 % of GDP). Market debt funding of non-financial corporations remains at relatively low levels (Graph 3.2.5), but it has been increasing and reached EUR 28 billion, i.e. 10.5 % of GDP in 2015, from less than 6 % in 2008.

The financial sector's loan-to-deposit ratio (LTD) continues to decline gradually. Lending to companies expanded faster than lending for house purchases (Graph 3.2.4). By October 2016, the growth rate of banks' corporate exposures increased to 3 % year-on-year (y-o-y), whereas growth in lending for house purchase was stable at 1.1 % y-o-y. On the banking sector's liabilities side, deposits grew at 4.3 %, contributing to the sluggish reduction of the LTD ongoing since 2012 (see Table C.1), though the Danish LTD of 270 % was still the highest in the EU. This is explained by the dominant role of market-based financing, in particular through mortgage bonds. Funding by the own-issued debt securities accounted for 43 % of the Danish banking sector liabilities compared to 28 % share of all deposits.

There are certain risks related to the Danish banking sector. The large portfolio of deferred amortisation loans with the interest-only period expiring in 2019-2020 may lead to a peak of problems with debt repayment, especially if combined with interest rate hikes. However, the general share of deferred amortisation loans at Danish banks was decreasing in recent years, from 55 % of all household mortgages in 2013 to 50 % in 2016 (Association of Danish Mortgage Banks data). Another specific risk is related to the substantial share of Swedish financial groups in the Danish market (for more details, see European Commission's Country Report on Sweden, 2016). Financial stress in Sweden, for instance caused by a sharp correction in housing prices there, could have a spill over effect on market confidence in Denmark.

Graph 3.2.4: **Lending trends**



(1) In calculation of the LTD ratio claims on monetary financial institutions, government and non-residents were excluded. NFC denotes non-financial corporations.
Source: European Central Bank

At the beginning of 2017, Nordea Bank converted all its Nordic subsidiaries into branches. They are systemically important in each of the four countries. From now on, the supervision of Nordea Bank Denmark, the second largest bank in the market, will be the responsibility of the Swedish financial supervisory authority. Based on the standard rules governing host supervision, the change would seriously constrain the Danish authorities' insight into the business of the bank as well as their ability to carry out macroprudential policy. To deal with the new situation, the Nordic authorities have agreed on arrangements concerning information sharing, supervisory responsibility and cooperation, macro-prudential policy, depositor protection and recovery and resolution planning.

Few macroprudential measures in Denmark have a legally binding nature. In 2016, the

Danish Financial Supervisory Authority ([12]) confirmed the previously-identified six largest banks in Denmark as systemically important institutions (O-SII), given the structural systemic risks posed to the financial sector. For each of the six systemically important institutions, the Ministry of Industry, Business and Financial Affairs has set a systemic risk buffer, according to the level of systemic importance of each institution([13]). The buffer is being gradually phased in during the 2015-2019 period. The countercyclical capital buffer was introduced on 1 January 2016 and calibrated at 0 %. It has been maintained at this level at each quarterly re-setting, given the subdued credit growth in the country, as measured by the credit-to-GDP gap.

In 2016, the Danish Financial Supervision Authority (DFSA) carried out on-site inspections of the five largest banks active in housing lending in Copenhagen. It examined compliance with the new guidelines for credit rating of mortgage loans in growth areas (see Box 3.2.1). The inspection revealed that 10 % of newly approved loans deviated from at least one of the seven best practices. Banks were loosening their credit assessment standards mainly due to strong competition in the housing loan market. On orders received from the DFSA, banks had to take corrective steps regarding their internal procedures and governance.

3.2.3. ACCESS TO FINANCE

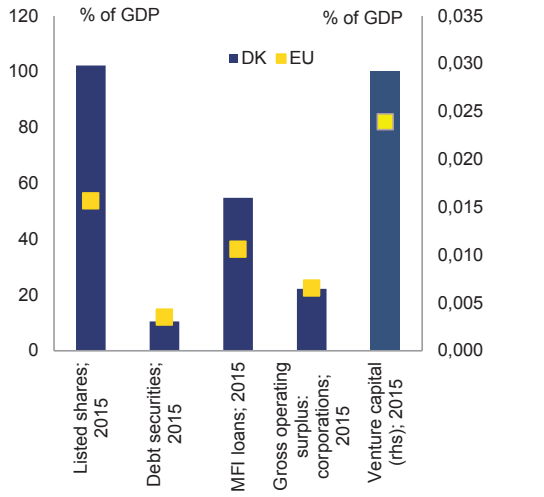
Equity is the main source of financing for Danish companies. The Danish stock market, which is fully integrated into the Nordic OMX-Nasdaq exchange, is very deep. In 2015, the total stock of listed shares issued by firms amounted to 103 % of GDP, almost twice the EU average (Graph 3.2.5). The share of venture capital investment relative to GDP is also above the level observed in most EU countries.

([12]) The macroprudential authority in Denmark is the Systemic Risk Council (SRC).

([13]) The six identified systemically important institutions and their respective Systemic Risk Buffer rates, are: DLR Kredit A/S (1 %), Sydbank A/S (1 %), Jyske Banks A/S (1.5 %), Nordea Bank Danmark A/S (2 %), Nykredit Realkredit A/S (2 %), and Danske Bank A/S (3 %).

Access to finance for SMEs remains relatively favourable in Denmark. Nevertheless, according to the European Commission's SME Performance Review, the country ranks only eighth in terms of access to finance, a significant drop from the third place it held in 2015. The latest macroeconomic developments, however, do not point to a deterioration in the Danish business climate, and Danish SMEs have been growing (constantly albeit not dynamically) since 2010.

Graph 3.2.5: **Funding of non-financial corporations**



Source: European Central Bank, AMECO

Access to finance remains challenging for microenterprises and the self-employed. The relative cost of taking up small loans (up to EUR 1 million) compared to the cost of large loans is higher in Denmark than most other Member States. Denmark offers better access to equity financing than most other Member States. Still, small businesses report difficulties in obtaining this type of finance. The insolvency framework works well, but it is not easy to start a business following a bankruptcy: it may take several years to get a discharge after going bankrupt. The latest results for Denmark in the European Commission Survey on the Access to Finance of Enterprises (SAFE survey) point to the increasing scarcity of debt financing. In practice, mortgage collateral is usually required from small and medium-sized companies in order to receive a bank loan. Many start-ups do not have real estate to mortgage.

3.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES

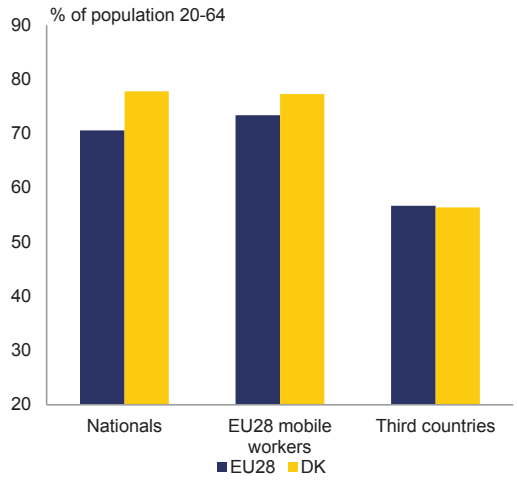
3.3.1. LABOUR MARKET AND SOCIAL INCLUSION

Despite a well-performing labour market, with a high employment rate and low unemployment, Denmark faces a number of labour market challenges. In the context of demographic ageing and the fiscal sustainability of the welfare system, it is important to ensure long-term labour supply. The share of the population above the age of 65 has increased from 16.3 % in 2010 to 18.8 % in 2016, and life expectancy at birth has likewise shown an upwards sloping trend. In recent years, Denmark has adopted labour market reforms to promote incentives to work. These policy measures aim at closing the 3.5 percentage points (pps.) gap to Denmark's Europe 2020 employment rate target of 80 %. This is also expected to contribute to the long-term fiscal sustainability of the Danish welfare model.

People on the margins of the labour market represent both a loss of human capital and a social inclusion challenge. The employment rate of people with disabilities has remained stable in recent years (approximately 50 % in 2013), despite initiatives such as online job databases for people with disabilities and increased cooperation with private companies. In 2015, there was a significant difference between the employment rate of people born in Denmark (78.4 %) and those born outside the EU (59.2 %) (Graph 3.3.1). This gap is one of the highest in the EU and it appears to be driven by a lower activity rate (where the gap compared to native born Danes is 13.7 pps., one of the highest in the EU) and a higher unemployment rate for both genders. The employment gender gap between men and women increased from 6.4 pps. in 2012 to 7.5 pps. in 2015, which remains below the EU average of 11.6 pps. in 2015. However, for migrant women the situation is particularly unfavourable. The employment rate of non-EU born women was 53.8 % in 2015, which is 21.5 pps. below the level reached among native-born women.

The challenges faced by first-generation migrants are likely to impact the second generation as well. Second-generation migrants represented around 4 % of the total population aged 15-34 in 2013, while those with a mixed background (only one parent being foreign-born) represented 5.7 % in the same group (OECD, 2015). Young people aged 15-24 born to immigrant parents were in 2013 almost twice as likely to be unemployed (unemployment rate 18.0 %) compared to young people with parents born in Denmark (unemployment rate 9.3 %) (OECD, 2015).

Graph 3.3.1: **Employment rate by country of birth (ages 20-64), 2015**



(1) Employment rates ages 20-64 (% of population), non-seasonally adjusted
Source: Eurostat, EU-Labour Force Survey

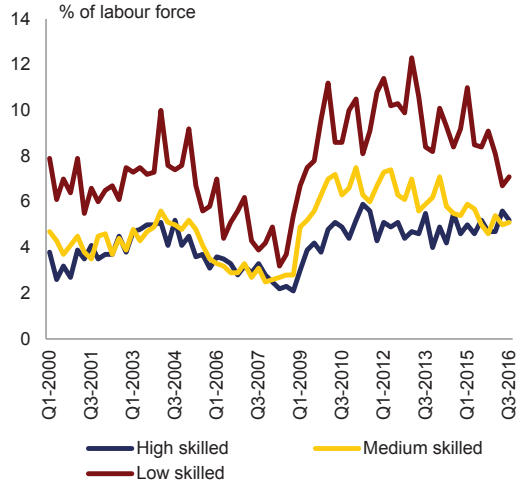
Factors behind the weaker labour market outcomes of non-EU-born migrants include a lower skill level and an underuse of higher skills. Over-qualification (work which requires skills below those a person holds) of tertiary educated third-country nationals increased steadily between 2008 and 2015 from 34 % to 41 %, compared to a change from 14 % to 13 % for Danish nationals in the same period. This suggests a growing sub-optimal use of migrant labour potential([14]). Migrants have access to Danish courses free of charge, but the difficulty in mastering the Danish language is an important entry barrier. These factors are likely to hamper overall labour market performance and economic growth.

The skills profiles of migrants pose an additional challenge to the labour market. In 2015, net migration was 42 000 people, which is

([14]) Defined as the percentage of persons in employment with a high educational level (tertiary education) who are in low or medium skilled jobs.

historically high. In 2015 — as was the case for many EU Member States — Denmark received the highest number of asylum applications in more than 20 years (a total of 21 000). On average 85 % of all asylum seekers have been granted asylum in Denmark, which is a relatively high proportion compared to the EU average of 51 %. Net migration of third-country nationals has likewise increased significantly in recent years, from some 5 000 in 2011 to 25 000 in 2015. This has contributed to the fact that approximately 9.5 % of the total Danish population were born outside the EU. Migrants often face more obstacles, take longer to integrate into the labour market than natives, and tend to present more unfavourable labour market outcomes. In March 2016 the government and the social partners reached an agreement aiming at a significant strengthening of efforts to ensure better integration in the labour market of refugees and persons reunified.

Graph 3.3.2: **Unemployment rate by educational attainment (quarterly)**



(1) Unemployment rates ages 20-64 (% of labour force), non-seasonally adjusted
Source: Eurostat, LFS

Youth unemployment in Denmark is low but remains a matter of concern. The unemployment rate of those aged 15-24 was 11.1 % in first half of 2016, which is well below the EU average of 18.9 %. However, there are indications that the NEET rate is going in the wrong direction in Denmark, even if this remains low in the European context (6.2 % as compared with the EU average of 12.0 % in 2015).

In recent years the Danish government has introduced legislation along the lines of the EU youth guarantee to fight youth unemployment. All young people without an ordinary education receiving education benefit will receive an offer of activation within one month. The offer of activation has to be individually tailored and aimed at education. A key measure for the vulnerable young people without an education is the 'Building Bridge to Education', which has shown significant positive effects for the target group. The purpose of the initiative is to bring young people into education and ensure that they finish (STAR 2016). The initiative takes place at vocational schools and consists of a fixed schedule with various short internships at vocational schools and enterprises. Furthermore, the young persons will participate in courses to upgrade their basic skills in reading, writing and arithmetic. The young person will have an educational mentor who will support the young person during the offer and in the transition to education. The measure is now being implemented nationally as the primary measure for this target group. Nonetheless, it remains a challenge for young people with low educational attainment and very limited work experience to enter the labour market. Around 31 % of social assistance recipients in 2015 were aged 16-29 years.

The share of the population at risk of poverty or social exclusion has decreased slightly in recent years. In 2010 about 18.3 % of the Danish population was at risk of poverty or social exclusion([15]). In 2015 this share has fallen to 17.7 % and it has fallen slightly more for women than for men. Further, the proportion of elderly (65+) at-risk-of-poverty or social exclusion almost halved, from 18.4 % in 2010 to 9.9 % in 2015. At the same time, severe material deprivation has increased from 2.7 % to 3.7 %. Despite the negative development, this remains below the EU average. The situation remains critical for migrants, with 39.9 % of the non EU-born at risk of poverty or social exclusion (43 % for women).

([15]) Due to on-going revisions by Statistics Denmark on the SILC time series, data from 2011 and onwards are not fully comparable to earlier data, even if the overall tendency is still valid. This may add uncertainty to the analysis of indicators such as the Gini coefficient, the income quintile share ratio (s80/s20), Risk of Poverty (ROP) and Risk of Poverty or social Exclusion (AROPE) for which the data comparison across time must be interpreted with caution.

This is more than twice the level for natives (17.7 %).

From 2008 to 2015 the number of people living in low work intensity households increased by 35 %. This development implies that the gap to the national Europe 2020 target in the area of poverty and social exclusion, which is reducing the number of persons living in low work intensity households with 22 000 by 2020, increased further. In particular, the number of homeless people has increased in recent years[16]. The Danish government has introduced a strategy to progress towards its 10 social mobility goals, which are designed to give direction and greater emphasis to social policy. It aims to decrease the number of vulnerable persons, increase the activity rate and incentivise more people to start an education despite a physical or mental disability. Among the main target groups of the strategy are people with disabilities or social problems, marginalised people, such as homeless or people who suffer from alcohol or drugs abuse.

3.3.2. LABOUR SUPPLY AND DEMAND

The Danish labour market is facing a shortage of certain types of labour. The main challenge is a lack of workers with a vocational education. In some sectors, including the construction sector, this issue is particularly critical. This shortage of certain types of labour, or potential skills mismatch, has influenced the recent reforms of active labour market policies and led to several educational reforms in recent years. A study by the independent economic modelling institute DREAM suggests a total skills mismatch involving approximately 110 000 persons by 2025 (Iversen et al. 2016). Another study, carried out by the think-tank Danish Economic Council of the Labour Movement, estimates a shortage of 70 000 vocational workers in 2025 (Arbejderbevægelsens Erhvervsråd, 2016a). There is also a growing demand for workers with ICT skills. While these skills are particularly relevant to foster the capacity of the Danish economy to further innovate and grow, the share of ICT specialists has been steady in recent years.

The lack of workers with a vocational education may partly be caused by an 'image problem'. This is related to a potentially misleading view on the quality of teaching and the future job opportunities. Furthermore, the difficulty of finding an apprenticeship place — which is the student's own responsibility and a compulsory part of most vocational education and training (VET) programmes — remains a key challenge. As a result, the academically-oriented upper secondary programme, 'gymnasium', and other similar programmes have attracted a large proportion of the young people in recent years.

In August 2016 the Danish government and a number of social partners agreed on a plan to ensure a sufficient level of skilled labour in the future. The employers' side committed itself to supplying 8 000-10 000 additional apprenticeship places by 2025, in order to encourage young people to start a vocational education and thereby meet the required skills composition of workers (Ministry of Employment, 2016b). This is expected to help progress towards the targets of the Danish VET reform from 2015, which by 2025 aims at 30 % of a youth cohort taking up VET directly after compulsory schooling. Financial sanctions will be imposed on companies that do not supply the required apprenticeship places. It remains too early to assess the impact of the tripartite agreement. Furthermore, the recent and future arrivals of asylum seekers from non-EU countries could potentially provide an additional influx into the vocational education system.

Mobility of workers may be hampered by an increasing problem of housing affordability. Areas with job opportunities are typically the main metropolitan areas where house prices are the highest and where supply-side inefficiencies limit available housing (see Section 3.2). The low availability of cheap housing solutions is particularly a problem in the capital area. Lack of affordable housing could contribute to labour market disequilibria in a geographical context and puts pressure on infrastructure and public transportation systems.

[16] Between 2009 and 2015, the number of homeless people increased by 23 % (from 4,998 to 6,138 persons). In particular, the number of young homeless people (aged 25-29) has grown significantly, from 617 to 799, corresponding to a growth rate of 29 %.

3.3.3. SOCIAL TRANSFERS AND MIGRATION POLICY

The long-term effects of the 2010 unemployment insurance reform have been assessed to be positive. According to an analysis by the Ministry of Employment, the shorter two-year unemployment insurance period has resulted in a larger share of the unemployed persons entering the job market at the end of the unemployment insurance period, compared to the previous system (four-year period) (Ministry of Employment, 2015). Furthermore, the analysis shows that unemployed people aged 25-30 react more strongly and earlier to the expiry of the unemployment insurance period, than do the unemployed aged 30-55. In addition, men react earlier to the reform than women. Overall it remains too early to assess the long-term impact of this reform, but short-term indicators point towards positive effects.

A political agreement was reached in October 2015 to adjust the unemployment insurance scheme towards making it more dynamic and to create incentives to work. The agreement allows for the possibility of prolonging the benefit period from two years to at most three years by taking on work (Ministry of Employment, 2016c). In the new system the insured unemployed person can use the hours worked to extend the benefit period, or save them for a later application for a new benefit period. This should encourage unemployed people to look for work, but, at the same time, the possibility to prolong the benefit period could also lead to increased public expenditure. The possibility of prolonging the benefit period is largely financed by a reduction in the unemployment benefit rate for graduates without children, from 82 percent of the maximum benefit rate to 71.5 percent. It is still too early to assess the long-term impact of this policy change.

A social assistance benefit ceiling entered into force in October 2016. The ceiling, which is designed to increase the incentive to work, sets a limit on how much may be received in social benefits. Persons affected by the ceiling can regain all or some of the deducted benefits with relatively few hours of work. The exact limit is related to the family situation of the recipient. If the total amount of benefits exceeds the ceiling, the housing allowances and special support will be reduced by the excess amount([17]). According to studies by the think-tank Danish Economic Council of the Labour Movement the ceiling is expected to affect around 30 000 people, approximately 70 % of whom have children (Arbejderbevægelsens Erhversråd, 2016b).

A recently introduced work requirement (October 2016) aims to make work pay. Those social assistance recipients who take at least 225 hours of work for 12 months keep the right to receive the full amount of social assistance, and thereby to avoid being affected by the social assistance ceiling. This corresponds to six weeks of fulltime work or six hours of work per week. The combined impact of the ceiling and the work requirement is estimated to increase employment by 5-700 persons (full-time workers) but the impact on the incentive to work is still to be seen (Arbejderbevægelsens Erhversråd, 2016b).

The Danish government has introduced a sequence of policy measures since September 2015, with the overall purpose of reducing the number of asylum seekers and improving refugee integration. Recently introduced rules on conditions for asylum seekers and refugees, and the 'Asylum Package' of January 2016, resulted in a cut in the monthly benefits that refugees receive (depending on the family composition of the individual refugee). The reduced social benefit applies to everyone - including Danish citizens - not meeting the residence requirement (less than 7 years of residence in Denmark within the last 8 years). However, the overall aim is to deter immigration and encourage refugees to find employment quickly (Martín et al., 2016). The Danish reaction to the refugee crisis has attracted domestic and international attention, in particular the legislation on stricter conditions for family reunification, shorter residence permits and declaring personal belongings of high financial but not sentimental value. While evidence suggests that in the past Denmark's lower social benefits for newcomers – the 'Start Help' – have slightly increased employment rates, the measure has also led to a decrease in their income levels (Rosholm and Vejlin, 2010; Pedersen, 2013).

([17]) The ceiling does not take into account child-related benefits.

A number of recent agreements constitute some changes in encouraging the inclusion of migrants into society, including their integration into the labour market. In the past, refugees adapted gradually into the Danish labour market, for instance via language courses. The outcome of a political agreement between the Danish government and the social partners in March 2016, the tripartite agreement on Labour Market Integration, focuses on early intervention and job-oriented measures. Individual assessments are now carried out for each migrant to clarify their professional and personal needs. Asylum seekers are screened during the application phase and the allocation of successful applicants to the different municipalities are tied to their job opportunities. Refugees are to acquire work experience (traineeship, wage subsidy, integration basic education or an ordinary job) within one month after arrival to the municipality. They may work at an apprentice salary level, or participate in the 'Education for Integration' (IGU) programme. A cash bonus scheme applies for companies that enter into IGU contracts and hire refugees (DKK 20 000 – i.e. EUR 2 700 - after 6 months of employment and an additional DKK 20 000 on completion of the two-year programme).

3.3.4. EDUCATION

School education outcomes in Denmark are above the EU average, both in terms of performance and equity. According to OECD PISA 2015, the proportion of low achievers in basic skills among 15-year-olds is significantly lower than the EU average (16 % in science, 15 % in reading, 14 % in mathematics). Performance in maths significantly improved compared to 2012, while remaining broadly stable in reading and science. Gender gaps and the impact of socio-economic status on performance are among the lowest in the EU (OECD, 2016).

However, the situation of students with a migrant background continues to be of concern. In 2015, around 9.5 % of non-EU born aged 18-24 were early school leavers, slightly higher than the average among native-born (7.7 %). The situation is more problematic among non-EU born men with an early school leaving rate of around 13.2 %, 3.7 pps. above the level recorded among native-born men (9.5 %). Moreover, according to PISA 2015 data, the proportion of low achievers (in science) was much higher for foreign-born (39.8 %) and native-born children with foreign-born parents (37.8 %) than for native-born students (12.6 %) (OECD, 2016). While the socio-economic background explains part of the difference in educational results, a migration-specific disadvantage for both foreign-born and for native-born children with foreign-born parents remains even after adjusting for this([18]).

Recent reforms aim at improving school outcomes and raising academic standards. In April 2016, the government proposed a reform of general upper secondary education with the aim of raising academic standards and providing a solid preparation for higher education. One objective is to boost the learning of mathematics and natural sciences to reverse the trend of decreasing numbers of students choosing natural science subjects, and the increasing number of general upper secondary graduates needing to take supplementary courses in mathematics and natural sciences to meet entry requirements for tertiary education studies (Leffland, 2014; Productivity Commission, 2014). The higher preparatory examination (the HF programme) will specifically target students that prefer Professional Bachelor's programmes and Academy Profession programmes. A political agreement was reached on 3 June 2016 between the government and a broad group of political parties and the proposal for the legislative change was passed in the Parliament in December 2016. The reform will be implemented as from the 2017/2018 school year. As part of the reform DKK 400 million (EUR 53.8 million) is being allocated in the period 2017-2024, for the continuing professional development of teachers and high school principals.

The primary and lower secondary education school reform from 2014/15 aimed to address low levels of basic skills at the end of compulsory education through changes to the curriculum, and extending the length of the school day. Being accompanied by comprehensive evaluation and action-based research measures the first report published on the reform implementation in spring 2016 shows that the majority of municipalities have delegated the

([18]) Ordered according to adjusted difference for foreign born.

responsibility for implementation of the reform to the schools directly. A recent survey by the Association of Danish Municipalities shows that all municipalities see progress through a more varied and motivating school day (KL 2016). However, a survey by the Danish Union of Teachers identified four in five teachers to complain about insufficient time to prepare classroom lessons (Danmarks Lærerforening, 2016). One study of the Danish National Centre for Social Research identifies increasing well-being of students and increasing interest of the courses taught. However, 82 % of students found the school day too long in 2016 compared to 46 % in 2014 (SFI, 2016).

The Government is taking steps to integrate recently arrived asylum seeker and refugee children into the education system. The tripartite agreement between the Danish government and social partners on Labour Market Integration (March 2016), mentioned above, also concerns the reception of refugee children. It allows municipalities to increase the number of refugees in reception classes from 12 to 15, especially if the pupils have the same language background. The number of reception classes has increased from 24 in 2006 to 288 in 2015, according to the Association of Danish Municipalities estimates. Recent legislation also provides that foreign-born young people — including refugees over the compulsory school age but less than 25 years old — may participate in compulsory school education if it is considered to be the most relevant option to ensure their integration and enable them to enrol in education or find employment in the future (Ministry of Education, 2016a). If refugees are assessed to be ready for the labour market, they must participate in a scheme of combined work placement and labour market training, including learning Danish as a foreign language (Ministry of Immigration and Integration, 2016).

Box 3.3.1: **Selected highlights - Flexicurity**

The Danish labour market is characterized by a high degree of flexicurity and has traditionally been seen as a 'role-model' for other Member States. The combination of security in employment and income - as well as flexibility in relation to hiring and firing of workers - ensures that both employees and employers are willing to take on risks on the labour market. To support this system, the Danish unemployment insurance scheme is relatively generous and active labour market policies are designed to effectively increase the incentives to work. As a result, the labour market in Denmark is very dynamic, with a total of approx. 800,000 job openings (recruitments) each year, to serve a labour force of around 1.7 million persons.

In order to sustain this high level of flexicurity the Danish government has introduced a number of policy measures in recent years. The active labour market policy reform from 2014 aims at shortening the unemployment spells and ensuring sustainable employment with a preventive focus on recently unemployed. In 2015, changes to the content of the active labour market policy and to the organisation of the Public Employment Services (PES) entered into force. The reform aims to provide better and more individualised support for the unemployed, and includes a state-to-municipality reimbursement for active labour market policy services provided to the unemployed, which is gradually reduced the longer the individual is unemployed. This 'stair-case model' reinforces the economic incentives for municipalities to favour effective active labour market policy measures and avoid citizens entering into long-term unemployment.

From 2011 onwards the government has introduced a sequence of labour market policies with the aim to make work pay, and to avoid an increase in the number of social benefit recipients. In June 2016 the unemployment insurance scheme was adjusted towards making it more dynamic and to create more incentives to work. The main purpose is to strengthen the incentive to take on all types of employment during the unemployment benefit period. In the new system the insured unemployed person can use the hours worked doing the unemployment benefit period to extend the benefit period from two years to at most three years by taking on work, or save them for a later application for a new benefit period. This will contribute to labour market stability and benefit both employees and employers.

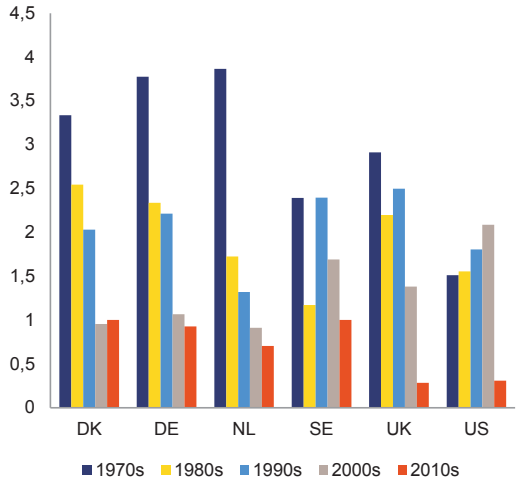
Reforms were also made to the social assistance system with the aim to avoid inactivity traps and stimulate the incentives to work. In October 2016 a social assistance benefit ceiling and a work requirement entered into force. The ceiling sets a limit to the total amount of social benefits to be received and if exceeded, the housing allowances and special support will be reduced. The work requirement implies that those recipients, who take at least 225 hours of work over 12 months, corresponding to six weeks of fulltime work, keep the right to receive the full amount of social assistance benefits.

3.4. INVESTMENT

3.4.1. PRODUCTIVITY DEVELOPMENTS

Over the last 20 years, Denmark's productivity has grown broadly in line with the euro area average. The actual level of productivity in Denmark, as measured by gross value added (GVA) per hour worked, is one of the highest in the EU. In 2015, Denmark had the fourth highest productivity level after Luxembourg, Ireland and Belgium ([19]). Over the past five decades, productivity growth in Denmark has followed a trend similar to that in many other advanced economies, with high productivity growth in the 1970s and 1980s being replaced by lower productivity growth in subsequent decades (Graph 3.4.1).

Graph 3.4.1: **Productivity growth**

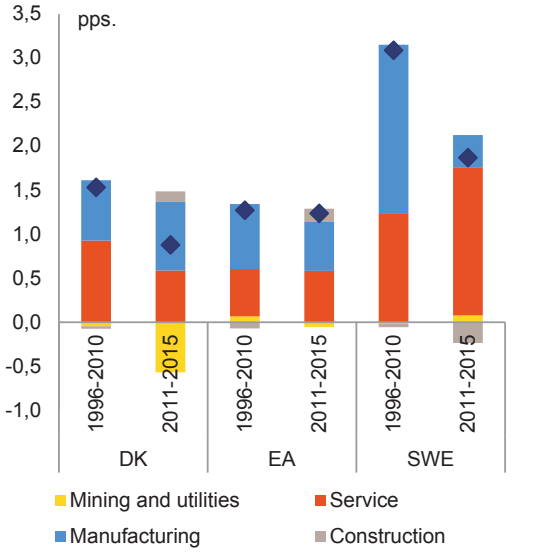


(1) The graph shows average annual growth in GDP per hour worked. 2010s covers the period 2010-2015.
Source: OECD

The Productivity Commission pointed to a number of possible explanations for the relatively weak productivity growth. In 2012-2014, the Productivity Commission presented a number of studies on the weak productivity development in Denmark. It pointed to explanations such as weak competition in the domestically oriented services sector, weaknesses in the Danish education system, weak productivity growth in the public sector and a too large absorption of highly skilled by the public sector (Productivity Commission 2014b).

The decline in oil and gas production in the North Sea dragged down total productivity growth. Focusing on the non-agriculture business sector, a breakdown of productivity developments in different industries reveals that the decline in production of oil and gas in the North Sea, which is categorised within 'Mining and utilities', has had a negative impact on Danish productivity growth in recent years. This is an industry with a very high level of GVA per hour, but with a relatively low share of total employment. Compared to the period 1996-2010, the contribution from the services sector has declined. This sector's contribution in 2011-2015 is broadly line with that in the euro area, while it is strikingly lower than in Sweden. (Graph 3.4.2).

Graph 3.4.2: **Contributions to productivity growth**



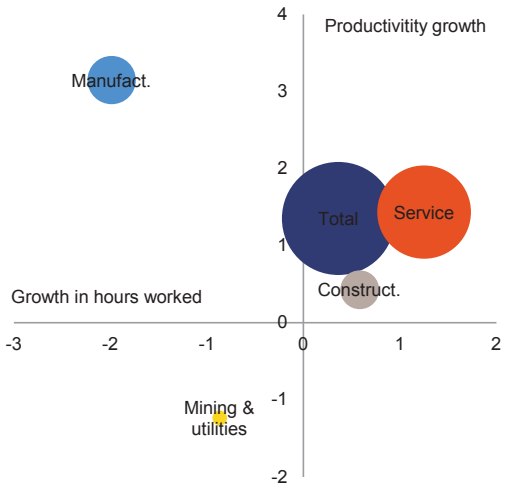
(1) The graph shows the simple average of growth rates and contribution to growth rates in the given period in the non-agriculture business sector. Service is here defined as business sector services excluding real estate.
Source: OECD

Productivity growth has also been dragged down by an inter-sector shift from manufacturing to services. While productivity growth has been high in manufacturing over the last 20 years, this is a sector in decline in terms of hours worked (Graph 3.4.3). Employment growth is strongest in the services sector, where productivity growth has been slower. Overall, it is

([19]) According to Eurostat and measured by nominal (PPS.) labour productivity per hour worked.

estimated that the sectoral shift could have reduced productivity growth by 0.3 pps. per year from 2011-2015 (Jensen and Jorgensen, 2016**).**

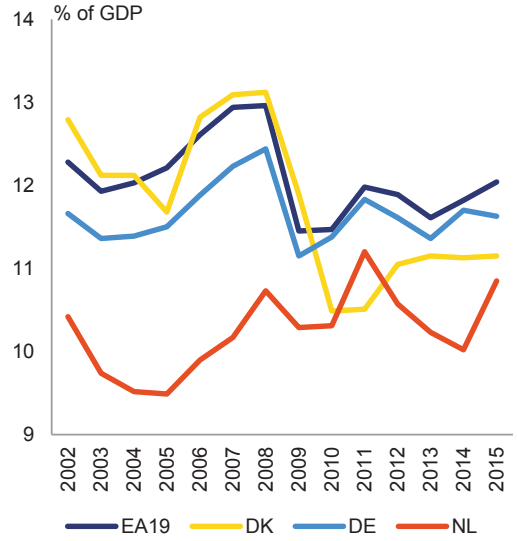
Graph 3.4.3: **Sector dynamics 1995-2015**



(1) The graph compares average annual growth in productivity and hours worked. The bubble size indicates the sector's share of total gross value added in the non-agriculture business sector excluding real estate.
Source: OECD

Weak productivity growth may have been a driver behind the low business investment rate. The low investment level after the financial crisis has been driven by weak business investment (Graph 3.4.4), while public investment, by contrast, rose steadily from 2005 to 2014, and is now well above the EU average. In the longer-term, the decline in the business investment rate may be explained by the weak growth in total factor productivity, together with the sectoral shift from manufacturing to the services sector (Productivity Commission 2014a). A moving out of certain types of investments due to globalisation, as well as cheaper investment goods and a better utilisation of the capital stock due to technological progress, may also be significant drivers (Kramp and Pedersen, 2015). Low investment levels in Denmark and in the euro area measured as a proportion of GDP is a long-term trend. It is difficult to assess, therefore, the degree to which the current level of business investment is a continuation of the long-term decline, or if it is more related to the current cyclical position, with suppressed demand. Weak investment can nevertheless point to a downside risk for future economic growth for Denmark.

Graph 3.4.4: **Business investment to GDP ratio**



Source: Eurostat

High differences in mark-ups between manufacturing and services suggest lack of sufficient competition in the latter. Mark-ups represent the difference between the cost of a product or service and the price charged for it. According to a study from the Danish Ministry of Finance, the median mark-up for Danish private services in 2002-2012 was 11.9 %, against a corresponding value of 3.2 % for the manufacturing sector (Ministry of Finance, 2016). This suggests a lack of competition in the services sector, which reduces pressures for innovation, efficiency and, ultimately, productivity growth. In this respect, the domestically-oriented service sectors shielded from foreign competition have been identified as important (Productivity Commission 2014b, see Section 3.4.3).

The previous government proposed a growth plan in August 2016, including a series of measures aimed at improving the productivity of Danish businesses. The plan proposed an increased use of international standards, which would make it easier for foreign firms to operate in Denmark, and thus increase competition, notably in construction. A proposal for a new independent Danish Productivity Board was passed by the Danish Parliament on 19 December 2016. The Board took up office in January 2017 and will follow in the footsteps of the temporary Productivity Commission that worked from 2012-

2014 ([20]). The new and permanent board will be tied to the Danish Economic Councils, an independent economic advisory body, and will continue the work of its predecessor in promoting Danish productivity growth by providing policy advice. The new Danish Productivity Board also represents Denmark's answer to the call by the EU to create National Productivity Boards across Europe.

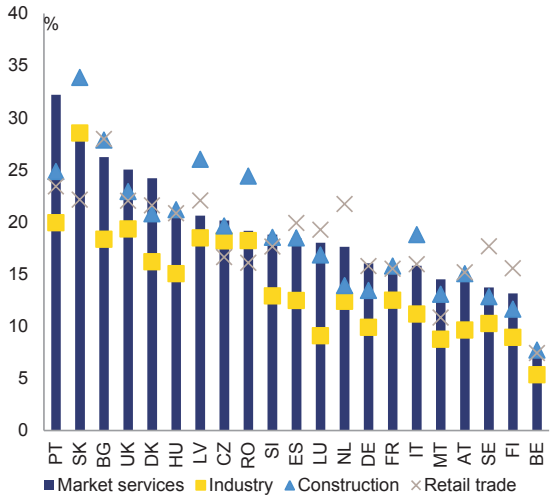
3.4.2. BUSINESS ENVIRONMENT

Denmark continues to provide a sound business environment for SMEs. The country performs very well in Small Business Act areas related to internationalisation, skills and innovation, and 'responsive administration'. Since 2008, substantial progress has been made in implementing the Small Business Act, notably as regards reducing administrative burden.

There is significant business dynamism in Denmark which can be identified from the churn rates (the sum of the birth and death rates of enterprises). Even though enterprise birth rates have been in line with the EU average (and actually exceeded it in 2014) ([21]), enterprise death rates are higher ([22]). This results in survival rates that are below the EU average after one and three years of the creation of the firm ([23]), although five-year survival rates in 2014 were above the EU average (DK: 45.7 %; EU average: 44.5 %). Denmark is still below countries such as Austria (53.8 %), the Netherlands (51.5 %) and Sweden (56.7 %).

([20]) The Confederation of Danish Industry has found that, in two years, around a third of the temporary Productivity Commission's recommendations have been at least partially implemented.
([21]) 2014: DK (11.1 %), EU (10.7 %). Data: Eurostat.
([22]) 2013: DK (11.0 %), EU (9.8 %). Data: Eurostat.
([23]) 2014: Survival rates after 1 year (DK: 73.6 %; EU except Greece and Ireland: 83.1 %); Survival rates after 3 years (DK: 52.3 %; EU: 60.1 %).

Graph 3.4.5: **Churn rate (birth rate + death rate) of enterprises by sector, 2011**



Source: "Science, Research and Innovation Performance of the EU" (2016)

Danish start-ups are characterised by low start-up size, low start-up ratios and low net job creation (Calvino et al., 2015). Denmark is a small country, so it is not unusual that Denmark has one of the smallest average sizes at entry, and much lower than in many other Member States. Start-up ratios in Denmark are significantly lower than in other Member States such as Spain, Sweden, the Netherlands and Italy. ([24]) In Denmark, the net job creation by entrants that survive at least three years represents around 2.5 % of overall employment, lower than in other Member States such as Spain, Italy, Hungary and Sweden.([25])

Scaling-up in Denmark is identified as a challenge for SMEs. Denmark has many successful companies, but all of the 20 largest companies are over 30 years old, while smaller successful companies have not been incentivised or able to expand. Previous programmes were in place to support start-ups, but did not address growth. The Government started an initiative on scale-ups in order to address the problem of slow growth. 'Scale-Up Denmark' works through private organisations but is financed by public funds (EUR 22 million), half of which come from the five Danish regions and half from the EU

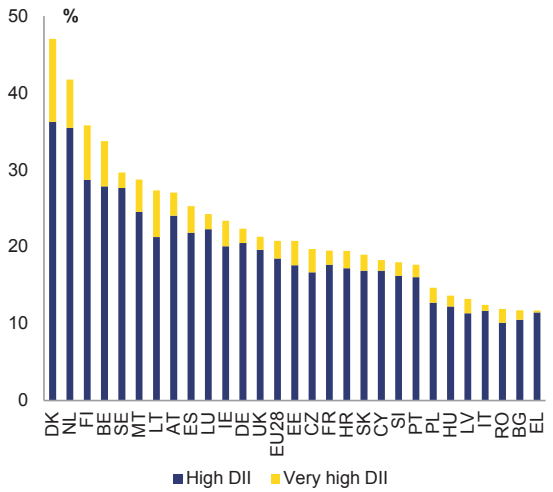
([24]) Start-up ratio: measured as the number of entrants relative to the country's total employment.
([25]) For every existing 100 jobs in the economy in any given year, the start-ups which are born in that year will add 2.5 new jobs within the following three years

(ERDF). It works together with established businesses and makes use of their expertise to guide new firms looking to expand through training, mentoring and help to access finance. Their work is carried out through hubs based on field of business rather than region, which allows for more specialised support. Scale-up Denmark is currently the largest Scandinavian accelerator programme. The objectives of this programme are (1) to increase the number of high-growth start-ups; (2) to provide established companies with innovation opportunities; (3) to build next-generation serial innovators; and (4) to develop self-sustaining ecosystems that persist without public funding.

Danish firms continue to have one of the highest digital intensities in the EU. When measured against the twelve key digital technologies covered by the Digital Intensity Index, more than 45 % of companies in Denmark are highly or very highly digitised, twice the European average of around 22 %. Denmark is also one of the top three Member States for the adoption of ICT-related business processes: the international Digital Economy and Society Index (I-DESI) indicator covering these issues shows Denmark is close to US levels. The Danish government has assigned EUR 5.6 million to a business partnership focusing on advanced manufacturing for SMEs (so-called MADE project, which will run from 2016 to 2019). The purpose of the partnership is to boost the level of automation and digitisation among the small and medium-sized manufacturing companies in Denmark. As part of the business partnership, manufacturing companies can apply for funding to help analyse how they can implement automation and digital solutions into their production processes. The Danish Business Authority manages the business partnership, and members of the business partnership include industry stakeholders as well as the Danish GTS Advanced Technology Group ([26]). A total of 134 manufacturing companies from all over the country applied and 53 were selected.

([26]) GTS Advanced Technology Group is a network of approved technical service providers

Graph 3.4.6: **Digitisation of enterprises**



(1) Proportion of enterprises with high or very high digital intensity index (DII) by Member State, 2015
Source: European Commission

The Danish authorities have drawn up a national action plan on regulated professions. In its national action plan, Denmark announces changes affecting about 40 regulated professions. These changes vary in their scope and likely impact. They cover the following types of measures: abolition of the scheme, change of rules and requirements, change in reserved activities, change of administration, further digitisation, simplified guidance, modernisation, merger of schemes and further regulation.

Public procurement

The Public Procurement Act has been revised with the aim of enhancing competition. The Public Procurement Act, which implemented the EU Procurement Directive and took effect on 1 January 2016, gathers all procurement legislation into one single legal act. It sets out the overall framework for all public procurement and makes requirements upon potential bidders more flexible. For instance, all the requested labour-related documentation of the company now only needs to be submitted by the company which is awarded the tender. Furthermore, the Public Procurement Act requires that a contracting authority provides a reason if a tender is not divided into smaller lots. Further improvement in the public procurement process for SMEs is needed on collective bidding. The adopted Public Procurement Act needs to be fully implemented, in particular by municipalities

genuinely taking into the account the elements that favour SMEs.

3.4.3. COMPETITION IN THE SERVICES SECTOR

More competition in the services sector would increase productivity and economic growth. Services account for more than 60 % of Danish exports in value added terms. Services' share of total inward investment is also high, indicating relatively low restrictiveness in services trade. However, Denmark can improve efficiency by enhancing competition in services markets, particularly by focusing on the remaining horizontal measures that affect all types of services as well as certain service sectors where specific restrictions remain, notably retail trade and construction as well as wholesale and transport services.

Retail sector

Market concentration in the Danish retail sector is one of the highest in Europe. Prices are the highest in the EU for categories such as food and non-alcoholic beverages, footwear, clothing and consumer electronics, and the difference to the price levels of other Nordic markets such as Sweden and Finland has been increasing.

The Danish grocery market remains concentrated with the three biggest grocery chains representing 84 % of the market (Ministry for Business and Growth, 2015**)**. The market leaders have maintained their strong position offering store models such as hypermarkets and soft-discount shops. Sales in more expensive channels such as supermarkets have been declining. The hard-discount model, represented exclusively by foreign retail chains, has also been losing market shares.

The store-based non-grocery sector faces strong competition from e-commerce. Internet retailing has been growing at a double-digit rate (Euromonitor 2015). The market recently saw the entry of a big format omni-channel electronics retailer with a strong focus on price and service quality, which could help competition in this segment.

The entry and expansion of new competitors with store-based operations would be eased by the planned liberalisation of planning regulations. A draft reform of the Planning Act, on which political agreement was eventually reached in June 2016, is planned to be adopted and come into force in 2017. The Planning Act reform concerns the removal of size caps for non-grocery stores and raising them to some extent for grocery stores. In their current form, the amendments are less ambitious than the original proposal. The maximum surface threshold for grocery stores in small local centres will increase from 1 000 m^2 to 1200m^2, while the original proposal envisaged increasing it to 2 000m^2. However, the proposal to increase the limit for grocery stores in city centres and district centres from 3 500 m^2 to 5 000 m^2 is maintained. Furthermore, the government has proposed allowing municipalities to designate areas which would provide space for shops with surface areas up to 3900 m^2 which cannot easily be located in the city centre and to expand the already existing ones (according to the current rules, planning for new areas of this type is possible only in the cases of Copenhagen and Aarhus). The proposed amendments may significantly ease establishment conditions for non-grocery stores, but they do not go very far in proposing more liberal conditions for grocery stores.

The proposed liberalisation of the Planning Act aims to strengthen municipalities' ability to take local issues into consideration in retail planning. In order to ensure that the legislative changes, once adopted, are correctly implemented, the government intends to provide guidelines for local authorities in order to ensure that competition is taken into account in planning objectives and to clarify establishment rules for e-commerce companies with showrooms. The government also intends to monitor implementation on an annual basis and provide guidance to municipalities on the application of the new rules.

Construction

Denmark has taken positive action on its construction strategy. As regards the implementation of the strategy 'Towards a stronger construction sector in Denmark', in 2016 the Danish government proposed amendments to the Building Regulation to simplify the building permit procedure. Furthermore, the mapping of

national standards in building regulations was finalised in 2015, and it is now being assessed whether these can be abolished or replaced by European standards. Further positive steps include the action taken on building permits and standards, and additional action such as updating the law on electrical installations to increase the use of international and European standards (adopted in 2015). These steps could ensure that Danish requirements imposed on service providers in the construction sector, which are currently one of the most restrictive in the EU, are liberalised further.

Wholesale trade

Denmark is one of the Member States where wholesale trade plays the greatest role in the economy in terms of employment, turnover, value added and linkages to other sectors. It is also characterised by higher price levels and price increases than in other Member States, notwithstanding its relatively low concentration (Dachs et al., 2016). However, as pointed out in the Productivity Commission's report on competition, internationalisation and regulation, strong vertical integration makes the wholesale sector more concentrated de facto than the numbers suggest, as the high concentration in retail trade and other sectors to which the wholesale sector is linked spills over into the wholesale sector as well (Productivity Commission, 2014a). The Productivity Commission identified it as one of the sectors with the largest productivity gaps in relation to other economies, while the Danish Economic Councils (2010) estimated that total factor productivity in wholesale trade could rise by 7 % – more than in any other sector analysed – by reallocating productive resources from the least to the most productive wholesalers.

Taxi services

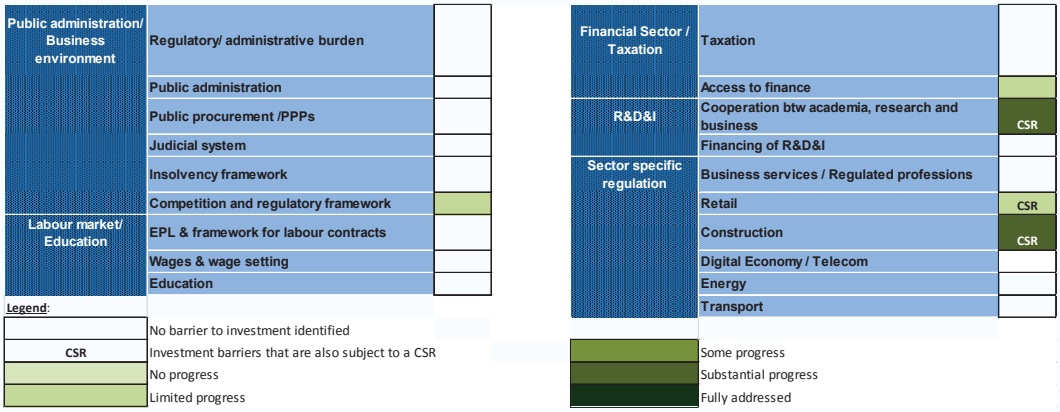
Measures have been announced to achieve a single market for taxis in Denmark. The Productivity Commission (2014a) recommended the removal of restrictions on the number of taxi licences or on the basis of geographical entities, in order to enable more competition. It also recommended more efficient regulation of taxi fares. The government has outlined its intentions to reform the taxi sector by abolishing the limit on the number of taxi licences, current requirements on the own capital of operators and the right of municipalities to decide if more taxis are needed. Moreover, currently restricted operation radii will be replaced by a nationwide area of operation for all licensed drivers. It will be for each operator to decide where in Denmark to operate, during which hours, and which services it will offer (Ministry of Transport, Building, and Housing, 2016).

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

Macroeconomic perspective

The investment level in Denmark remains below the EU average. Investment as a share of GDP was broadly at EU average levels until 2008, but it took a severe hit in the crisis and has remained below the EU average since then even if total investment growth has been moderately positive for the last five years. In particular equipment and machinery, as well as construction investments are lagging behind. The investment level is expected to gradually pick up in the coming years, as the maturing recovery leads to higher capacity utilisation. Robustly growing house prices are forecast to provide further impetus for dwellings investment in the coming years. Public investments, supporting the economy during the crisis, reached a historically high level in 2014, but they are expected to continue declining gradually towards levels more in line with historical averages.

Assessment of barriers to investment and ongoing reforms



Overall, barriers to private investment in Denmark are relatively moderate as confirmed by the European Commission assessment (European Commission, 2015b). Some reforms are envisaged to ease restrictions in the retail sector and increasing competition in the construction sector (Section 3.4.3); while others have been adopted to further foster the cooperation between academia, research and business (Section 3.5.1). These measures could support investment and productivity growth in the medium term. Nevertheless, Denmark faces certain barriers to investment, in particular in productivity developments in the domestic services sector have been particularly weak and infrastructure investment needs are high (Section 3.5.3).

Main barriers to investment and priority actions underway

1. Among the main barriers to investment, planning restrictions in the retail sector remains a key aspect as well as existing building regulations and requirements in the construction sector. The government has announced further liberalisation of retail planning restrictions, proposed amendments in the Building Regulation to simplify the building permit procedure and taken steps to increase competition in the construction sector (such as modernisation of the law on electrical installations to increase the use of international and European standards).

2. Collaboration between public research and businesses could be further improved. Even though R&D spending relative to GDP is high in Denmark, it is not translated adequately to economic growth, productivity and investment. There are barriers to the utilisation of university research, such as complexity in the regulatory system that regulates cooperation between the universities and the business sector. The government has taken several initiatives in this area, including

(Continued on the next page)

Box (continued)

setting up a working group between universities and the business sector and launched an Innovation Fund that will also support investments and long-term partnerships.

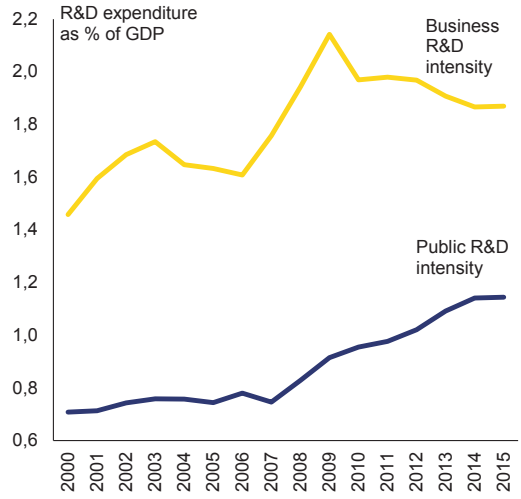
3. Denmark faces investment needs in its transport infrastructure, stemming on the one hand from projected faster growth of freight and passenger transports than of the overall economy, on the other hand from a need to meet higher climate, security and performance requirements as well as higher expectations from consumers. The pressure is particularly high on the transport systems in and around greater Copenhagen, where further investment in public transport infrastructure to improve connectivity could also help to alleviate some of the constraints caused by the housing shortage. Emerging bottlenecks in the supply of labour to the construction sector may hold back infrastructure investment.

3.5. SECTORAL POLICIES

3.5.1. RESEARCH AND INNOVATION

Denmark has already reached the national 2020 R&D intensity target of 3 % of GDP ([27]). However, resources for public research were reduced in 2016. Denmark's R&D intensity has developed positively from 2.51 % of GDP in 2007 to 3.03 % of GDP in 2015. Despite the reduction of investment in public research in 2016, Denmark´s public R&D intensity is expected to remain above 1 % of GDP according to the Danish Agency for Science, Technology and Innovation (DASTI), after having reached 1.14 % of GDP in 2015.

Graph 3.5.1: **Denmark - development of business R&D intensity and public R&D intensity, 2000-2015**



(1) Business R&D intensity: Business enterprise expenditure on R&D (BERD) as % of GDP.
(2) Public R&D intensity: Government intramural expenditure on R&D (GOVERD) plus higher education expenditure on R&D (HERD) as % of GDP.
(3) Business R&D intensity: Break in series between 2007 and the previous years.
(4) Public R&D intensity: Breaks in series between 2002 and the previous years and between 2007 and the previous years.
Source: Eurostat

Private R&D investment as a percentage of GDP was still one of the highest in the EU in 2015. There has been a significant increase in the intensity of Business Enterprise R&D Expenditures (BERD) between 2007 and 2009 from 1.76 % to 2.14 % of GDP, but since then there has been a downward trend towards 1.87 % of GDP in 2015 (see Graph 3.5.1).

The human resources base in science and technology has successfully expanded but the availability of appropriate skills and competences to meet current needs of the labour market is a challenge. Eurostat reports an increase in new graduates in science and engineering per thousand population aged 25-34 between 2007 and 2014 with Denmark ranking third in the EU. The number of researchers per thousand of employment also showed a positive trend. Additionally, researchers (FTE) have been absorbed by the business sector to a remarkable extent with Denmark ranking one of the best in the EU in this respect in 2015. Despite the significant progress already achieved, industry has expressed a concern that in some sectors the right skills and qualifications are missing such as ICT and engineering capabilities. Faced with these challenges, the Government strategy launched in 2015 is designed to promote *"Growth and development in the whole of Denmark*"

The growing shortage of ICT professionals reported in Europe is also an issue for Denmark. In particular, the study "e-skills for jobs in Europe: measuring progress and moving ahead" estimated that by 2017 there will be 14 000 unfilled vacancies for ICT professionals, a number which is expected to rise towards 19 000 vacancies by 2020 (Hüsing et al., 2015). In the spring of 2016 the national authorities launched a national mapping exercise of companies' need for digital skills. A similar mapping exercise but at the regional level was performed by the Danish Growth Council in December 2016. So far, the mapping has shown variations across the five regions in regards to the demand for digital skills which is linked to the business structure of the region. Also, two previous mapping activities targeted business needs and research and education in the field of cybersecurity ([28]), and future needs for digital skills. Moreover, the Danish government launched two partnerships promoting digitisation in SMEs in specific industries involving the Danish Business Authority, industry associations and different stakeholders.

([27]) Current Eurostat data are expected to be revised following Statistics Denmark's revision of the National Accounts on 15 November 2016.

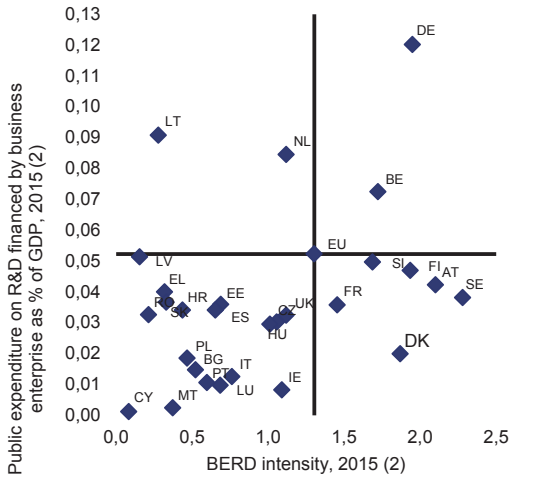
([28]) Survey of knowledge and training in cyber and information security at Danish educational and research institutions (2015)

Denmark is an Innovation Leader according to the European Innovation Scoreboard 2016 but Community Innovation Survey (CIS) data show that some indicators have worsened. Though performance relative to the EU has increased from 26 % above the EU average in 2008 to 34 % in 2015, CIS 2014 data recently released in 2017 by Eurostat points to fall in performance for some indicators relative to CIS 2012 results. Notably this concerns a decrease in the share of SMEs that are product/process innovators, those that are organisational/marketing innovators, and the share of innovative SMEs collaborating. Additionally, the share of innovative enterprises is only slightly above the EU-average.

There is a need for stronger links between the players in the R&I system to foster knowledge transfer and firms' performance. An analysis conducted by the Ministry of Science and Higher Education showed that on average productivity is 15 per cent higher among Danish R&D-performing firms that cooperate with universities and public research institutions than for R&D-performing firms that do not engage in such cooperation.([29]) Public expenditure on R&D financed by business as a percentage of GDP has notably decreased from 0.031 % of GDP in 2009 to 0.020 % of GDP in 2015, with Denmark ranking only 20th within the EU (see Graph 3.5.2). Moreover, as discussed in the European Commission's Country Report on Denmark (2016), obstacles to the utilisation of university research include complexities in the regulatory system especially concerning collaboration efforts between universities and businesses, and sometimes different views regarding the pricing of intellectual property rights.

The challenge of incentivising academia-business collaboration has also been addressed by the European Commission's Country Report on Denmark (2016). In order to act on this development, the Danish Government intends to regard innovation and business collaboration as an integral part of research activities which has led to a reorganization of the Ministry of Higher Education and Science in 2017. Importantly, DASTI and Universities Denmark will jointly form a working group to create a guideline advising universities on how to legally engage in strategic partnerships with industry which involve state aid. In parallel, the role of the Research and Technology Organisations (RTOs) will be strengthened. The *Innovation Fund Denmark* launched in 2014 will also support investments and long-term projects/partnerships that involve research, technology, demonstration and market development activities, and also SMEs and entrepreneurship through the *InnoBooster* program.

Graph 3.5.2: **Public expenditure on R&D financed by business enterprise as % of GDP (1) versus BERD intensity (business enterprise expenditure on R&D as % of GDP)**



(1)Public expenditure on R&D financed by business enterprise does not include financing from abroad.
(2)BE, LU, AT, SE: 2013; BG, DE, IE, ES, FR, IT, CY, PT, EU: 2014.
Source: Eurostat

Relatively low survival rates also affect innovative companies. On average, the survival rate of the companies in the portfolio of the Danish Innovation Incubators is 49 % after 5 years which may reflect the fact that the Danish Innovation Incubators generally take on high risk (DASTI). Hence, despite being the top performer in the EU according to the World Bank's 2016 'Ease of Doing Business' Rank, Danish companies seem to face some challenges in the post-entry phase to the markets. According to the Global Competitiveness Index 2016-2017, the 'most problematic issues for doing business' were related to tax rates and regulations, to restrictive labour regulations, access to financing and inefficient government bureaucracy (see also Section 3.4.2 on business environment).

([29]) Economic effects of business collaborative research with public knowledge institutions (2011).

3.5.2. ENVIRONMENT AND ENERGY POLICY

Denmark is almost on track to meet its 2020 greenhouse gas reduction targets. According to the latest national projections and taking into account existing measures, emission in the sectors not covered by the EU Emissions Trading System will fall by 19 % between 2005 and 2020, compared to a target of 20 %. Denmark will consequently need to implement additional policies to further reduce its emissions, or to make use of the flexibility mechanism.

Denmark is in the process of establishing a new broad political agreement on energy and climate policy that will set out objectives for 2030. This climate plan, due in 2017, will bring together the government's initiatives on climate change and present cost-effective strategies to reach its 2030 goals. The government has already announced that it will work towards meeting 50 % of its energy needs using energy from renewable sources in 2030. Denmark has set a long-term goal to transition to a low-carbon, fossil-fuel free society by 2050. Denmark's national target will put it in line with the EU-wide target for an 80-95 % reduction of greenhouse gases by 2050.

Though Denmark is on track towards reaching the 2020 renewable energy target, the Danish energy mix is still dominated by fossil fuels. In terms of gross inland energy consumption (2014), oil accounts for 39 %, renewable energy for 29 %, natural gas for 17 %, and coal for 14 %. 56 % of gross electricity generation comes from renewable energy sources, and 35 % from coal. At 30,6 % in 2015, Denmark has already reached its 2020 target for the share of renewable energy in final energy consumption (30 %). Progress is the most noticeable in electricity generation (biomass and wind energy) and in heating (largely biomass). The main way of supporting renewable energy in Denmark has been through the PSO scheme, but future support of renewable energy will be financed from the State budget (see section 3.1).

Within the EU, Denmark is one of the least energy-intensive economies. Denmark reduced its primary energy consumption by -0.2% from 16.55 Mtoe in 2014 to 16.51 Mtoe in 2015. Final energy consumption increased by 3% from 13.52 Mtoe in 2014 to 13.94 Mtoe in 2015. Even if Denmark has already achieved levels of primary and final energy consumption which are below the indicative national 2020 targets (17.4 Mtoe in primary energy consumption and 14.4 Mtoe in final energy consumption) it would need to make an effort to keep these levels until 2020. The country has recently set a more ambitious 2020 target for energy efficiency. Denmark remains the Member State with the highest implicit tax rate on energy.

Available electricity interconnection capacity with Germany, notably on the DK1-DE interconnector, needs to be increased in order to facilitate cross-border trading. A 2014 study([30]) estimated that maintaining a minimum of 1 000 MW of cross-border capacity could bring economic benefits of around EUR 40 million per year. Current capacity limitations not only restrict cross-border trading, but can also result in costs associated with curtailing generators in order to manage the limitation in the network. Furthermore, the current national arrangements for congestion management and bidding zone definition in central Europe do not necessarily accurately reflect actual congestion, leading to increasing limitations on cross-border flows of electricity. The issue lacks a joint regional solution agreed by all affected neighbours.

In 2016, Denmark and other North Sea countries agreed on a political declaration. The aim is to facilitate further cost-effective deployment of offshore renewable energy, in particular wind, and support further interconnection between North Sea countries ([31]).

On gas, several infrastructure projects aim to address the challenge of security of gas supply caused by expected decreasing production from North Sea gas fields. These projects are the (i) upgrade of capacity at the Ellund interconnection point between Denmark and Germany (completed in august 2016), (ii) the Project of Common Interest (PCI) Poland-Denmark interconnection "Baltic Pipe" (feasibility study phase), (iii) the Tie-in project connecting Denmark and Norway (feasibility study phase), and (iv) the PCI project

([30]) Scientific study jointly commissioned by both Transmission System Operators (TenneT TSO GmbH and Energinet.dk)

([31]) Belgium, Denmark, France, Germany, Ireland, Luxembourg, the Netherlands, Norway and Sweden.

Gothenburg LNG Terminal, which will decrease gas quantities dedicated to exports to Sweden.

3.5.3. TRANSPORT INFRASTRUCTURE

Large scale infrastructure projects support growth in the Danish construction sector and are expected to continue in the coming years. Investment in infrastructure grew from 0.5 % of GDP to 0.9 % of GDP between 2008 and 2014. A number of flagship projects such as the Copenhagen metro and the Fehmarn Belt Tunnel, as well as already build and planned investments in transport infrastructure of DKK 100 billion (EUR 13.5 billion) are underpinning growth in the civil engineering sector. EU funds worth EUR 658.7 million have also been earmarked for transport (INEA). According to the EU Transport Scoreboard, the Danish public is among the most satisfied in the EU as regards the quality of transport infrastructure in Denmark, and is becoming more satisfied over time. This does not apply to the quality of port infrastructures, where there has been a declining satisfaction trend.

Nevertheless, investment needs persist in transport infrastructure. Like many other Member States, Denmark is faced with considerable investment needs in its transport infrastructure, stemming both from projected growth of freight and passenger transports that is higher than growth of the overall economy, and from a need to meet higher climate, security and performance requirements, as well as higher expectations from consumers. The pressure is particularly high on the transport systems in and around greater Copenhagen. To ensure proper funding and coordination of investment projects, a multimodal, rolling investment programme for land transport until 2020 was put in place by the government in 2009, combined with a dedicated Infrastructure Fund to secure financing.

3.5.4. DIGITISATION

Denmark has maintained its high coverage of fixed broadband and next generation access networks, available to 99 % and 93 % of homes, respectively. Despite improvements in upload capacity, in line with the aim of the Danish Government action plan to ensure 100 % coverage of 30 Mbps upload speeds, next generation access (NGA) networks in rural areas is only available to 59 % of households - 4 percentage points higher than last year. This is well below the national figure of 93 % but well above the EU average of 40 %. There was a significant increase of subscriptions to high-speed broadband, accompanied by an increase in mobile broadband uptake. To promote access to digital opportunities also outside urban areas, the Danish government has committed to further enhance network quality in rural areas. For this reason, Denmark will allocate DKK 200 million (approximately EUR 27 million) of public funds between 2016 and 2019.

In the area of digital skills, an investment of DKK 500 Million (approximately EUR 67 million) have been allocated in a National Investment plan for ICT and Digital Skills. This is a 5-year-project launched in 2012 with a focus in four particular areas, namely (a) develop the market for digital learning resources; (b) gain more knowledge on ICT-based learning; (c) ensure efficient infrastructure in schools and support the use of ICT and digital learning resources through networking and (d) collaboration and knowledge sharing between teachers (see also Section 3.3.2).

The adoption of digital technologies is an important driver of labour productivity growth. Danish businesses do exploit the benefits and possibilities offered by digital technologies with 27 % of SMEs selling online and 18 % of their turnover coming from this type of commerce. As a matter of fact, almost half of all Danish enterprises (47 %) - and 45 % for SMEs - have an electronic information sharing system.

In Denmark, adoption rates of eBusiness technologies, like eInvoices and Cloud services are one of the highest in the EU. The Danish government launched two partnerships promoting digitisation in SMEs in specific industries (section 3.5.1.).

ANNEX A
Overview table

Commitments	Summary assessment([32])
2016 Country-Specific Recommendations (CSRs)	
CSR 1: Respect the medium-term budgetary objective in 2016 and achieve an annual fiscal adjustment of 0.25 % of GDP towards the medium-term budgetary objective in 2017.	CSRs related to the compliance with the Stability and Growth Pact will be assessed in spring once the final data will be available.
CSR 2: Enhance productivity and private sector investment by increasing competition in the domestic services sector, in particular retail and construction and to incentivise the cooperation between businesses and universities. Enhance productivity and private sector investment by increasing competition in the domestic services sector, in particular retail and construction … … and to incentivise the cooperation between businesses and universities	Denmark has made **some progress** in addressing CSR 2 **Some progress** has been made in enhancing productivity and private sector investment. On facilitating market access in retail: in January 2017 the government presented a proposal to the Parliament to amend the Planning Act. However, since this proposal has not yet been adopted, the assessment is limited progress. There was some progress on facilitating market access in construction, following the mapping of standards in 2015, the updating of the law on electrical installations in 2015, and the proposed amendments to the Building Regulation to simplify procedures. **Some progress** has been made on incentivising cooperation between businesses and universities: There is some initiative from the national authorities to strengthen the links between universities and the private sector through dialogues involving both parties, new guidelines and specific programmes that stimulate collaboration.

([32]) The following categories are used to assess progress in implementing the 2016 country-specific recommendations:
No progress: The Member State has not credibly announced nor adopted any measures to address the CSR. Below a number of non-exhaustive typical situations that could be covered under this, to be interpreted on a case by case basis taking into account country-specific conditions:
- no legal, administrative, or budgetary measures have been announced in the National Reform Programme or in other official communication to the national Parliament / relevant parliamentary committees, the European Commission, or announced in public (e.g. in a press statement, information on government's website);
- no non-legislative acts have been presented by the governing or legislator 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 that would need to be taken (unless the CSR explicitly asks for orientations or exploratory actions), while clearly-specified measure(s) to address the CSR has not been proposed.

Limited progress: The Member State has:
- announced certain measures but these only address the CSR to a limited extent;

and/or
- presented legislative acts in the governing or legislator body but these have not been adopted yet and substantial non-legislative further work is needed before the CSR will be implemented;
- presented non-legislative acts, yet with no further follow-up in terms of implementation which is needed to address the CSR.

Some progress: The Member State has adopted measures that partly address the CSR
and/or
the Member State has adopted measures that address the CSR, but a fair amount of work is still needed to fully address the CSR as only a few of the adopted measures have been implemented. For instance: adopted by national parliament; by ministerial decision; but no implementing decisions are in place.
Substantial progress: The Member State has adopted measures that go a long way in addressing the CSR and most of which have been implemented.
Full implementation: The Member State has implemented all measures needed to address the CSR appropriately.

	These include notably the efforts of the Danish Agency for Science and Technology together with Universities Denmark, a more prominent role given to the research and technology organisations, and the new Innovation Fund Denmark created with the ambition of supporting investments and long-term projects/partnerships that involve research, technology, demonstration and market development activities. Moreover, the Ministry of Higher Education and Science in June 2016 renegotiated the university performance contracts for 2015-2017 which introduced an additional performance targets on regional knowledge transfer activities.
Europe 2020 (national targets and progress)	
Employment rate target set in the 2013 NRP: 80 %	**76.5 % (2015)** The employment rate has increased moderately, from 75.6 % in 2013 to 76.5 % in 2015. It remains, however, below pre-crisis levels (79.7 % in 2008). In recent years, Denmark has adopted a series of active labour market reforms with the purpose of promoting incentives to work. These policy measures aim to close the 3.5 pps. gap to Denmark's Europe 2020 employment rate target of 80 %.
R&D target: 3 %	**3.03 % (2015)** The 3 % target has been reached and even surpassed. Denmark's R&D intensity has shown a positive trend, from 2.51 % in 2007 to 3.03 % in 2015. Public R&D intensity has steadily increased between 2007 and 2013, stabilising in 2015 at above 1 % of GDP (1.14 %). Denmark is therefore the EU Member State that invests the most in R&D. Business R&D intensity has stabilised at around 2.0 % of GDP since 2010.
National Greenhouse gas (GHG) emissions target: -20 % in 2020 compared to 2005 (in non-ETS sectors)	**2020 target**: -20 % According to the latest national projections and taking into account existing measures, emission in the sectors not covered by the EU Emissions Trading System will fall by 19,2 % between 2005 and 2020, compared to a target of 20 %. Denmark will consequently need to implement additional policies to further reduce its emissions or make use of flexibility mechanism. **Non-ETS 2015 target**: -8 %. Based on proxy data, the non-ETS greenhouse gas emissions between 2005 and 2015 decreased by 15 %; this is 7 pps. below the 2015 target set by the Effort Sharing

	Decision.
Renewable energy target: 30 %	**30.6 % (2015)([33])** With a 30.6 % share of renewable energy in final energy consumption in 2015, Denmark is likely to have met its 2020 target of 30 %. Progress is most noticeable in electricity generation (biomass and wind energy) and in heating (largely biomass).
Energy efficiency target. Denmark's 2020 energy efficiency target is 17.8 Mtoe expressed in primary energy consumption (14.8 Mtoe expressed in final energy consumption.)	**16.7 Mtoe (2014)** Denmark reduced its primary energy consumption by -0.2 % from 16.55 Mtoe in 2014 to 16.51 Mtoe in 2015. Final energy consumption increased by 3 % from 13.52 Mtoe in 2013 to 13.94 Mtoe in 2014. Even if Denmark has already achieved levels of primary and final energy consumption which are below the indicative national 2020 targets (17.8 Mtoe in primary energy consumption and 14.8 Mtoe in final energy consumption) it would need to make an effort to keep these levels until 2020.
Early school leaving target: <10 % (Less than 10 % school drop-out rates of the population aged 18-24)	**7.8 % (2015)** The <10 % target has been reached and even surpassed. The school drop-out rate of the population aged 18-24 has been improving since 2008 when the rate was 12.5 % and stood at 7.8 % in 2015.
Tertiary education target: >40 % (At least 40 % of the population aged 30-34 having completed tertiary education)	**47.6 % (2015)** The >40 % target has been reached and even surpassed. The share of the population aged 30-34 which has successfully completed tertiary studies has increased from 39.2 % in 2008 to 47.6 % in 2015.
Target on the reduction of population at risk of poverty or social exclusion in number of persons: reduce the number of people in households with low work intensity by 22 000 towards 2020.	From 2008 to 2015 the number of people living in low work intensity households increased by 35 % (from 347 000 to 470 000), and the national Europe 2020 target in the area of poverty and social exclusion is far from being reached. This underlines the importance of better inclusion of people on the furthest margins of the labour market in order to prevent long–term consequences for social inclusion and cohesion. To address this, the Danish government has introduced a strategy to progress towards its ten goals on social mobility, which are designed to give direction and greater emphasis to social policy.

([33]) Renewable energy shares for 2015 are approximations and not official data, reflecting the available data (04.10.2016). See the Öko-Institut Report: Study on Technical Assistance in Realisation of the 2016 Report on Renewable Energy: http://ec.europa.eu/energy/en/studies.

ANNEX B
MIP Scoreboard

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

			Thresholds	2010	2011	2012	2013	2014	2015
External imbalances and competitiveness	Current account balance, (% of GDP)	3 year average	-4%/6%	4,3	5,6	6,5	6,9	7,7	8,8
	Net international investment position (% of GDP)		-35%	12,9	28,0	36,3	37,8	52,5	39,0
	Real effective exchange rate - 42 trading partners, HICP deflator	3 years % change	±5% & ±11%	0,2	-2,5	-7,8	-2,6	-1,2	-1,5
	Export market share - % of world exports	5 years % change	-6%	-10,3	-13,4	-17,1	-17,2	-15,7	-8,8
	Nominal unit labour cost index (2010=100)	3 years % change	9% & 12%	10,3	4,4	0,6	2,9	4,1	4,9
Internal imbalances	Deflated house prices (% y-o-y change)		6%	0,3	-4,0	-5,0	3,1	3,0	6,3
	Private sector credit flow as % of GDP, consolidated		14%	-2,9	4,5	8,0	-4,2	-0,2	-3,3
	Private sector debt as % of GDP, consolidated		133%	222,1	222,6	225,5	218,5	218,8	212,8
	General government sector debt as % of GDP		60%	42,9	46,4	45,2	44,7	44,8	40,4
	Unemployment rate	3 year average	10%	5,6	7,0	7,5	7,4	7,0	6,6
	Total financial sector liabilities (% y-o-y change)		16.5%	9,7	1,6	2,5	1,8	6,8	-2,0
New employment indicators	Activity rate - % of total population aged 15-64 (3 years change in p.p)		-0.2%	-0,7	-1,4	-1,6	-1,3	-1,2	-0,1
	Long-term unemployment rate - % of active population aged 15-74 (3 years change in p.p)		0.5%	0,9	1,3	1,5	0,3	-0,1	-0,4
	Youth unemployment rate - % of active population aged 15-24 (3 years change in p.p)		2%	6,4	6,2	2,3	-0,9	-1,6	-3,3

Flags: i: see metadata. na: not available.
(1) Unemployment rate: for 2006 i = Eurostat back-calculation to include 2011 Population Census results.
(2) Youth unemployment rate: for 2006 i = Eurostat back-calculation to include 2011 Population Census results.
Source: European Commission, Eurostat and Directorate-General for Economic and Financial Affairs (for real effective exchange rate), and International Monetary Fund

ANNEX C
Standard tables

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

	2011	2012	2013	2014	2015	2016
Total assets of the banking sector (% of GDP)	465,3	457,7	410,1	415,4	385,0	385,4
Share of assets of the five largest banks (% of total assets)	66,3	65,6	68,4	68,1	67,8	-
Foreign ownership of banking system (% of total assets)	15,0	16,6	19,2	4,5	4,1	-
Financial soundness indicators:[1)]						
- non-performing loans (% of total loans)	3,0	3,9	3,9	5,1	4,0	3,6
- capital adequacy ratio (%)	16,9	18,7	19,2	18,2	19,8	20,2
- return on equity (%)[2)]	0,6	2,0	4,4	4,7	6,8	4,5
Bank loans to the private sector (year-on-year % change)	-1,3	-0,4	0,6	0,2	1,0	0,9
Lending for house purchase (year-on-year % change)	1,9	1,2	-0,8	0,4	1,1	1,1
Loan to deposit ratio	306,2	295,4	292,4	280,5	277,3	267,3
Central Bank liquidity as % of liabilities	0,9	1,4	0,9	1,0	0,7	0,6
Private debt (% of GDP)	221,0	224,0	215,6	215,0	208,4	-
Gross external debt (% of GDP)[1)] - public	20,6	20,0	17,5	18,1	15,4	15,2
- private	42,9	41,6	37,1	38,9	39,3	41,2
Long-term interest rate spread versus Bund (basis points)*	12,2	-9,2	17,6	16,3	19,5	23,9
Credit default swap spreads for sovereign securities (5-year)*	63,7	80,0	17,6	16,0	12,7	15,5

(1) Latest data Q2 2016
(2) Quarterly values are not annualised
* 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: **Labour market and social indicators**

	2011	2012	2013	2014	2015	2016 [4]
Employment rate (% of population aged 20-64)	75,7	75,4	75,6	75,9	76,5	77,5
Employment growth (% change from previous year)	0,0	-0,7	0,0	1,0	1,3	1,7
Employment rate of women (% of female population aged 20-64)	72,4	72,2	72,4	72,2	72,6	74,2
Employment rate of men (% of male population aged 20-64)	79,0	78,6	78,7	79,5	80,2	80,8
Employment rate of older workers (% of population aged 55-64)	59,5	60,8	61,7	63,2	64,7	67,5
Part-time employment (% of total employment, aged 15-64)	25,1	24,8	24,7	24,6	24,7	26,4
Fixed-term employment (% of employees with a fixed term contract, aged 15-64)	8,9	8,6	8,8	8,6	8,7	13,7
Transitions from temporary to permanent employment	:	24,0	28,0	44,5	45,1	:
Unemployment rate[1] (% active population, age group 15-74)	7,6	7,5	7,0	6,6	6,2	6,1
Long-term unemployment rate[2] (% of labour force)	1,8	2,1	1,8	1,7	1,7	1,4
Youth unemployment rate (% active population aged 15-24)	14,2	14,1	13,0	12,6	10,8	11,7
Youth NEET[3] rate (% of population aged 15-24)	6,3	6,6	6,0	5,8	6,2	:
Early leavers from education and training (% of pop. aged 18-24 with at most lower sec. educ. and not in further education or training)	9,6	9,1	8,0	7,8	7,8	:
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	41,2	43,0	43,4	44,9	47,6	:
Formal childcare (30 hours or over; % of population aged less than 3 years)	69,0	59,0	63,0	64,0	:	:

(1) 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.
(2) Long-term unemployed are those who have been unemployed for at least 12 months.
(3) Not in education employment or training.
(4) Average of first three quarters of 2016. Data for total unemployment and youth unemployment rates are seasonally adjusted.

Source: European Commission (EU Labour Force Survey)

Table C.3: **Expenditure on social protection benefits and social inclusion indicators**

Expenditure on social protection benefits (% of GDP)	2010	2011	2012	2013	2014	2015
Sickness/healthcare	6,7	6,6	6,6	6,5	6,4	:
Disability	4,3	4,1	4,2	4,2	4,1	:
Old age and survivors	12,7	12,8	12,7	13,5	14,3	:
Family/children	4,1	3,9	3,7	3,7	3,6	:
Unemployment	2,0	1,9	1,9	1,9	1,7	:
Housing	0,7	0,7	0,7	0,7	0,7	:
Social exclusion n.e.c.	1,2	1,2	1,2	1,3	1,4	:
Total	31,6	31,2	31,1	31,7	32,2	:
of which: means-tested benefits	10,7	11,0	11,1	11,4	11,5	:
Social inclusion indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
People at risk of poverty or social exclusion[1] (% of total population)	18,3	17,6	17,5	18,3	17,9	17,7
Children at risk of poverty or social exclusion (% of people aged 0-17)	15,1	15,7	14,9	15,4	14,5	15,7
At-risk-of-poverty rate[2] (% of total population)	13,3	12,1	12,0	11,9	12,1	12,2
Severe material deprivation rate[3] (% of total population)	2,7	2,3	2,7	3,6	3,2	3,7
Proportion of people living in low work intensity households[4] (% of people aged 0-59)	10,6	10,5	10,2	11,9	12,2	11,6
In-work at-risk-of-poverty rate (% of persons employed)	6,5	6,3	5,2	5,5	4,9	5,5
Impact of social transfers (excluding pensions) on reducing poverty	54,3	56,6	56,2	57,2	55,0	52,7
Poverty thresholds, expressed in national currency at constant prices[5]	107703	110674	108815	107205	108491	109962
Gross disposable income (households; growth %)	5,8	3,4	2,1	1,9	2,2	3,6
Inequality of income distribution (S80/S20 income quintile share ratio)	4,4	4,0	3,9	4,0	4,1	4,1
GINI coefficient before taxes and transfers	48,9	50,9	50,6	49,9	51,4	50,7
GINI coefficient after taxes and transfers	26,9	27,8	28,1	26,8	27,7	27,4

(1) People at risk of poverty or social exclusion : individuals who are at risk of poverty and/or suffering from severe material deprivation and/or living in households with zero or very low work intensity.
(2) At-risk-of-poverty rate : proportion of people with an equivalised disposable income below 60 % of the national equivalised median income.
(3) 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.
(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) For EE, CY, MT, SI and SK, thresholds in nominal values in euros; harmonised index of consumer prices = 100 in 2006 (2007 survey refers to 2006 incomes)

Source: For expenditure for social protection benefits ESSPROS; for social inclusion EU-SILC.

Table C.4: **Product market performance and policy indicators**

Performance indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Labour productivity (real, per person employed, year-on-year % change)						
Labour productivity in industry	10,63	0,42	3,53	0,82	-1,58	0,11
Labour productivity in construction	-5,35	1,10	4,16	3,76	2,05	0,16
Labour productivity in market services	3,86	-0,26	0,84	2,50	2,59	-0,47
Unit labour costs (ULC) (whole economy, year-on-year % change)						
ULC in industry	-7,15	0,08	-0,89	1,14	3,94	2,08
ULC in construction	6,24	-0,64	-1,48	-3,03	-0,66	1,93
ULC in market services	-1,31	0,61	1,73	-1,75	-0,10	2,08
Business environment	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Time needed to enforce contracts[1] (days)	410.0	410.0	410.0	410.0	380.0	380.0
Time needed to start a business[1] (days)	5,5	5,5	5,5	5,5	5,5	3,0
Outcome of applications by SMEs for bank loans[2]	na	0,78	na	0,70	0,44	0,98
Research and innovation	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
R&D intensity	2,94	2,97	3,00	3,01	3,02	3,03
Total public expenditure on education as % of GDP, for all levels of education combined	8,81	8,75	na	na	na	na
Number of science & technology people employed as % of total employment	46	46	47	48	48	48
Population having completed tertiary education[3]	28	28	29	29	30	31
Young people with upper secondary education[4]	69	70	72	72	73	74
Trade balance of high technology products as % of GDP	-0,18	-0,04	-0,30	-0,13	-0,04	0,17
Product and service markets and competition				**2003**	**2008**	**2013**
OECD product market regulation (PMR)[5], overall				na	1,35	1,22
OECD PMR[5], retail				3,00	1,83	1,69
OECD PMR[5], professional services				0,87	0,78	0,82
OECD PMR[5], network industries[6]				2,05	1,70	1,61

1 The methodologies, including the assumptions, for this indicator are shown in detail at: 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 if the outcome is not known.
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 at: http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm
6 Aggregate OECD indicators of regulation in energy, transport and communications.
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.5: **Green growth**

Green growth performance		2010	2011	2012	2013	2014	2015
Macroeconomic							
Energy intensity	kgoe / €	0,08	0,08	0,07	0,07	0,07	0,07
Carbon intensity	kg / €	0,29	0,27	0,24	0,25	0,23	-
Resource intensity (reciprocal of resource productivity)	kg / €	0,50	0,57	0,56	0,51	0,51	0,48
Waste intensity	kg / €	0,08	-	0,07	-	0,09	-
Energy balance of trade	% GDP	0,9	0,7	0,5	0,1	0,0	-
Weighting of energy in HICP	%	10,68	11,46	11,41	10,31	10,56	11,32
Difference between energy price change and inflation	%	5,1	4,5	-0,7	0,8	0,7	-5,9
Real unit of energy cost	% of value added	9,3	10,4	10,7	10,3	10,1	-
Ratio of environmental taxes to labour taxes	ratio	0,18	0,18	0,17	0,17	0,16	-
Environmental taxes	% GDP	4,0	4,1	4,0	4,2	4,1	-
Sectoral							
Industry energy intensity	kgoe / €	0,07	0,07	0,06	0,06	0,06	0,06
Real unit energy cost for manufacturing industry excl. refining	% of value added	6,6	7,1	6,8	6,5	6,0	-
Share of energy-intensive industries in the economy	% GDP	10,42	10,17	10,80	10,28	10,05	9,97
Electricity prices for medium-sized industrial users	€ / kWh	0,10	0,10	0,10	0,10	0,10	0,09
Gas prices for medium-sized industrial users	€ / kWh	0,04	0,04	0,04	0,04	0,04	0,04
Public R&D for energy	% GDP	0,06	0,06	0,05	0,05	0,04	0,03
Public R&D for environmental protection	% GDP	0,02	0,02	0,02	0,02	0,02	0,02
Municipal waste recycling rate	%	-	41,5	42,1	43,2	45,1	46,3
Share of GHG emissions covered by ETS*	%	39,8	36,9	34,1	39,1	36,0	32,7
Transport energy intensity	kgoe / €	0,50	0,47	0,44	0,39	0,41	0,41
Transport carbon intensity	kg / €	1,27	1,16	1,10	0,98	1,00	-
Security of energy supply							
Energy import dependency	%	-15,7	-5,6	-2,6	12,2	12,2	13,1
Aggregated supplier concentration index	HHI	2,5	9,2	5,2	5,8	8,0	-
Diversification of energy mix	HHI	0,27	0,26	0,26	0,26	0,27	-

All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2005 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 a percentage of total value added for the economy
Environmental taxes over labour taxes and GDP: from European Commission's database, 'Taxation trends in the European Union'
Industry energy intensity: final energy consumption of industry (in kgoe) divided by gross value added of industry (in 2005 EUR)
Real unit energy costs for manufacturing industry excluding refining : real costs as a percentage 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 greenhouse gas 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 2005 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 over natural gas, total petrol products, nuclear heat, renewable energies and solid fuels
* European Commission and European Environment Agency
Source: European Commission (Eurostat) unless indicated otherwise

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