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OVERVIEW



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*The previous Survey of Denmark was issued in May 2016.*

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## BASIC STATISTICS OF DENMARK

(Data refer to 2017 or latest available. Numbers in parentheses refer to the OECD average)\*

LAND, PEOPLE AND ELECTORAL CYCLE				
Population (million)	5.8		Population density per km <sup>2</sup>	133.9 (37.2)
Under 15 (%)	16.5	(17.9)	Life expectancy (years, 2016)	80.9 (80.6)
Over 65 (%)	19.7	(16.8)	Men	79.0 (77.9)
Foreign-born (%)	9.9		Women	82.8 (83.3)
Latest 5-year average growth (%)	0.6	(0.6)	Latest general election	June 2015
ECONOMY				
Gross domestic product (GDP)			Value added shares (%)	
In current prices (billion USD)	329.9		Primary sector	1.6 (2.5)
In current prices (billion DKK)	2 178.1		Industry including construction	23.1 (26.9)
Latest 5-year average real growth (%)	1.9	(2.1)	Services	75.2 (70.6)
Per capita (000 USD PPP)	54.3	(44.3)		
GENERAL GOVERNMENT				
Expenditure (% of GDP)	51.2	(40.3)	Gross financial debt (% of GDP)	48.9 (110.9)
Revenue (% of GDP)	52.3	(38.1)	Net financial debt (% of GDP)	0.5 (66.4)
EXTERNAL ACCOUNTS				
Exchange rate (DKK per USD)	6.590		Main exports (% of total merchandise exports)	
PPP exchange rate (USA = 1)	7.238		Machinery and transport equipment	26.6
In per cent of GDP			Chemicals and related products, n.e.s.	20.3
Exports of goods and services	54.5	(55.4)	Food and live animals	17.0
Imports of goods and services	47.4	(51.1)	Main imports (% of total merchandise imports)	
Current account balance	8.0	(0.4)	Machinery and transport equipment	33.5
Net international investment position	59.0		Miscellaneous manufactured articles	16.4
			Manufactured goods	13.9
LABOUR MARKET, SKILLS AND INNOVATION				
Employment rate for 15-64 year-olds (%)	74.2	(67.8)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	5.7 (5.8)
Men	76.9	(75.5)	Youth (age 15-24, %)	11.0 (11.9)
Women	71.5	(60.1)	Long-term unemployed (1 year and over, %)	1.3 (1.7)
Participation rate for 15-64 year-olds (%)	78.8	(72.1)	Tertiary educational attainment 25-64 year-olds (%)	39.2 (36.5)
Average hours worked per year	1 408	(1 759)	Gross domestic expenditure on R&D (% of GDP, 2016)	2.9 (2.3)
ENVIRONMENT				
Total primary energy supply per capita (toe)	2.9	(4.1)	CO <sub>2</sub> emissions from fuel combustion per capita (tonnes, 2016)	5.8 (9.0)
Renewables (%)	34.9	(10.2)	Water abstractions per capita (1 000 m <sup>3</sup> , 2015)	0.1 (0.8)
Exposure to air pollution (more than 10 g/m <sup>3</sup> of PM <sub>2.5</sub> , % of population)	62.7	(58.7)	Municipal waste per capita (tonnes, 2016)	0.8 (0.5)
SOCIETY				
Income inequality (Gini coefficient, 2015)	0.263	(0.315)	Education outcomes (PISA score, 2015)	
Relative poverty rate (% , 2015)	5.5	(11.7)	Reading	500 (493)
Median disposable household income (000 USD PPP, 2015)	28.6	(23.0)	Mathematics	511 (490)
Public and private spending (% of GDP)			Science	502 (493)
Health care	10.2	(8.8)	Share of women in parliament (% , 2016)	37.4 (28.7)
Pensions (2013)	12.6	(9.1)	Net official development assistance (% of GNI)	0.74 (0.37)
Education (primary, secondary, post sec. non tertiary, 2014)	4.8	(3.6)		

**Better life index:** <http://www.oecdbetterlifeindex.org>

\* Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, International Monetary Fund, Statistics Denmark.

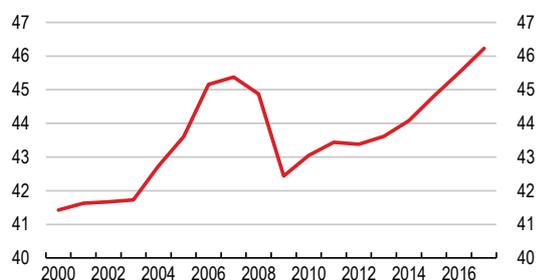
## Executive Summary

*The economy is growing after a long, but moderate, recovery*

**Living standards and wellbeing are high in Denmark.** A long tradition of reforms and strong institutions underpins high social trust and labour market inclusiveness, which ensures that high economic performance can co-exist with low inequality. Strong adaptability to structural changes and shocks ensures that these good outcomes last. Commitment to addressing environmental challenges has made Denmark a frontrunner in green growth.

**Economic conditions have improved in recent years with GDP growing above 2% since 2015, increasingly supported by domestic demand.** Robust employment growth in the private sector has started to feed into wage increases. However, economic growth has been weaker than in other OECD countries over the past decades and GDP per capita has only recently passed its pre-crisis peak. Living standards have nonetheless improved at a faster pace as other factors have added to real income growth.

**Figure A. The economy has recovered gradually**  
Real GDP per capita, USD PPP, thousand



Source: OECD National Accounts database.

StatLink <https://doi.org/10.1787/888933897988>

**The steady expansion is projected to continue.** High confidence and the strong labour market will support private consumption. Increased capacity utilisation in the business sector and elevated house prices in the large cities will promote further investment growth. Further tightening of the labour market is projected.

**There are substantial downside risks.** International trade tensions could escalate further, hurting the small and open Danish economy as a hard Brexit would do too. High household gross debt is also a source of vulnerability.

**Table A. Economic growth will continue**  
Annual percentage change, volume

	2017	2018	2019	2020
Gross domestic product (GDP)	2.3	1.2	1.9	1.6
Private consumption	2.1	2.5	2.2	2.2
Government consumption	0.7	0.5	0.5	0.4
Gross fixed capital formation	4.6	7.7	1.5	3.3
Exports of goods and services	3.6	-0.5	2.8	3.0
Imports of goods and services	3.6	2.9	2.2	3.8
Unemployment rate	5.7	5.2	5.1	4.9
Consumer price index	1.1	0.9	1.8	2.0

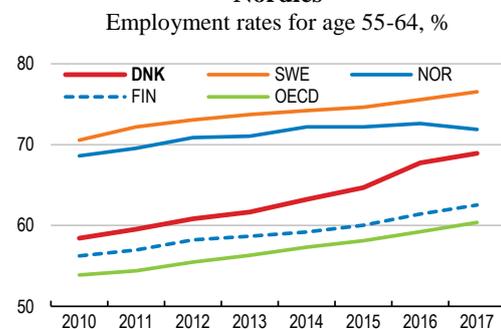
Source: OECD Economic Outlook 104 database.

*Public finances are healthy, but public sector efficiency could be improved*

**Macroeconomic policy is set to remain supportive.** Very accommodative monetary conditions implied by the peg to the euro in combination with broadly neutral fiscal policy in the near term may fuel the economy. As labour resources become scarcer, prudence is warranted. The fiscal framework controls spending well, but a tight structural budget deficit limit could constrain fiscal space excessively if buffers are not sufficient.

**Indexation of statutory retirement ages to life expectancy underpins fiscal sustainability.** A prolonged series of pension and benefit reforms has delivered sound public finances and strengthened potential growth. Employment rates of seniors have risen significantly. Further increases in the effective retirement age would require to further increase the incentives to work for seniors and continuously meet the needs of those with reduced work capacity.

**Figure B. Senior employment is still below other Nordics**



Source: OECD Labour Force Statistics.

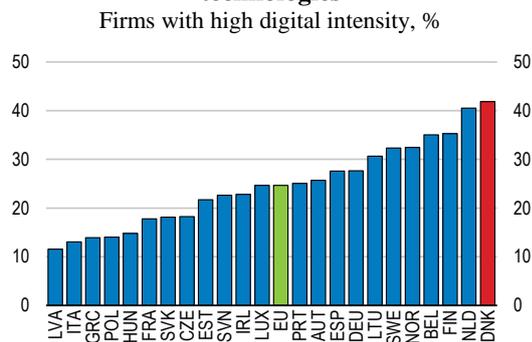
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**The Government is committed to improve public sector efficiency through digitalisation.** However, collaboration across public services and administrative levels is inadequate and may blunt opportunities for innovation. A stronger link between performance and compensation of employees could help to boost productivity growth. Centralised and detailed collective agreements for each occupation also tend to constrain flexibility of managers.

**Business framework conditions need to adapt to deal with disruptive technologies**

**Danish firms are close to the technological frontier thanks to digitalisation and favourable business framework conditions.** Nonetheless, productivity growth has been disappointing in the recent past. The productivity slowdown has been particular pronounced in the sector of services, with a distinct weakness in less knowledge-intensive service industries such as trade, transport, food and accommodation.

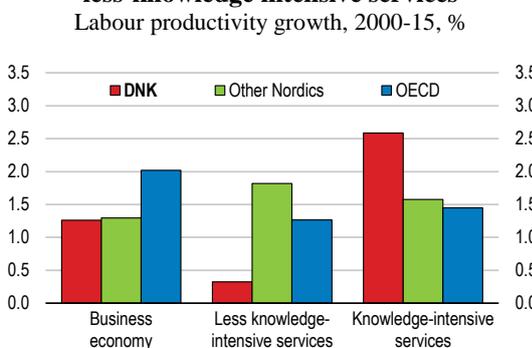
**Figure C. Danish firms extensively use digital technologies**



Source: European Commission, Digital Scoreboard 2017.

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**Figure D. Productivity growth lags behind in less-knowledge intensive services**

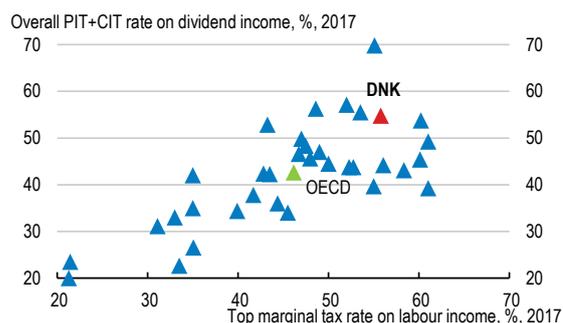


Source: OECD calculations based on OECD STAN database.

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**Tax reform could give a boost to investment.** Analyses based on Danish firm-level data suggest that digital adoption through investment in ICT capital increases firm productivity and contributes to business dynamics and firm growth. A further shift of taxation away from capital and labour income would improve economic incentives for investment, labour supply and the development of new business models.

**Figure E. Top marginal tax rates on labour and dividend incomes are high**



Source: OECD Tax database.

StatLink <https://doi.org/10.1787/8889338980464>

**Refining the competition framework would also allow more scope for new technologies to give a boost to productivity growth.** A complex structure for enforcement and determination of anti-competitive practices results in sometimes lengthy court procedures and can weaken deterrence. While the competition framework is generally in line with international standards, revising differing practices with respect to the use of fines and exemptions would strengthen effective enforcement and help to combat attempts to shut out innovative disruptors.

**Business R&D spending is strongly concentrated in a few large firms, especially in pharmaceuticals.**

Tax incentives for R&D expenditures have recently been increased, although business R&D support remains lower than in many OECD countries. Commercialisation of the outcomes from sizeable public R&D spending is trailing and call for improved cooperation between universities and the business sector.

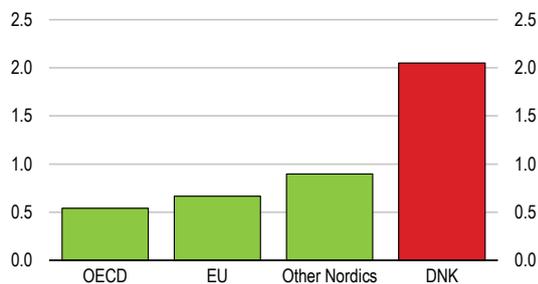
**Ensuring supply of the right skills will boost productivity through better utilisation of advanced technology.** The share of graduates in science, technology, engineering and math is low compared to many other OECD countries, while businesses increasingly report shortages in these

skills. Reform of generous student grants could strengthen incentives to meet labour market demands, especially since their impact on equal access to education tends to be elusive at the tertiary level. This would free resources for more effective public spending. Finally, dependence on foreign workers has grown substantially in recent years, but the visa permit system can be complex and slow for non-EU workers, hindering acute access to skilled labour.

### *Activation policies need to adapt to the challenges from new technologies*

**Wellbeing in Denmark is among the highest across OECD countries in most dimensions.** This is not least due to a strong and inclusive labour market, including policies for reskilling of job seekers. Activation policies need, however, to adapt to the challenges from new technologies, which will transform the future of work. Also, a stronger focus is needed on cost-effectiveness of these labour market policies.

**Figure F. Public spending on active labour market policies (ALMPs) is very high**  
% of GDP, 2016



Source: OECD Labour Force Statistics.

StatLink <https://doi.org/10.1787/888933898083>

**Integration of migrants is slowly improving.** Employment rates for refugees and migrants are well below those of natives, even among higher educated, reducing wellbeing, potential living standards and the tax base. A recent integration-training programme, managed with social partners, has been effective in addressing barriers posed by high entry wages, but the target group is narrow.

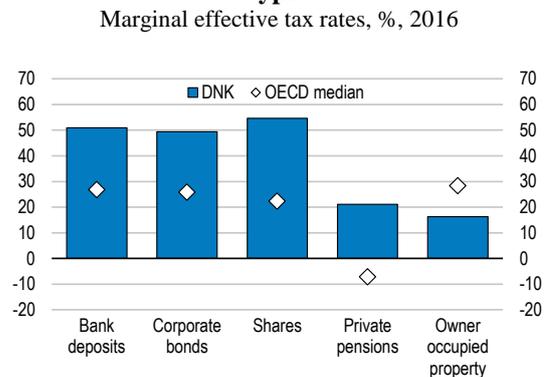
**Gender gaps are among the smallest across OECD countries, but the share of women in management positions remains low.** Women still play the main role in primary childcare, which explains most of the remaining gender inequality in the labour market. After giving birth to the first child, women tend to

move to more family-friendly jobs. More flexibility in the supply of childcare services could help reduce the gender gap further.

### *Favourable taxation of housing fuels household financial vulnerabilities*

**High household gross debt and low liquid assets pose vulnerabilities.** Household balance sheets are large, reflecting a well-functioning mortgage market that allows households to hold large debt-to-income ratios, which are offset not only by housing assets, but also by sizeable occupational pension savings. However, owner-occupied housing is excessively stimulated by tax expenditures, while the rental market suffers from stiff regulation.

**Figure G. Taxation is high and unequal across asset types**



Source: OECD (2018), Taxation of household savings.

StatLink <https://doi.org/10.1787/888933898102>

**Getting pension savings right for all remains a challenge.** The funded occupational pension scheme delivers decent living standards in retirement and is a vital pillar of fiscal sustainability. Yet, sizeable contribution rates lock large savings in pension funds and can create household balance sheet maturity mismatches in case of falls in asset prices and rising interest rates. Work and saving incentives suffer from pervasive means testing of public pensions, while a residual group has little pension savings. Recent reform has reduced the high marginal taxes by introducing additional tax deductions for pension contributions. Nevertheless, further reform may be needed to reduce complexity and improve transparency for personal financial planning.

MAIN FINDINGS	KEY RECOMMENDATIONS
<b>Fiscal framework and public sector efficiency</b>	
Fiscal policy was set close to the structural budget deficit limit at 0.5% of GDP during the initial phase of the recovery but is now moving away from the deficit limit. An exception can allow the structural budget deficit limit to be exceeded in exceptional circumstances.	Gradually tighten fiscal policy to reflect the economic upturn. Build fiscal space for a future setback to complement the scope to relax fiscal policy in exceptional circumstances.
Public sector efficiency is constrained by centralised and detailed collective agreements for each occupation, which implies a weak association between performance and compensation of employees and reduces flexibility of managers.	Reform public sector collective bargaining, in collaboration with trade unions, towards broader and higher-level agreements, allowing more bargaining at the local level.
Policy measures to reduce greenhouse gas emissions further focus on the transport sector, while less-expensive reductions can be achieved in the agricultural sector.	Implement the most cost-efficient emission reductions first, taking into account implications for global emissions.
<b>Productivity</b>	
Entrepreneurship and investment are hampered by high top marginal tax rates on labour and capital income as well as favourable inheritance taxation of family-owned businesses. Top personal income tax brackets generate a small share of the total tax revenue.	Reduce top marginal tax rates on labour and capital income. Withdraw reduced inheritance taxation of family-owned businesses.
Corporate income taxation strongly favours debt financing and mortgage loans dominate firm financing. The vast majority of equity and venture capital is invested abroad.	Implement an allowance for corporate equity (ACE) in the corporate income tax, accompanied by a sufficient anti-avoidance framework.
The structure of the competition framework and determination of anti-competitive practices are complex and differ from other countries. Use of fines must be imposed by courts and Ministers are permitted to make certain exemptions from the Competition Act.	Provide greater power to competition authorities to impose administrative fines and structural remedies within constitutional constraints. Develop clearer standards for exemptions from the Competition Act and involve competition authorities in their determination.
Business R&D spending is strongly concentrated in a few large firms and the share of innovative firms is low.	Broaden public support to business R&D through well-designed R&D grants and tax credits for incremental R&D expenses.
Student grants are very generous and higher than in other Nordic countries. At the same time, average age of graduation is high and misalignments with labour market demands prevail, including shortages of STEM graduates.	Reduce student grants for tertiary education and rely more on student loans. Link repayment conditions to subsequent income and labour market status.
Dependence on foreign workers has grown substantially, but the visa permit system can be complex and slow for non-EU workers.	Assess whether the current visa schemes for non-EU workers sufficiently address skill needs and consider simplifying entry procedures.
<b>Inclusiveness</b>	
Labour market integration of refugees and migrants is weak and unequal across municipalities. A trial integration-training programme has addressed barriers posed by high entry wages, but the target group is narrow.	Spread best integration practices across municipalities and strengthen co-ordination of services such as language training and subsidised work to ease integration. Improve the integration-training programme in collaboration with social partners and make it permanent.
Gender gaps are slowly closing, but bearing the larger burden in primary childcare tends to interrupt women's way to senior and management positions.	Increase flexibility in the provision of childcare services, including outside of regular working hours to further narrow the gender gap. Encourage parents to split parental leave more equally by increasing the share reserved for each parent.
<b>Housing market, pension savings and financial regulation</b>	
High household gross debt and widespread use of variable and deferred amortisation mortgage loans pose vulnerabilities. Favourable taxation and high rental market regulation stimulate homeownership unduly.	Reduce deductibility of interest expenses in personal income taxation. Deregulate the rental market and remove favourable conditions for parents to buy-to-let flats to their children.
Tax incentives for pension savings are complex due to several tax deductions and interactions with the public pension scheme. Large pension savings can create household balance sheet maturity mismatches.	Review the pension and tax system and implement reform to increase transparency and ease personal financial planning.
The financial sector is large relative to the economy and dominated by a few very large banks. A case of massive money laundering in the Estonian branch of the largest Danish bank points to weaknesses in supervision.	Improve prudential supervision and international collaboration by joining the European Banking Union. Increase scrutiny and implement more severe penalties for money-laundering activities.

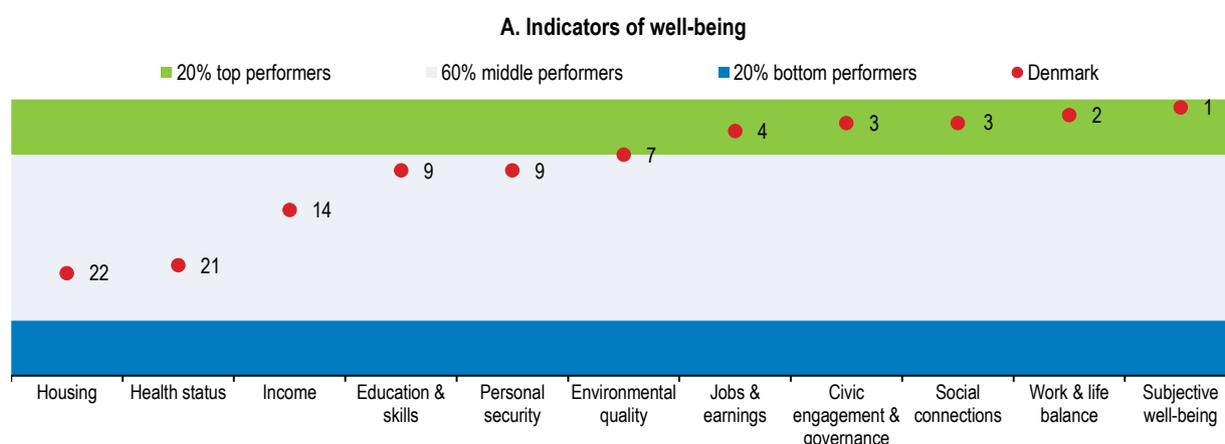
## Key Policy Insights

### The economy is growing, though modestly

Denmark has traditionally delivered high living standards to its citizens and left few behind. High and equally-distributed incomes translate into strong feelings of wellbeing according to a range of measures (Figure 1). What is more, there is equality of opportunities across generations in terms of income, education and health (OECD, 2018<sup>[1]</sup>). Commitment to addressing environmental challenges has made Denmark a frontrunner in green growth. A comprehensive series of pension and benefit reforms has bolstered public finances and lifted more people into the labour market, which will help to sustain these good outcomes. In the future, lifting labour force participation by increasing the statutory retirement ages and facilitating the integration of migrant workers will also help to secure that this continues.

Globalisation and digital development have brought large benefits to Danish households and businesses. Denmark ranks as the most digitalised economy in Europe, partly due to a strong public sector digitalisation effort, and has the largest share of firms with high digital intensity. It is therefore in a strong position to reap the opportunities of emerging technologies. Moreover, framework conditions for businesses rank consistently at the top and steps have been taken to embrace new business models and the future of work, including adapting the tax system to comprise the platform and collaborative economy.

**Figure 1. Wellbeing ranks high in many dimensions**  
Better Life Index, country rankings from 1 (best) to 35 (worst), 2017



**B. Denmark well-being sub-indicators selected rankings**

	Sub-indicator	Rank	Measure	Denmark	OECD <sup>2</sup>
Highest rankings	Life Satisfaction	1	Average score	7.5	6.5
	Quality of support network	3	Perceived social network support, % of population	95	89
	Years in education	3	Years	19.7	17.0
	Voter turnout	4	% of population	86	69
	Employees working very long hours	4	% of dependent employed working >50 hours per week	2.2	12.6
	Time devoted to leisure and personal care	4	Hours per day	15.9	14.9
	Employment rate	5	% of the working-age population (aged 15-64)	75	67
Lowest rankings	Life expectancy	24	Years	80.9	80.1
	Housing expenditure	29	% of the household gross adjusted disposable income	24	20

1. Each well-being dimension is measured by one to four indicators from the OECD Better Life Index set.

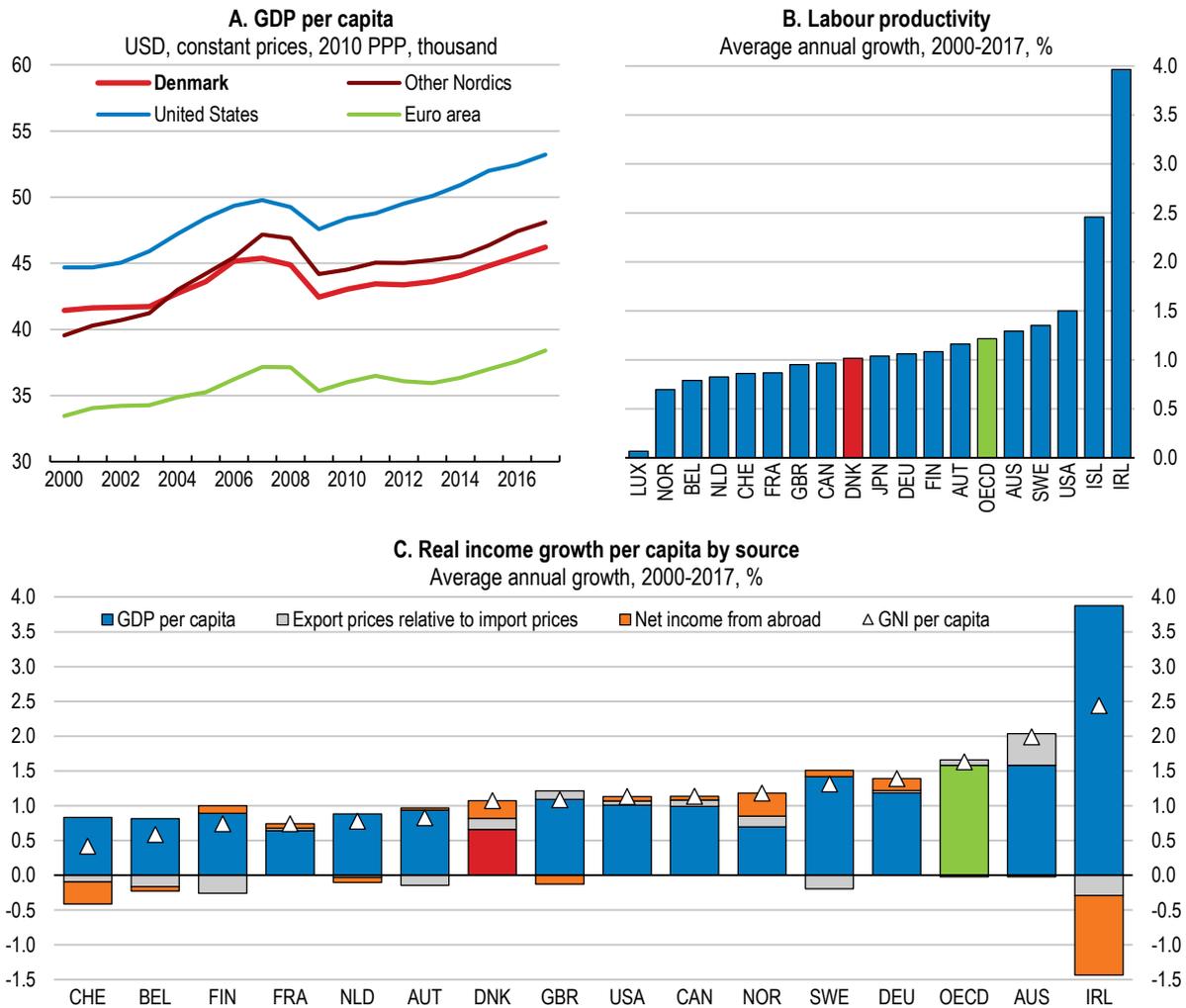
2. The OECD average is population-weighted.

Source: OECD (2017), OECD Better Life Index, [www.oecdbetterlifeindex.org](http://www.oecdbetterlifeindex.org).

StatLink  <https://doi.org/10.1787/888933898121>

Given this strong background, the recent decades of weak economic performance has been disappointing and raised questions about the reasons behind Denmark's relatively low productivity growth. GDP per capita has increased less than in many comparable countries since 2000 (Figure 2, Panel A). Underlying GDP growth has picked up modestly more recently, but this has not been sufficient to prevent labour market tightening and spare capacity to be exhausted.

Figure 2. Growth has been weak, though other factors add to real incomes



Note: Other Nordics refers to a simple average of Finland, Iceland, Norway and Sweden. Panel B and C include the upper half of OECD countries according to 2017 PPP GDP per capita.

Source: OECD Economic Outlook; OECD National Accounts; and OECD Productivity databases.

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A main challenge for the Danish economy is to accelerate productivity growth (Figure 2, Panel B), especially in services. Most advanced countries have experienced a slowdown in productivity growth, but this is particularly surprising given Denmark's business-friendly policy settings and high level of digitalisation. The country's integration in global value chains has recently boosted GDP and productivity growth (by exports of goods produced abroad), but this may not last and potentially masks even weaker domestic economic development.

Material living standards have, however, improved at a faster pace since other factors have added to household incomes. Import prices have persistently grown at a slower pace than export prices, which has boosted consumers' real incomes. On top of this, returns from

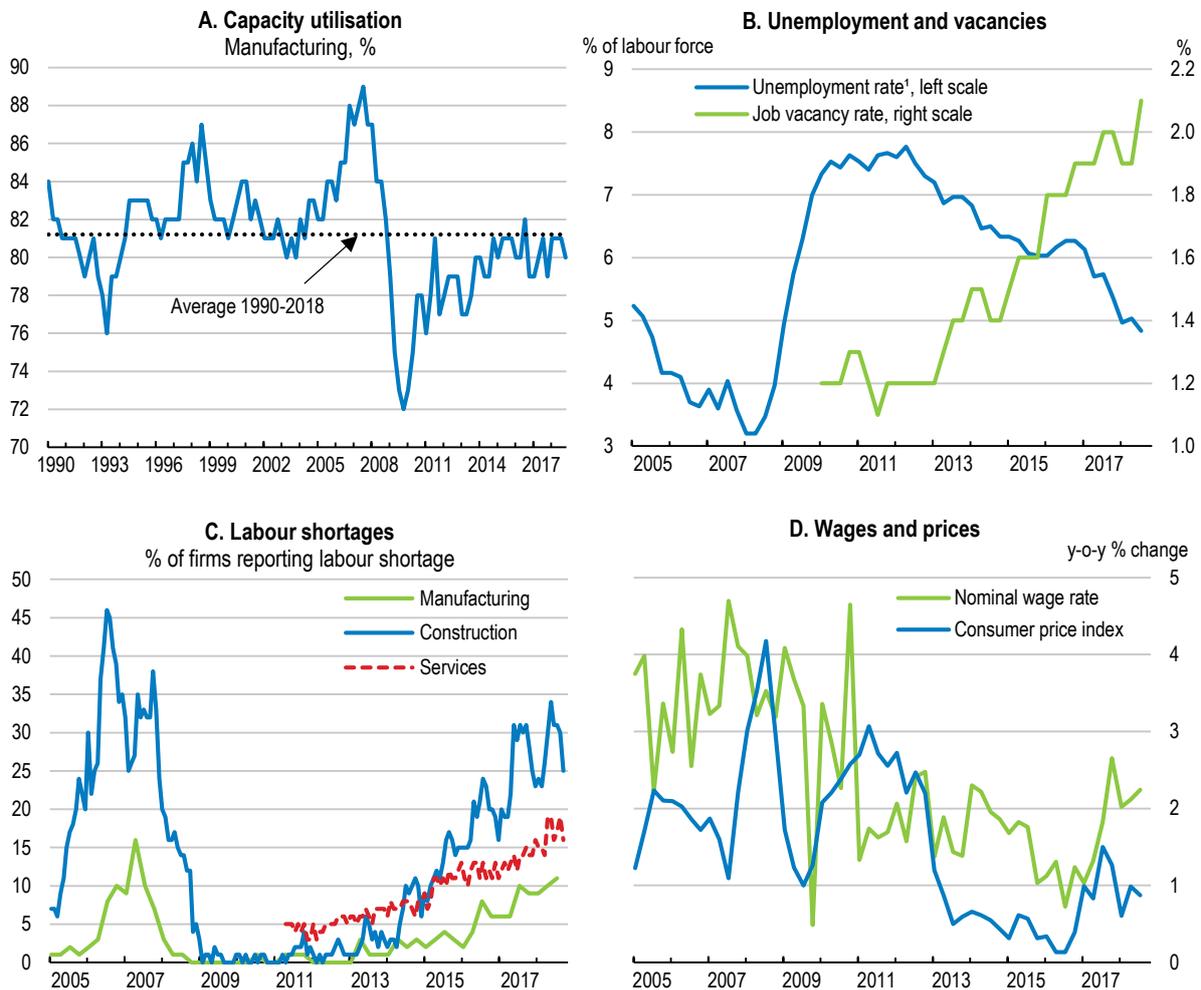
investments of large pension and corporate savings have generated sizeable net income from abroad. As a result, GNI per capita growth shows a brighter development in line with other OECD countries (Figure 2, Panel C). Nonetheless, the recent growth under-performance needs to be reversed.

Against this background, the main messages of this *Survey* are:

- Boosting productivity growth is essential to ensure that living standards and wellbeing remain high. This requires further improving business framework conditions, notably competition pressures. Reducing high marginal taxes, broadening innovation activity and attracting more high-skilled foreign workers are also priorities.
- Shifting the tax burden from corporate earnings to housing to make taxes more neutral across asset types would benefit the allocation of savings and the level of business investment, hence boosting productivity and wages.
- Maintaining high and inclusive employment is essential to ensure disruptive changes benefit all. This will require a stronger focus on cost-effectiveness of policies and measures to mitigate barriers to work for refugees and migrants.

### ***The outlook is for continued growth and a tighter labour market***

Increased capacity utilisation (Figure 3, Panel A) and elevated house prices in the large cities have spurred business and residential investment on the back of very low interest rates. As steady private job creation has pushed down unemployment (Figure 3, Panel B), the number of job vacancies has been rising and labour shortages are reported in the construction sector and intensifying more broadly (Figure 3, Panel C). Nominal wage growth remains nonetheless moderate and inflationary pressures are contained so far (Figure 3, Panel D). Further wage increases of around 2% per year are scheduled through collective agreements in the coming years.

**Figure 3. A tightening labour market is beginning to feed into wage growth**

1. Data breaks in Q1 2016 and Q1 2017.

Source: Statistics Denmark; OECD Short-Term Labour Market Statistics and OECD Economic Outlook database.

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With no emerging imbalances, the outlook is favourable. In the short-run, the recording of the export of a single patent has distorted GDP data, boosting growth in 2017 and reducing it in 2018 (Table 1). Looking ahead, the broad-based economic expansion is projected to continue in 2019 and moderate in 2020, supported by high business and consumer confidence and very accommodative monetary conditions. Inflation is set to pick up and return to a level around 2% by 2020. Private consumption will be an important driver of growth sustained by rising real wages and implementation of income tax reductions. Yet, households' savings rate will remain relatively high as balance sheet consolidation is set to continue, bringing down high household gross debt. The buoyant housing market, especially in the larger cities, will continue to sustain residential investment. Labour shortages are expected to intensify and stimulate business investment and wage growth, although the labour force will rise thanks to increases in the statutory retirement age in 2019 and 2020 as well as income tax reforms. Labour market pressures could increase if

improved economic conditions in other European countries impede further recruiting of workers from abroad (Danish Ministry for Economic Affairs and the Interior, 2017<sup>[2]</sup>).

**Table 1. Macroeconomic indicators and projections**

Annual percentage change, volume (2010 prices)

	2014 Current prices (billion DKK)	2015	2016	2017	Projections		
					2018	2019	2020
Gross domestic product (GDP)	1,981.2	2.3	2.4	2.3	1.2	1.9	1.6
Private consumption	934.3	2.3	2.1	2.1	2.5	2.2	2.2
Government consumption	510.9	1.7	0.2	0.7	0.5	0.5	0.4
Gross fixed capital formation	379.7	5.5	7.6	4.6	7.7	1.5	3.3
Housing	76.5	5.3	6.8	12.9	10.3	1.8	2.8
Business	228.6	8.9	8.4	4.7	8.6	1.3	4.1
Government	74.6	-4.7	5.4	-5.5	1.2	2.0	0.8
Final domestic demand	1,824.9	2.8	2.7	2.3	3.1	1.6	2.0
Stockbuilding <sup>1</sup>	18.4	0.0	-0.2	-0.1	0.0	0.0	0.0
Total domestic demand	1,843.2	2.8	2.5	2.2	3.1	1.5	2.0
Exports of goods and services	1,082.0	3.6	3.9	3.6	-0.5	2.8	3.0
Imports of goods and services	944.0	4.6	4.2	3.6	2.9	2.2	3.8
Net exports <sup>1</sup>	137.9	-0.2	0.1	0.2	-1.7	0.5	-0.2
<i>Other indicators (growth rates, unless specified)</i>							
Potential GDP	..	1.3	1.5	1.5	1.6	1.6	1.6
Output gap (% of potential GDP)	..	-0.6	0.3	1.0	0.6	0.9	0.9
Employment	..	1.4	3.2	-0.8	1.9	1.0	0.9
Unemployment rate (% of labour force)	..	6.2	6.2	5.7	5.2	5.1	4.9
GDP deflator	..	0.4	0.7	1.4	0.3	2.0	1.9
Consumer price index	..	0.5	0.3	1.1	0.9	1.8	2.0
Core consumer price index (excluding food and energy)	..	1.3	0.7	0.9	0.8	1.8	2.0
Household saving ratio, net (% of disposable income)	..	4.3	4.6	5.2	5.1	4.7	4.6
Current account balance (% of GDP)	..	8.2	7.9	8.0	5.7	5.8	5.0
General government financial balance (% of GDP)	..	-1.5	-0.4	1.1	0.0	-0.3	-0.2
Net one-offs (% of potential GDP)	..	0.8	-0.1	-0.1	-0.2	0.0	-0.3
Underlying government primary balance (% of potential GDP)	..	-0.9	0.2	0.9	0.1	-0.7	-0.5
General government gross debt (% of GDP)	..	53.5	51.7	49.3	48.4	47.3	46.3
General government gross debt (Maastricht, % of GDP)	..	39.8	37.3	35.6	34.6	33.6	32.6
General government net debt (% of GDP)	..	4.9	3.9	1.1	1.0	1.3	1.4
Three-month money market rate, average	..	-0.1	-0.1	-0.3	-0.3	-0.2	0.2
Ten-year government bond yield, average	..	0.7	0.3	0.5	0.5	0.6	0.8

1. Contribution to changes in real GDP.

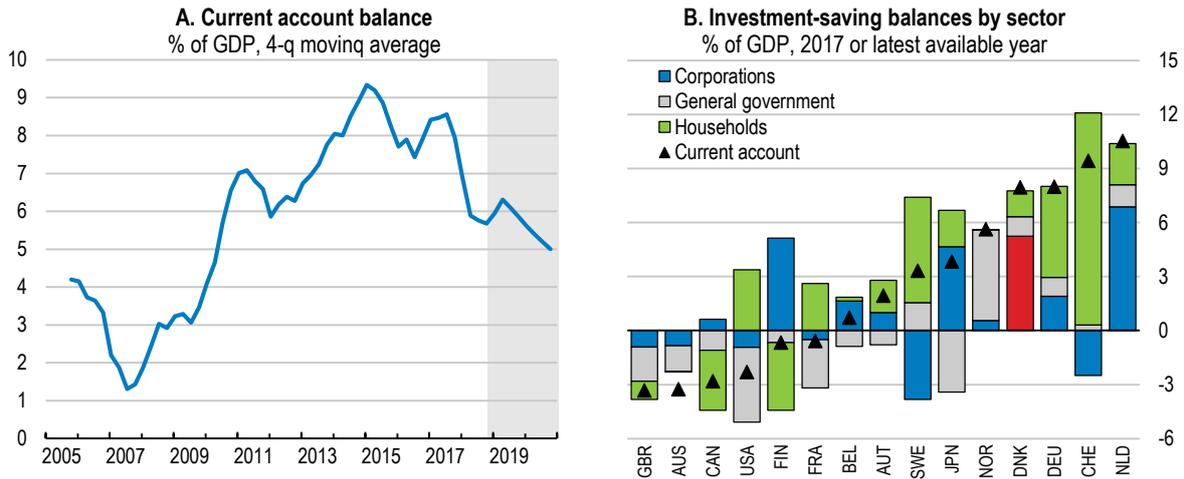
*Note:* A single sale of a pharmaceutical patent boosts exports in 2017 and accounts for 0.4 percentage point of GDP growth. This explains the temporarily weak growth in 2018 since exports drops in the absence of similar one-time transactions in the following year. The allocation of income from the patent sale across time is subject to later revision.

*Source:* OECD Economic Outlook 104 database.

The current account surplus at 8% of GDP in 2017 is among the largest across OECD countries relative to GDP (Figure 4). Danish net exports of goods make up most of the surplus (5.7% of GDP in 2017) with main trading partners dominated by geographically close countries (Figure 5). Moreover, goods produced and sold abroad comprise an increasing share of the trade surplus (Box 1). This reflects Denmark's deep integration in global value chains and activities of large Danish multinational corporations. A strong

international investment position (59% of GDP in 2017) also generates considerable income from abroad. Increasing savings, including by households, is the main reason for the sustained high surplus. Corporate savings remain high (Figure 4, Panel B) though business investment rates are approaching pre-crisis levels (see Chapter).

**Figure 4. The large current account surplus has started to decline**

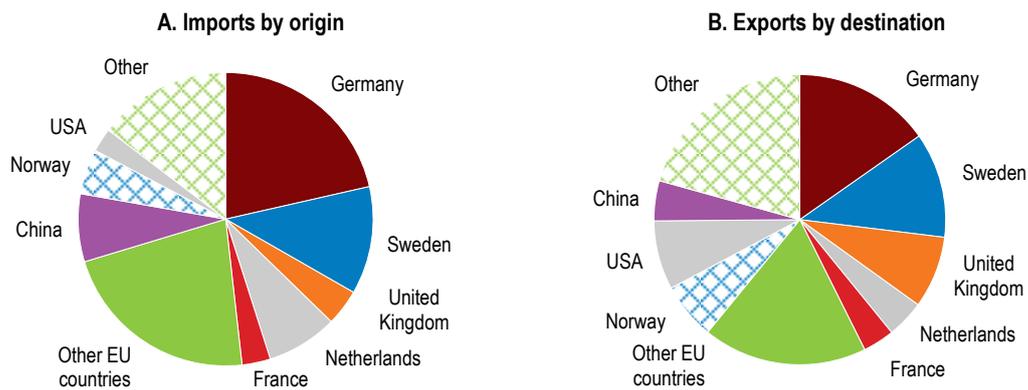


Source: OECD Economic Outlook and OECD National Accounts databases.

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**Figure 5. Denmark's main trading partners**

Trade of goods, shares by partner, 2017, % of total



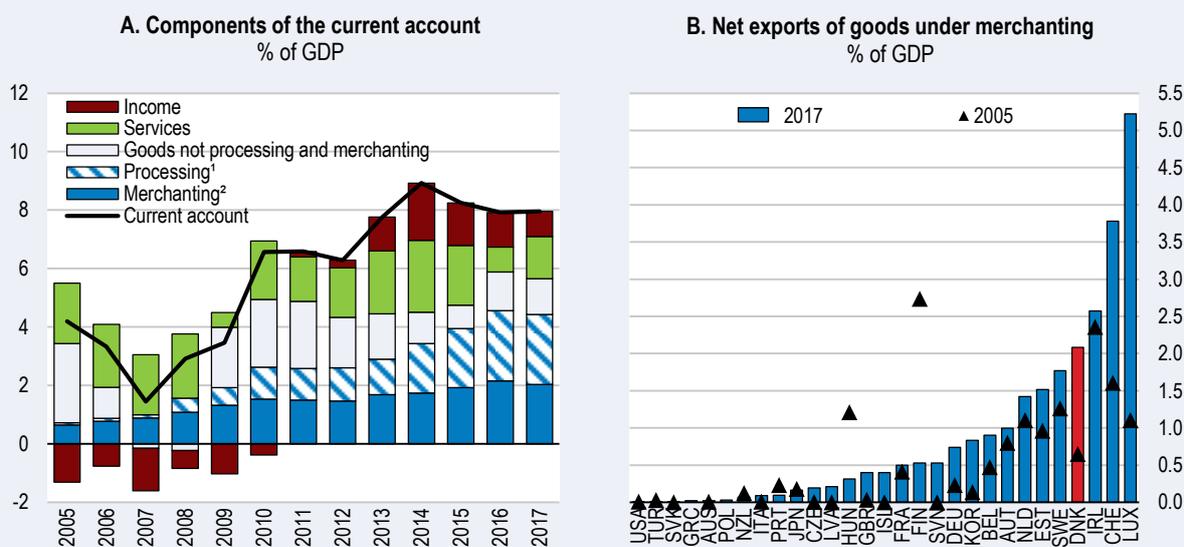
Source: Statistics Denmark.

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### Box 1. Denmark's global value chain integration can blur measures of economic activity

Denmark benefits from high integration in global value chains, which contributes to its large current account surplus. However, a large share of Danish exports has never been in Denmark, but are goods produced and sold abroad with legal ownership by Danish firms. This is referred to as merchandising and processing and accounts for an increasing share of the large current account surplus (Figure 6, Panel A). The surplus from merchandising alone is among the highest across OECD countries (Figure 6, Panel B).

Figure 6. A large part of the current account surplus stems from goods produced abroad



1. Goods processed and sold abroad without crossing Danish borders.
2. Purchases and sales of goods abroad without crossing Danish borders.

Source: Statistics Denmark; IMF, Balance of Payments Statistics.

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The classification of such activity as export rather than investment income from abroad has a direct impact on the measurement of GDP and productivity. A back-of-an-envelope calculation shows that re-classifying all net exports from merchandising and processing as investment income would reduce average nominal GDP growth by 12% over the period 2005-2017. In manufacturing, half of the productivity growth over the same period derive from production controlled from Denmark but taking place abroad (Knudsen, 2018<sub>[3]</sub>).

While this is far from the only GDP measurement issue, the strong upward trend in net exports of goods produced abroad in recent years calls for further analysis. The question is whether improved GDP growth, as well as strong productivity growth in manufacturing (see Chapter), adequately reflect growing domestic activity and innovation or have been boosted by increasing measurement challenges due to growing importance of global value chains. This is a particular concern since a substantial part of these sales is likely to be transactions within multinational corporations sensitive to internal price setting behaviour (Jørgensen, Kramp and Mortensen, 2018<sub>[4]</sub>). Aggregate income growth on the other hand is unaffected, since both exports and investment income are part of GNI (Figure 2, Panel C).

The surplus is projected to decline towards 5% by 2020, driven by robust import growth and weaker exports. Net income from abroad is also set to decline due to rising interest rates. Although private consumption is expected to pick up as household consolidation ceases and support the reduction of the current account surplus (Mortensen, Jørgensen and Kramp, 2017<sup>[5]</sup>), further measures should be considered. Implementing recommendations from the thematic chapter of this *Survey*, such as an allowance for corporate equity (ACE), would help to boost business investment and further reduce the excess current account surplus.

Important downside risks to the outlook mainly derive from the large openness of the economy and normalisation of interest rates. A slowdown in international trade triggered by rising trade protectionism could reverse the large gains from globalisation. For the same reason, the uncertainty surrounding the conditions for the United Kingdom leaving the EU (Brexit) continues to be a downside risk. Rising housing wealth combined with continued very low interest rates, resulting from the currency peg to the euro, could trigger a boom in private consumption, resulting in overheating with higher wage and price inflation. A faster and larger-than-expected interest rate hike, on the other hand, risk prompting large property price drops in some parts of the country with macroeconomic spillovers and financial sector losses.

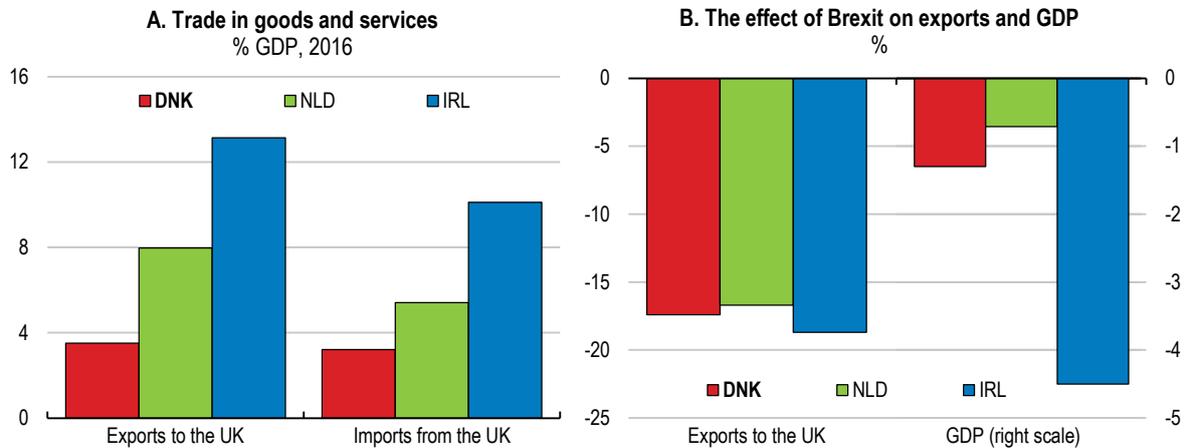
**Table 2. Possible low-probability extreme shocks to the Danish economy**

Shock	Possible impact
Escalation of import tariff increases	As a small open economy that is highly integrated in global value chains, Denmark is particularly exposed to an escalation of import tariff increases and retaliatory measures from affected countries. This would reverse large gains from globalisation.
Large negative economic impact of hard Brexit	A significant increase in trade and investment barriers between the EU and the United Kingdom would have major negative economic effects in the agricultural, food and manufacturing sectors. In addition, Danish fishery is very dependent on continued access to the British fishery zone.
Large declines of house prices in the big cities	An unexpected hike in interest rates could trigger significant drops in house prices, especially in Copenhagen, resulting in insolvent households and increased losses in the financial system. In addition, uncertainty prevails regarding possible price effects of the phase-in of the property taxation reform, especially in the larger cities after 2020.
Financial sector turmoil	The financial sector is large and dominated by a few very large banks, highly interconnected and integrated in global financial markets. Turmoil triggered by cases of misconduct (money laundering) or events outside of Denmark could severely distress the economy.

#### *A hard Brexit would hit some sectors hard*

As a small and open economy with the United Kingdom as the fourth largest export destination (absorbing 7.8% of total exports in 2017), Denmark is particularly exposed to Brexit. New analysis produced for this *Survey* (Smith, Hermansen and Malthe-Thagaard, 2018<sup>[6]</sup>) shows that, although the United Kingdom is a comparatively less important trade partner (Figure 7, Panel A), a worst-case scenario could result in a similar decline in GDP as in the Netherlands (Figure 7, Panel B) because of a more vulnerable sectoral composition of Danish exports.

Figure 7. The Danish economy is vulnerable to a worst-case Brexit scenario



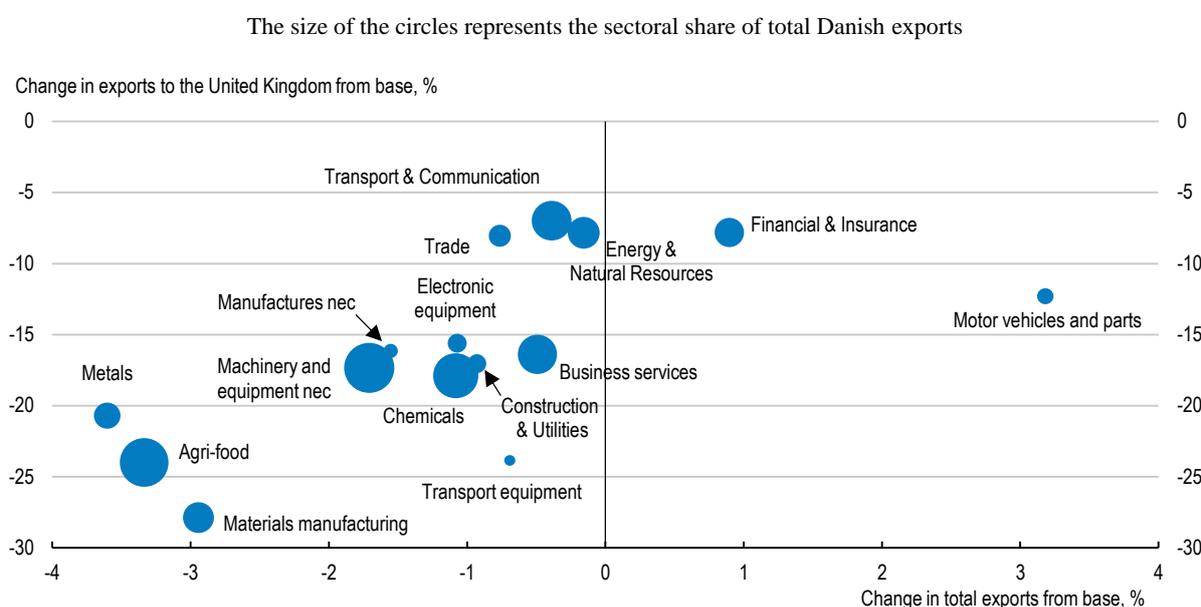
*Note:* The simulation approach of a worst-case Brexit is similar for the three countries. In the case of Ireland, a more extended analysis incorporates additional effects via FDI and applies the NiGEM model, which reduces the impact on GDP to -1.5% (Arriola et al., 2018<sup>[7]</sup>).

*Source:* OECD International Trade by Commodity (ITCS) database; OECD International Trade in Services (ITSS) database; OECD National Accounts database; OECD calculations using the METRO model.

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The model-based scenario is purely illustrative and does not represent a judgement about the most likely outcome of negotiations. It quantifies the contraction in trade between the United Kingdom and the European Union, including Denmark, if tariffs were to be governed by WTO most favoured nation rules and non-tariff costs would rise as well. The results suggest that Danish exports to the United Kingdom would drop by 17%, resulting in a 1.3% decline in GDP in the medium term, taken to be a period that allows adjustment of labour and some reallocation of capital across sectors, but not including longer-term structural effects. The agri-food, especially processed food, and machinery and equipment sectors account for more than half of the export reduction to the United Kingdom (Figure 8). By contrast, financial services would likely increase their overall exports as Denmark would capture demand from other EU countries as the United Kingdom reduces its exports.

The impact on employment could be particularly painful since the most affected sectors employ many low-skilled workers and the agri-food sector is concentrated outside the larger cities and especially in the western part of the country. The meat products sector would experience the largest decline at 7.4%, while labour demand for low-skilled workers in the comparatively large machinery and equipment sector would decline by 1.5% in the medium term.

**Figure 8. Brexit would particularly affect agri-food and manufacturing**

*Note:* Chemicals also include pharmaceuticals. Transport & Communication include air and sea transport and transport not elsewhere classified (nec).

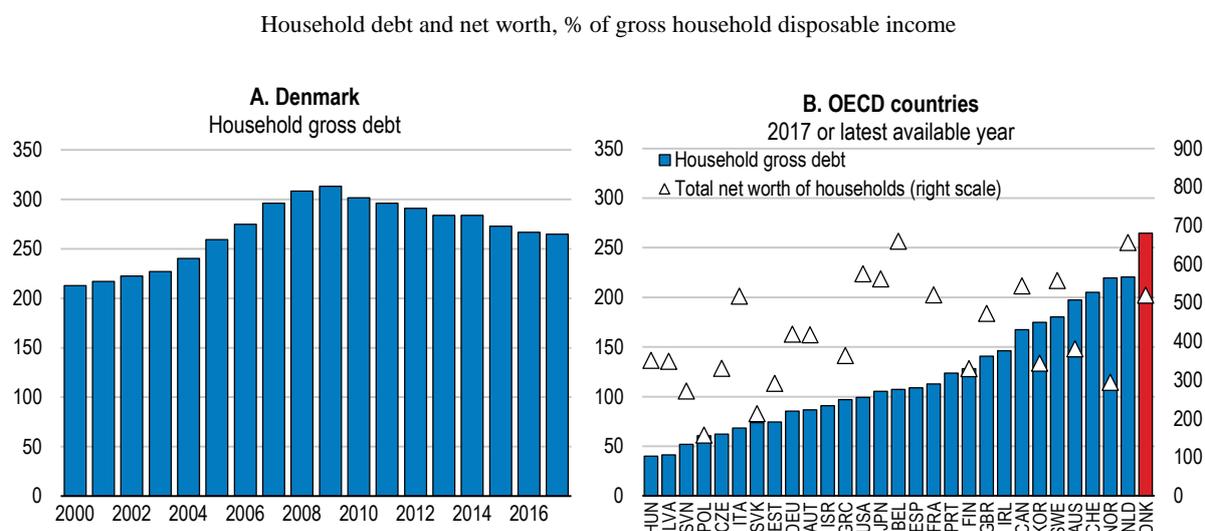
*Source:* OECD calculations using the METRO model.

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These results highlight the need to develop contingency plans to minimise possible economic disruptions in some sectors. The Government formed a Brexit task force in 2016, which has reviewed and initiated action in areas likely to be most affected, including initial recruitment of additional customs officers. Denmark is in a good position to absorb such a shock, should a worst-case outcome materialise. The flexible labour market and strong policies for reskilling of job seekers provide a strong basis to facilitate the needed reallocation of workers across sectors. Nevertheless, such adjustment will imply costs and produce job-losers in the short run, which should be mitigated to the extent possible, including by making efficient use of existing tools.

### Macro-financial vulnerabilities have declined, but weaknesses remain

The financial institutions have adapted their business model to the negative interest rates and are considered to be robust and well capitalised by recent stress tests (Danmarks Nationalbank, 2018<sup>[8]</sup>; EBA, 2018<sup>[9]</sup>). Nevertheless, the Danish financial sector remains large by international standards, with a total-assets-to-GDP ratio of more than 500%, and is dominated by a few very large banks and highly interconnected. As discussed in the previous *Survey*, this poses a systemic risk and potentially creates important implicit liabilities for the public sector. At the same time, household gross debt continues to be the highest across OECD countries (Figure 9), albeit large pension savings counterbalances this (see below). Households, and the economy at large, are thus vulnerable to increasing interest rates and falling house prices (Systemic Risk Council, 2017<sup>[10]</sup>).

**Figure 9. Household gross debt has decreased but is still very high**

Source: OECD Economic Outlook database.

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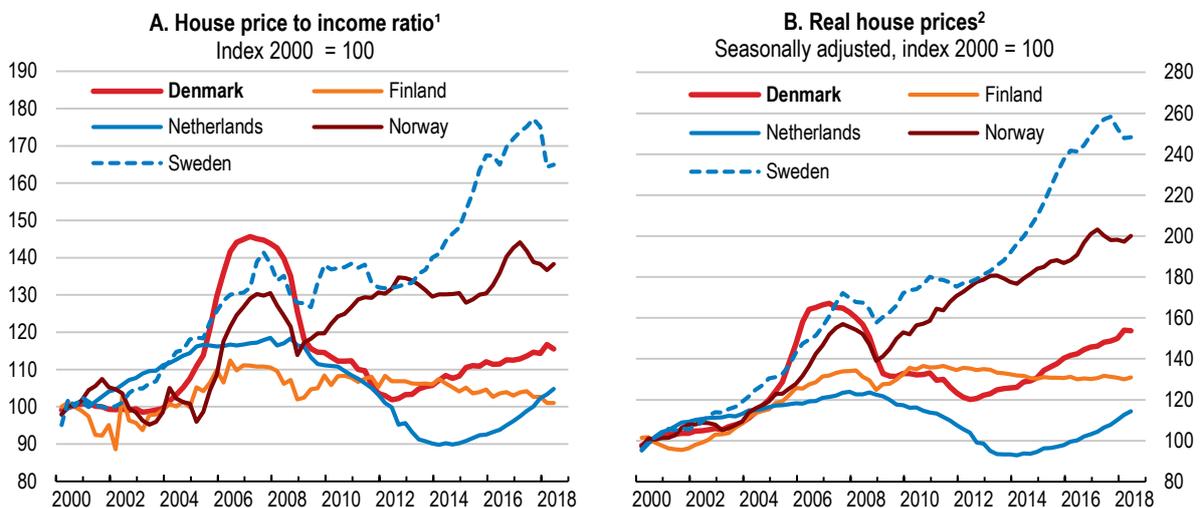
Significant action has been taken since the financial crisis to strengthen resilience of the financial sector (OECD, 2016<sup>[11]</sup>; Bohn-Jespersen and Mogensen, 2018<sup>[12]</sup>). The Government is currently considering the option to join the EU banking union, with a decision to be made in 2019. With few and very large banks relative to the Danish economy, advantages from strengthened supervision and a credible resolution mechanism for these institutions through the banking union would be sizeable. A main issue is to ensure appropriate regulatory treatment of the Danish mortgage institutions and the sizeable covered bonds market. Denmark should join the banking union to improve prudential supervision and strengthen international collaboration. Stronger integration of financial markets could also facilitate more competition in the longer term, which has been found to be weak, especially among mortgage institutions (Danish Competition Council, 2017<sup>[13]</sup>).

A recent disclosure of massive money laundering in the Estonian branch of the largest Danish bank (Danske Bank) provides a spotlight on the issue of systemically important financial institutions and the need for enhanced vigilance, especially across borders. The disclosed activities took place during 2007-2015. At that time, anti-money laundering regulation and supervision in Denmark was insufficient and had substantial shortcomings as pointed out in evaluations by the Financial Action Task Force (FATF, 2017<sup>[14]</sup>). The Government implemented the 4<sup>th</sup> EU anti-money laundering directive in 2017 and took further initiatives in September 2018 in response to the Danske Bank case, including higher fines and additional requirements on fit and proper management. Nevertheless, there is a need to review and ensure that the regulatory framework is at least in line with international standards and to strengthen cross-border collaboration. Scrutiny should be increased to raise the risk of detection and penalties for non-compliance should be raised to a level that forces management to fight such activities.

### *The housing market would benefit from tax reform and deregulation*

House prices in Denmark have overall increased in line with fundamentals (Systemic Risk Council, 2018<sup>[15]</sup>) and at a slower pace than in other Nordic countries (Figure 10). This has limited borrowing needs and resulted in muted credit growth (Figure 11), which also reflects balance sheet consolidation by households and businesses. At the same time, a recent property tax reform, which again will base tax payments on market valuations of housing, implies that immovable property taxation will act as an automatic stabiliser of the real estate market going forward (Table 3). Moreover, the Government has started to increase the countercyclical capital buffer to prepare banks for a future downturn. The financial sector, and the economy more broadly, is thus in a better shape compared to the latest upturn in the mid-2000s and the risk of a severe downturn is significantly lower (see Annex 1.B).

**Figure 10. House prices in Denmark have increased in line with household income**

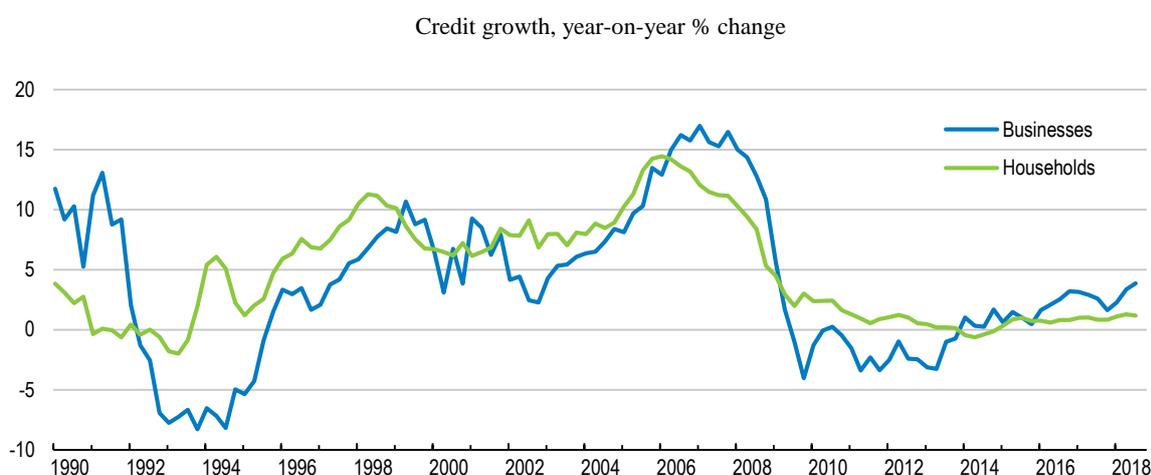


1. The nominal house price is divided by the nominal disposable income per head.

2. Nominal house prices deflated using the private consumption deflator from the national accounts.

Source: OECD Analytical House Price database.

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**Figure 11. Nominal credit growth is low reflecting ongoing consolidation of high debt**

Source: Systemic Risk Council.

StatLink  <https://doi.org/10.1787/888933898311>

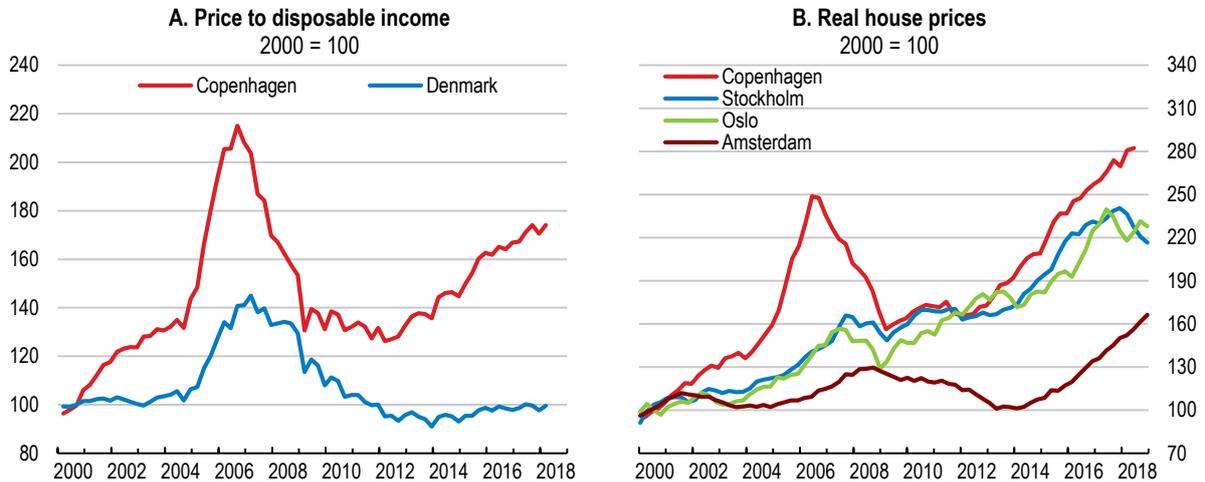
**Table 3. Past OECD recommendations on financial sector and housing market risks**

Recommendations	Action taken since May 2016 or planned
Reform property taxation, including by decreasing mortgage interest rate deductibility and regularly updating valuations in order to establish neutrality across different asset classes.	A property tax reform was approved in 2017 and will become fully effective in 2021. New valuations will be implemented and updated every second year starting in 2020. The new tax system replaces a nominal tax freeze of property taxation with proportional taxation, maintaining a progressive element for the most valuable homes. No changes have been made to mortgage interest rate deductibility.
Encourage mortgage institutions to strengthen the use of debt-service-to-income ratios.	From January 2018, new guidelines for mortgage loans to households with high debt restricts access to mortgage loans with deferred amortisation and variable interest rates. Households with debt-to-income ratios above 400% are required to fix interest rates for at least five years if the loan-to-value ratio is above 60%.
Give consideration to extending some of the locally targeted "Best practices" introduced by the regulator for granting a mortgage in hotspot areas to the whole country.	No specific action taken.
Support a bigger private rental housing market by easing rent regulation while striking a balance between landlord and tenant protection.	No specific action taken.

Beneath the modest increase in nationwide house prices are rapid increases in Copenhagen (Figure 12), and to some extent Aarhus. Thus, locally there are some concerns whether house prices are increasing faster than warranted by disposable income growth and low interest rates, thereby elevating debt-to-income ratios for new homeowners (Systemic Risk Council, 2017<sub>[16]</sub>). This prompted the authorities to tighten financial regulation by reducing access to risky loans for households with high debt relative to income from January 2018 (Table 3). This is a welcome step to reduce the interest rate exposure for new borrowers. However, vulnerabilities among existing households holding high debt based on risky loans remain unaddressed. These loans, with variable interest rate and a repayment-free grace period the first ten years (interest-only loans), represents about 35% of the outstanding stock of household mortgage debt. While this also includes many households with low debt-to-income ratios, households with both critically high loan-to-value and high debt-to-

income ratios hold around 10% of the total household debt and are very vulnerable to interest rate increases (Danmarks Nationalbank, 2018<sub>[17]</sub>).

**Figure 12. Rapidly increasing flat prices in Copenhagen is a risk**



*Note:* The house price index for Copenhagen is based on owner-occupied flats. For Amsterdam, Oslo and Stockholm available house price indices based on existing dwellings for permanent living are used. The private consumption deflator from the national accounts is used to deflate nominal house prices.

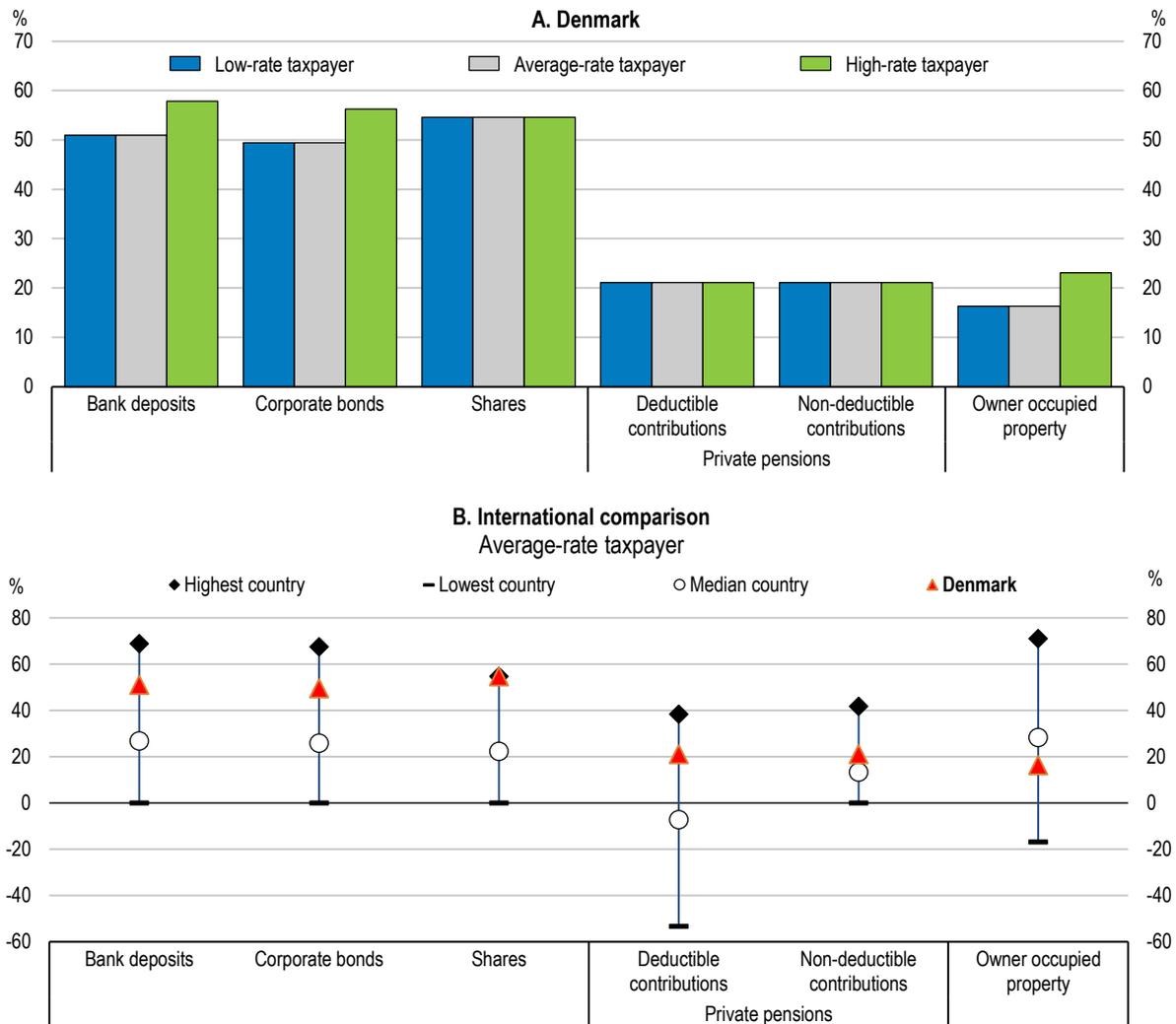
*Source:* Systemic Risk Council of Denmark; Statistics Denmark; OECD Economic Outlook Database; Statistics Netherlands; Statistics Norway; Statistics Sweden.

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The buoyant housing market in parts of the country and low interest rates offer a window of opportunity to make progress on reforms to improve household resilience through economic incentives in the tax system. Even after the 2017 property tax reform, recurrent taxes on immovable property are low if evaluated against normal interest rate levels; the tax relief for interest expenses is comparatively high and has no cap, while capital gains on owner-occupied housing are exempted from taxation. This makes the tax treatment of owner-occupied housing very favourable compared to other savings vehicles (Figure 13, Panel A) than in most other OECD countries (Figure 13, Panel B). Such low property taxation and high interest deductibility are found to be capitalised into real house prices, which also inflate household gross debt (Høj, Jørgensen and Schou, 2018<sub>[18]</sub>; Andrews and Caldera Sánchez, 2011<sub>[19]</sub>). Even so, interest deductibility does reduce household exposure to interest rate increases as tax relief offsets part of the higher debt service burden.

**Figure 13. Taxation of capital income at the household level is high but favours owner-occupied housing**

Marginal effective tax rates across asset types, 2016



**How to read this figure:** The marginal effective tax rate summarises the tax on investing one additional currency unit across different assets with an expected holding period of five years (20 years for pension funds and housing). The tax rates are adjusted for country-specific average annual inflation rates over the period 2011-16. A low-rate (high-rate) taxpayer has relatively low (high) income and wealth. Savings in private pensions are assumed not to give rise to reductions in means-tested public pensions, which can raise marginal taxes substantially. This is the case for large groups in Denmark (Figure 21) (Danish Ministry of Finance, 2017<sup>[20]</sup>; 2018<sup>[21]</sup>). In many countries, pension contributions are deductible and tax-exempted on pay out, resulting in negative marginal effective tax rates. See source for details on the methodology and assumptions applied.

Source: OECD (2018), *Taxation of household savings*.

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At the same time, marginal taxes on other assets, like shares and corporate bonds, are substantially higher and among the top across OECD countries. This configuration of taxes is likely to hamper investment in personally-owned companies and development of the private equity market, which is likely to become a more important source of finance as intangibles become more important and new business models emerge (see Chapter). Many of the structural reforms recommended in the thematic chapter would boost investment and strengthen work incentives through tax reform (Box 2). Sustaining high inclusiveness, among other through a limited impact on redistribution of such reform, could to some extent be facilitated by removing selective support for certain high-income groups (such as reduced inheritance taxation of family-owned businesses). In any case, the progressivity of income taxes is substantially less important for redistribution compared to cash transfers (Causa and Hermansen, 2017<sup>[22]</sup>).

### Box 2. Quantification of structural reforms

Selected reforms that are proposed in the *Survey* are quantified in the table below, using simple and illustrative policy changes. Other reforms, such as strengthening the competition framework or improving integration of migrants, are not quantifiable given available information or the complexity of the policy design. Some of the estimates reported are based on empirical relationships between past structural reforms and productivity, employment and investment. These relationships allow the potential impact of some structural reforms to be gauged. These estimates assume swift and full implementation and are based on cross-country estimates, not reflecting the particular institutional settings of Denmark. As such, these estimates are illustrative.

**Table 4. Potential impact of structural reforms on per capita GDP**

Policy	Measure	10 year effect, %	Long-run effect, %
Personal income taxation	Reduce the top marginal tax rate by 5 percentage points (from 56 to 51%).	0.18	0.23
Taxation of dividends and realised capital gains	Reduce the highest tax rate by 5 percentage points (from 42 to 37%).	0.04	0.05
Corporate income taxation	Implement an allowance for corporate equity (ACE).	0.55	0.73
Student grants	Reduce student grants for higher education by 20%.	0.04	0.09
R&D business support	Increase spending on business R&D support by 10%.	0.02	0.05

*Note:* The following recommendations are included in the fiscal quantification (Box 4), but insufficient information preclude a quantification of their impact on GDP: reduce tax relief for interest expenses; increase inheritance taxation of family-owned businesses; and increase spending on early childhood education and care. *Source:* OECD calculations based on Égert and Gal (2017<sup>[23]</sup>); Danish Ministry of Finance (2017<sup>[24]</sup>; 2017<sup>[25]</sup>) and Danish Government (2017<sup>[26]</sup>).

Measures should be taken to move towards more tax neutrality across asset types. An ongoing reduction of the tax deductibility of interest expenses from 33.5% to 25.5% of expenses has had limited impact since it only applies above a threshold (EUR 6 700 for singles and EUR 13 400 for couples per year). Although the thresholds are fixed in nominal terms, most households continue to benefit from a tax relief of 33.5% for expenses below the thresholds in the current low interest rate environment. This leaves Denmark among the OECD countries with the most favourable tax treatment of interest expenses (OECD, 2018<sup>[27]</sup>), higher than in both Norway and Sweden. Denmark should reduce the

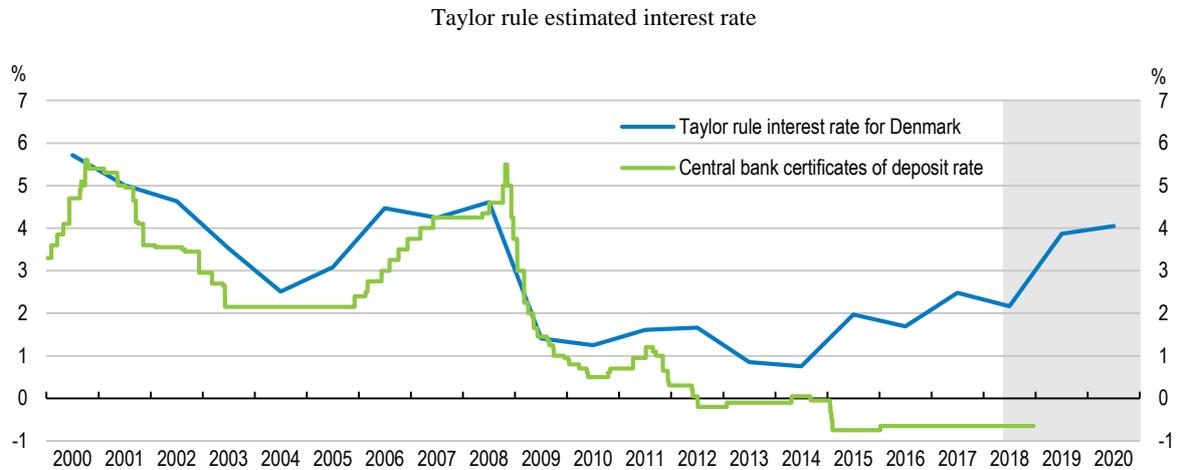
deductibility of interest expenses, for instance by gradually making the full amount of interest expenses subject to the lower rate of 25.5% tax relief.

The framework for taxation of immovable property is overall well designed. Denmark is among only three OECD countries (Australia and Estonia in addition) with a pure land tax, considered one of the most efficient taxes. In addition, the recent property tax reform will ensure valuations are updated every second year and maintains an element of progressive taxation. However, the recurrent property tax rate, expected to be set at 0.6% of a prudent valuation of homes from 2021, is likely to be below a neutral tax rate (Danish Economic Councils, 2016<sup>[28]</sup>), especially as interest rates normalise. Increasing recurrent taxation of housing can be a substantial burden for households with low incomes but high housing wealth. Deferring part of the taxation to the owner sells the house, which is already an option for pensioners, would be one way to mitigate such problems.

To target fast-rising prices of flats in the large cities additional measures are needed, albeit flats in Copenhagen and Aarhus make up a modest 6% of the national housing market by value. The rental market remains highly regulated with all private dwellings build before 1991 subject to strict rent control. Easing rent regulation and reducing housing subsidies as discussed in the 2016 *Survey* would stimulate a better utilisation of the housing stock and a larger private rental market. In turn, a larger and more dynamic rental market would ease the upward price pressure on the owner-occupied segment and promote labour mobility. Finally, selective support to parents to buy flats to rent to their children should be terminated to ease high demand for smaller flats. Current regulation allows parents to set below-market rents and receive tax allowances for the deficit. On top of this, children are entitled to rental subsidies like regular tenants.

### Macroeconomic policies are stimulating the economy

The tightening labour market and the widening of the positive output gap in the coming years call for prudent economic policy to reduce the risk of accelerating wage and price inflation, which happened within only a few years during the latest upturn. The central bank deposit rate has almost continuously been negative since 2012, the longest period in OECD economies, reflecting the sole objective of monetary policy to maintain the peg to the euro. This objective means Danish monetary policy is governed by that of the ECB, leaving no room to counter growing imbalances and capacity pressures (Figure 14). The peg also implies that monetary policy conditions are likely to remain very accommodative for a sustained period of time as indicated by the ECB. Therefore, fiscal and macro-prudential policies become more crucial for stabilisation (Blanchard and Summers, 2017<sup>[29]</sup>). In most cases, it should nonetheless be sufficient for Denmark to let its large automatic stabilisers work, although they may have weakened somewhat over time as marginal taxes have been lowered and the unemployment benefit period shortened.

**Figure 14. Monetary conditions will not help to stabilise the economy**

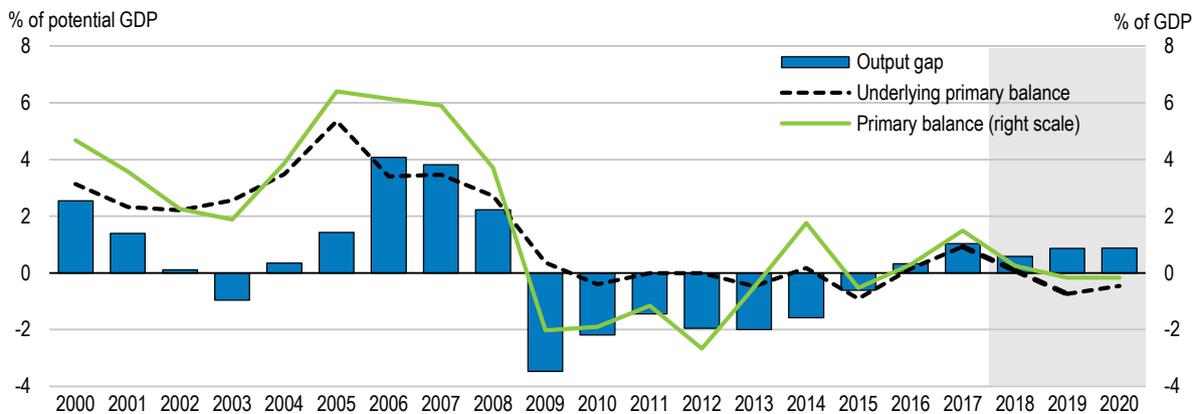
*Note:* The Taylor rule rate is calculated as: interest rate = annual real potential GDP growth + core inflation + 0.5 \* output gap + 0.5 \* (core inflation – 1.9).

*Source:* OECD Economic Outlook 104 database; Danmarks Nationalbank.

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Fiscal policy is broadly neutral in the near term based on OECD estimates (Figure 15). An apparent deterioration of the primary balance mainly reflects normalization of certain extraordinarily high tax revenues in 2017. Going forward, the fiscal stance is set to reach the Government's target of structural balance after 2020. In the fiscal bill for 2018, the Government nonetheless sustained demand for construction services, where labour shortages are already sizeable, by making the tax credits for repairs in private homes permanent. The deterioration of the underlying fiscal balance since 2007 was partly due to an increase in public investment to support demand through the crisis and recovery. As the economy recovered, the high investment level has not been reversed as had been planned, but the overall fiscal stance has tightened somewhat since 2010. Looking ahead, it would be prudent to let fiscal policy lean against the wind in the already capacity constrained economy. This would reduce the risk of a repetition of pro-cyclical fiscal policy seen in the mid-2000s.

**Figure 15. The fiscal policy stance is set to become broadly neutral**



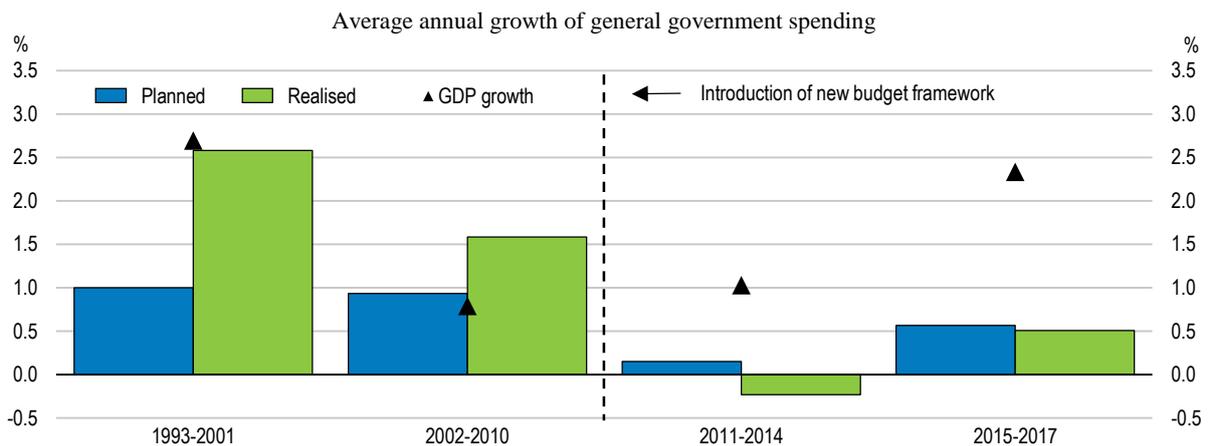
Source: OECD Economic Outlook 104 database.

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***The Budget Law has been effective, but could be refined***

OECD countries are increasingly relying on legally-based fiscal rules such as medium-term expenditure frameworks to maintain sound and predictable fiscal policies (OECD, 2019<sub>[30]</sub>). On this matter, the Danish experience has been impressive. Since the introduction of automatic sanctions on municipalities for spending above budgets in 2010 and later the national Budget Law in 2012, budget overruns have been eliminated (Figure 16). Some initial challenges of under-spending and money-burning towards the end of a budget year have evaporated as proficiency in budget planning improved in municipalities (Bæk, Andersen and Krahn, 2016<sub>[31]</sub>).

**Figure 16. The national Budget Law has eliminated public spending overruns**



Note: Planned government spending are taken from medium-term fiscal plans and revised according to national convergence programmes submitted to the European Commission. Realised growth of government spending differs slightly from national account figures. The reason is that planned spending rely on input methods, while standard national account measures rely on output measures.

Source: Danish Ministry of Finance (2014<sub>[32]</sub>); Danish Government (2010-2016); Statistics Denmark.

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The Danish medium-term expenditure framework is one of the most comprehensive across OECD countries in terms of scope and targets (OECD, 2019<sup>[30]</sup>), and includes a structural budget deficit limit at 0.5% of GDP, four-year expenditure ceilings, automatic sanctions on municipalities and regions in case of overspending and an obligation to maintain long-term fiscal sustainability. Nonetheless, the planned evaluation in 2019 should explore potentials for improvements. For example, the budget operated very close to the deficit limit during 2014-17. This raises concern that fiscal space could be unduly limited in a future economic downturn if fiscal buffers are inadequate, even more crucial given muted monetary policy. Within the current framework the deficit limit can be exceeded in exceptional circumstances, including severe economic downturns. The evaluation could consider the level of the lower limit, which according to EU estimates could be relaxed, potentially up to 1% of GDP. Over the longer term, this would allow public spending to respond to temporary demographic headwinds towards the middle of this century or public investment needs to address weak productivity growth (see Chapter). A drawback is that a lower limit may become a new focal point with the risk that policy makers relax the practice of maintaining sound public finances.

The upcoming evaluation of the Budget Law should also consider how to strengthen focus on efficiency and quality of spending at the different levels of government. For instance, performance budgeting is compulsory in most OECD countries, but is optional for ministries and agencies in Denmark and reported to be only medium effective (OECD, 2019<sup>[30]</sup>). Developing a more integrated approach to connect fiscal planning to evaluations and strategic goals should be pursued, among others by benchmarking public institutions to each other to facilitate adoption of best practices.

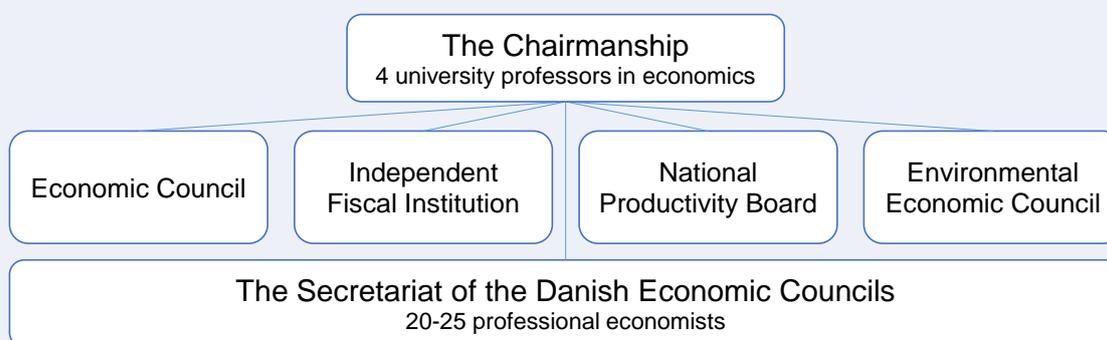
Comply-or-explain procedures can ensure enforcement of the budget framework. In Denmark, this is put into practice in connection with an annual assessment by the Danish Economic Councils in its role as an independent fiscal institution (fiscal council) (Box 3). The Government's decentralisation programme includes moving the Secretariat of the Danish Economic Councils from Copenhagen to Horsens in the western part of Denmark from 2019. A recent adjustment created a six-person satellite unit in Copenhagen, in part to help the Secretariat fulfil its role as fiscal council. However, this geographical split of an institution with a total staff of 30-35 people complicates the establishment of effective workflows and reduces the attractiveness of the institution.

Experience from similar moves of high-skilled public sector jobs in other countries has been mixed. The Office of National Statistics (ONS) in the United Kingdom lost 90% of its staff when its London site was moved to Newport with a detrimental effect on the quality of its work (Bean, 2016<sup>[33]</sup>). The Norwegian competition authorities also lost most of its staff, when it was moved from Oslo to Bergen, although operation resumed relatively fast (Asplan Viak, 2009<sup>[34]</sup>). Lessons from a large set of relocations in Scotland point to the need for careful consideration of the choice of location and implementation of such reforms to result in gains for regional economic development (Audit Scotland, 2006<sup>[35]</sup>). Against this background, the Government should ensure that the new setup allows the Secretariat to deliver high-quality analysis and advice.

### Box 3. The Danish Economic Councils

The Danish Economic Councils is an independent public institution with the mandate to critically assess and advice on fiscal policy and the economy more broadly. The institution was established in 1962, making it one of the oldest of its kind (von Trapp and Nicol, 2016<sup>[36]</sup>). The Chairmanship is assigned four distinct tasks and is supported by a relatively small secretariat (Figure 17). The integration of different areas and split between a chairmanship and a secretariat facilitates independent policy advice, creates synergies and ensures consistency. The Chairmanship reports to the Councils, which are comprised of high-level representatives from the Government, the Central Bank, social partners, non-governmental organisation and academic experts.

**Figure 17. The institutional setup of the Danish Economic Councils integrates four tasks**



Source: [www.dors.dk](http://www.dors.dk)

- *Economic Council* monitors the economy and analyses the long-term economic development. The Chairmanship delivers two reports per year to the Council. These reports include recommendations on macroeconomic and structural policies as well as economic projections.
- *Independent Fiscal Institution* assesses the soundness of public finances and compliance with the national Budget Law. A comply-or-explain requirement on the Government and the strong credibility of the institution ensures that recommendations are adhered without any formal power.
- *National Productivity Board* monitors and analyses productivity developments in an annual report, which also comprises assessment and recommendations on productivity-enhancing policy initiatives.
- *Environmental Economic Council* examines the interaction between the environment and the economy and assesses the efficiency of Danish environmental policies in an annual report.

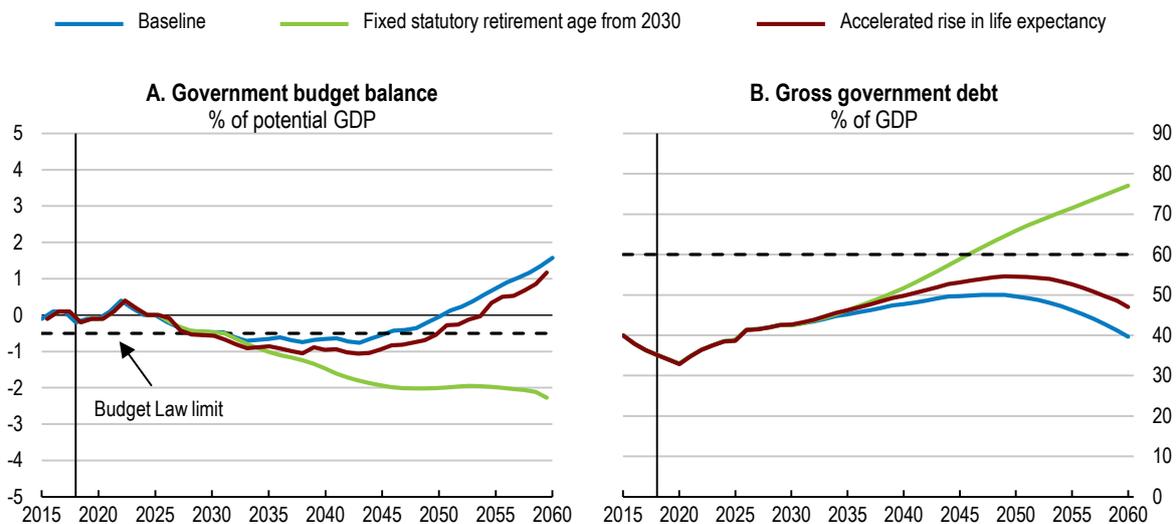
Over time, the institution has acquired a strong independent voice on economic policy, resulting in significant media coverage and political attention, reflecting a solid reputation that rests on the quality of analysis and the power of arguments.

## Higher public sector efficiency could add to fiscal sustainability

### *Linking retirement ages to life expectancy underpins fiscal sustainability*

Fiscal policy is considered to be sustainable (Danish Economic Councils, 2018<sup>[37]</sup>; Danish Government, 2018<sup>[38]</sup>; European Commission, 2018<sup>[39]</sup>) and public debt, at 36.1% of GDP in 2017, will remain well below the 60% limit of the Stability and Growth Pact in the long term (Figure 18). This reflects earlier reform, particularly linking the statutory retirement age to life expectancy as discussed in the 2016 *Survey*.

**Figure 18. Public finances will be sustainable if the retirement age increases as expected**



*Note:* The baseline scenario shows public finances under current and adopted policy rules, in particular that the statutory retirement ages are increased every five years as life expectancy increases (Figure 19, Panel A). The first alternative scenario assumes constant statutory retirement age at 68 and constant early retirement age at 65 from 2030. The second alternative scenario assumes that life expectancy rises by an additional year from 2026 compared to the baseline.

*Source:* OECD calculations based on Danish Ministry of Finance (2018<sup>[40]</sup>).

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Nonetheless, maintaining sound public finances will require prioritisation to avoid tax increases or spending cuts. As ageing accelerates resources are set to be reallocated towards healthcare and long-term care spending, which combined are projected to rise from 9.4% to 12.6% of GDP in the long term (European Commission, 2018<sup>[41]</sup>), potentially away from productive spending such as education. Implementing tax reform and other recommendations from this *Survey* would have a broadly neutral impact on the budget balance in the medium term (Box 4).

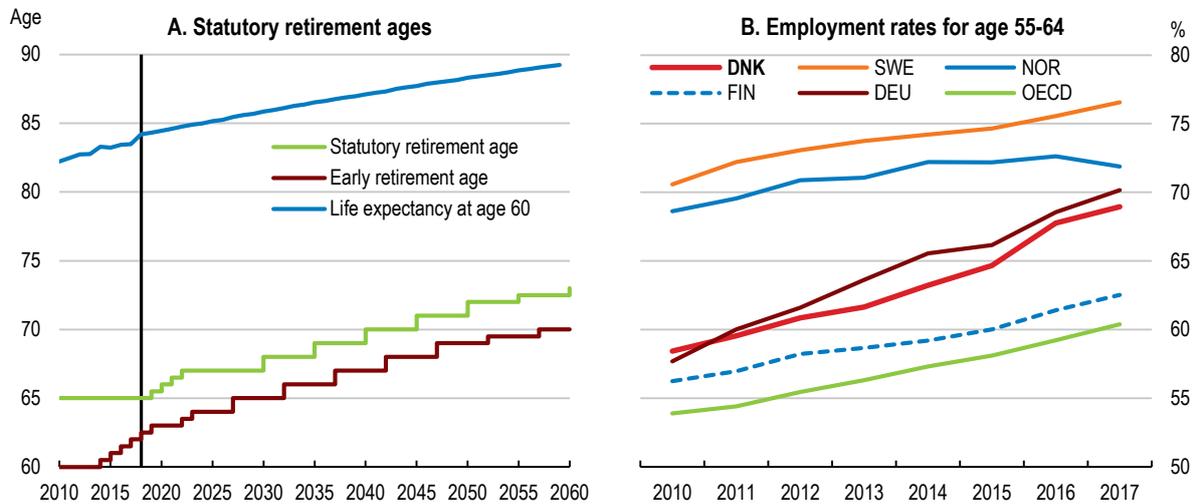
#### Box 4. Quantifying fiscal policy recommendations

The following estimates roughly quantify the fiscal impact of selected recommendations within a 5-10 year horizon, using simple and illustrative policy changes. The reported fiscal effects include behavioural responses when estimates are available.

**Table 5. Illustrative fiscal impact of recommended reforms**

Policy	Measure	Impact on the fiscal balance, % of GDP
<b>Deficit-increasing recommendations</b>		
Personal income taxation	Reduce the top marginal tax rate by 5 percentage points (from 56 to 51%).	-0.13
Taxation of dividends and realised capital gains	Reduce the highest tax rate by 5 percentage points (from 42 to 37%).	-0.03
Corporate income taxation	Implement an allowance for corporate equity (ACE).	-0.08
R&D business support	Increase spending on business R&D support by 10%.	-0.01
Early childhood education and care	Increase total spending by 5% to extend opening hours.	-0.06
<b>Deficit-reducing recommendations</b>		
Tax relief for interest expenses	Reduce the tax relief of interest expenses in personal income taxation to a uniform rate around 25% (from about 33% for expenses below EUR 6 700).	0.15
Inheritance taxation of family-owned businesses	Raise the tax rate from the reduced level at 5% to the regular inheritance tax rate at 15%.	0.05
Student grants	Reduce student grants for higher education by 20% combined with better options for public student loans.	0.06
<b>Total fiscal impact</b>		<b>-0.05</b>

Fiscal surpluses emerge in the second half of the century (Figure 18, Panel A), but are quite uncertain given the very long horizon and the sizeable rise in the effective retirement age needed to make this happen. The indexation mechanism lifts the statutory retirement age by up to one year every five years and targets a reduction in the expected retirement period to 14.5 years (Figure 19, Panel A). With current projections, this will imply an eight year rise in the retirement age (from 65 to 73) between 2018 and 2060, reaching the highest planned retirement age across OECD countries (OECD, 2017<sub>[42]</sub>). As additional years lived are generally in good health (OECD, 2017<sub>[43]</sub>), such a rise is achievable, but is quite ambitious as it implies that future retirees will have fewer expected years in retirement, both in absolute terms and as a proportion of their lifetime, compared to today's elderly.

**Figure 19. Higher early retirement age has contributed to rising senior employment**

Source: Danish Government (2018<sub>[38]</sub>); OECD Labour Force Statistics.

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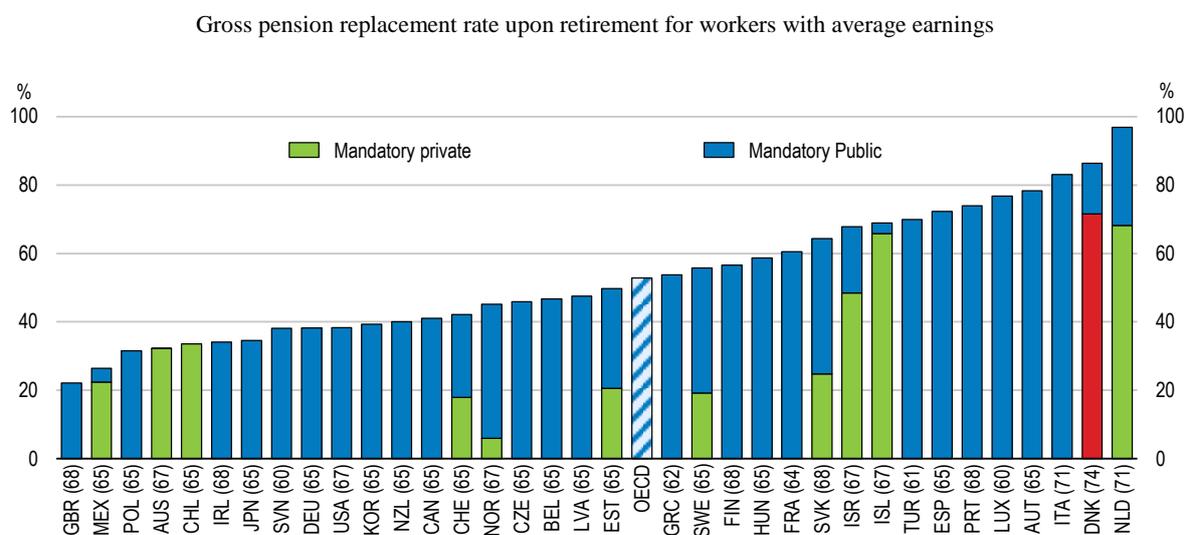
The main challenge is to ensure that seniors stay longer in the labour market so that the effective retirement age actually rises along with longevity. Experience from the first adjustment of the voluntary early retirement pension age starting in 2014 has been encouraging (Danish Ministry of Finance, 2017<sub>[44]</sub>) and has supported a significant increase in the employment rate among 55-64 year olds (Figure 19, Panel B). Measures have also been taken to encourage people in work to opt-out of the early retirement scheme; in the labour force below age 50, less than 10% will be entitled to early retirement when they reach the relevant age. Nevertheless, the senior employment rate remains below those of Norway and Sweden. Retaining the group of seniors above age 65 in the labour market may require additional measures such as ensuring greater age-neutrality in the functioning of the labour market (OECD, 2015<sub>[45]</sub>). Thorough evaluation of the upcoming rise in the statutory retirement age towards 2022 will thus be vital to assess the credibility of the long-term fiscal strategy.

At the same time, a rising group of people is likely to be in need of alternative support as the early retirement scheme is de facto being phased out. Entry into benefit schemes targeted to people with reduced work capacities (e.g. *ledighedsydelse* and flexi-jobs) has already increased among seniors (*jobindsats.dk*). By contrast, overall entry into the permanent disability scheme has declined significantly, following a reform in 2013 (2016 *Survey*). An evaluation of the reform detected large differences in the administration of rehabilitation programmes across municipalities and resulted in some adjustments in early 2018. Consideration should be given to develop better tools to identify those people with reasonable capacity to work at all ages and improve targeting of rehabilitation programmes. Data-driven profiling tools developed for active labour market programmes could form a useful starting point. This would also allow for removing the arbitrary lower-limit at age 40 for assigning permanent disability pension.

### Getting pension savings right for all remains a challenge

The funded occupational pension scheme is a vital pillar of the long-term sustainable public finances. While the system is still maturing, households have already accumulated aggregate pension savings of almost 200% of GDP in 2018. Combined with tax-financed public pensions this ensures that average pension payments could reach almost 90% of average earnings by 2070 from a full career of contributions (Figure 20), a figure surpassed only in the Netherlands. The Danish pension system is thus exceptionally robust to ageing, yet consideration should be given to address at least three issues, which will become more pressing as pension savings rise further.

**Figure 20. The pension replacement rate is projected to reach almost 90% by 2070**

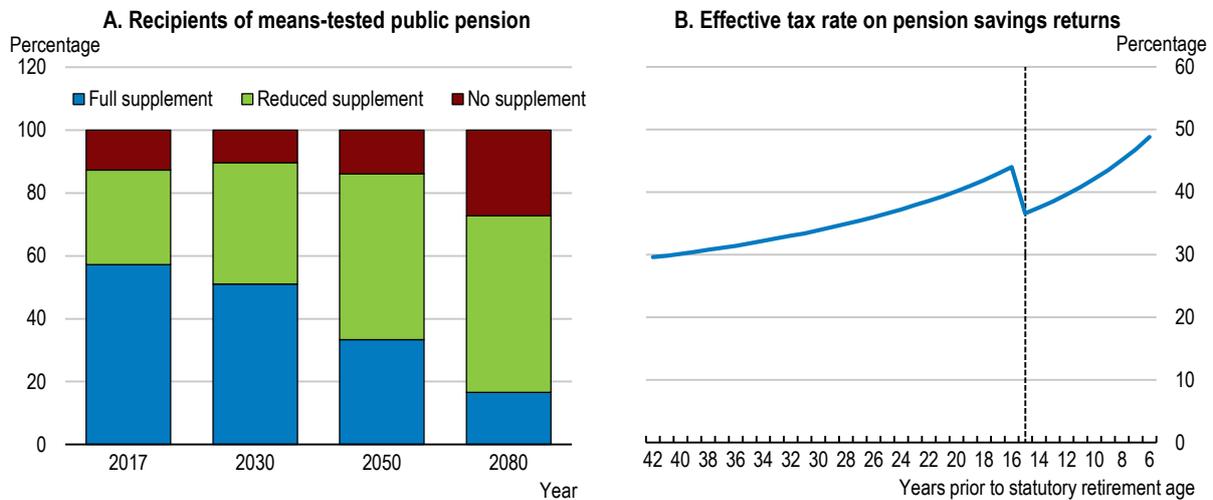


Note: Sum of all pension benefits in per cent of average earnings over working life, reported for person with average earnings. Expected retirement age in year 2070 reported in parenthesis.

Source: OECD Pensions at a Glance 2017.

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First, balancing protection from public means-tested pensions against incentives to work and save for individual pensions, as discussed in the previous *Survey*, remains a challenge. The public pension system provides a basic benefit and a means-tested supplementary benefit (OECD, 2017<sub>[42]</sub>). Projections indicate that more than half of pensioners by 2080 will be in the phase-out income interval of the public supplement (Figure 21, Panel A), thus facing high marginal taxes on continued work and pension savings prior to retirement. To address this, the Government recently introduced additional tax deductions for pension contributions (Table 6), with deductions rising 15 and five years prior to the statutory retirement age (Figure 21, Panel B). While this is welcome, consideration should be given to reform means testing as well to better target those with high disincentives. Moreover, a rising group of high-income pensioners, approaching 30% by 2080, will not receive the supplement (Figure 21, Panel A), implying they will profit from favourable taxation of additional pension savings (Figure 13). The new measures also amplify the complexity of the tax and pension system further with the risk that people focus e.g. on reducing tax payments rather than setting pension savings at a desirable level.

**Figure 21. Age-dependent tax deductions address high marginal taxes from means testing**

*Note:* The full public pension supplement benefit amounts to EUR 11 100 per year before taxes in 2019 (received by the blue bar shares in Panel A). It is reduced by 30.9% of income from contributory pensions above EUR 9 700 (green bars) and is fully phased out at EUR 45 800 per year (red bars). Panel B shows the effective tax rate on returns to private pension savings for an average earner facing reduced public supplement benefits upon retirement. It includes the tax deductions at the time of contribution, recurrent taxation of pension returns at 15.3%, income taxation of benefits and the reduced public supplement benefit as a result of means testing. The kink reflects an increase in tax deduction for pension contributions 15 years prior to the statutory retirement age.

*Source:* Danish Ministry of Finance (2017<sub>[20]</sub>); Danish Ministry of Taxation (2018<sub>[46]</sub>).

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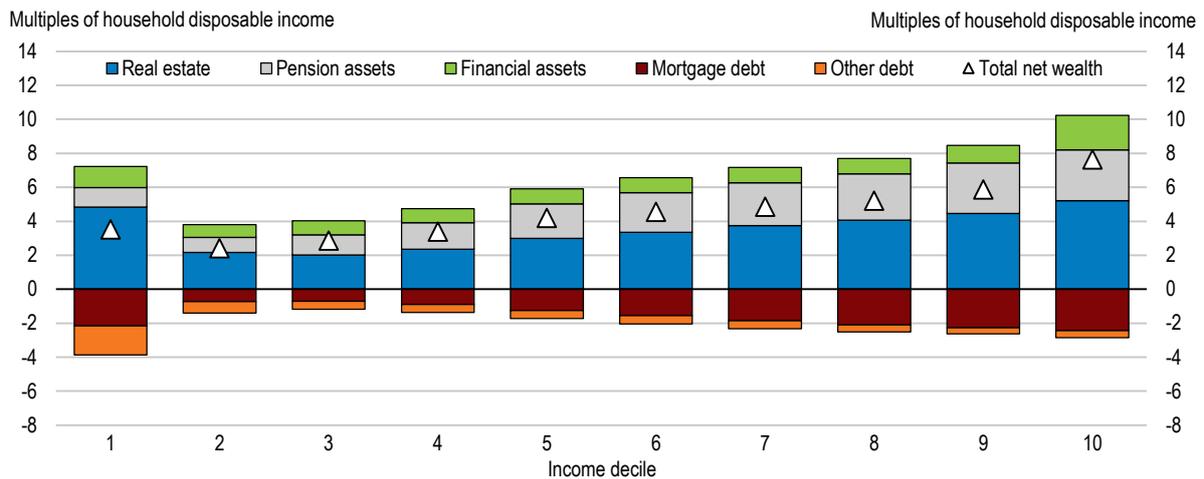
Second, a non-negligible group will still have no or very little pension savings in the future. By 2080, 17% of pensioners will receive the full public pension supplement according to projections (Figure 21, Panel A). They risk retirement with relatively low income and modest consumption possibilities. Nonetheless, as long as they qualify for full public pension they will benefit from high replacement rates upon retirement. Public finances could come under pressure to preserve an inclusive society, in particular as immigrants often face reduced public pensions because of a residence requirement (Danish Ministry of Finance, 2017<sub>[20]</sub>). In the fiscal bill for 2019, the Government decided to adjust public pensions fully to wage growth in the future, moving away from slightly reduced uprating (*satsreguleringen*). It also took a welcome first step to introduce mandatory pension savings for all by increasing uprating of public cash transfers for those out of work and reserving the increase for individual pension saving (Danish Government, 2018<sub>[47]</sub>).

Third, pension savings comprise a sizeable part of household assets (Figure 22), which can create maturity mismatches for household balance sheets. This vulnerability is a particular concern for Denmark since households hold the largest gross debt level across OECD countries (Figure 9). Household leverage is highest among the more affluent households and in the bottom of the income distribution, while buffers in the form of financial assets compose a relatively small part of total assets across the income distribution (Figure 22). Substantial balance sheets create exposure to short-term asset prices and interest rate shocks. For instance, large drops in house prices during 2008-09 caused technical insolvency among 10% of homeowners (Skak and Bloze, 2013<sub>[48]</sub>). In these cases sudden loss of income, e.g. due to unemployment, family breakdown or disability can create severe

economic distress. Pension savings are not usually unlocked ahead of time to use as buffer in such circumstances, and are taxed at 60% if they are.

**Figure 22. Household net wealth is sizeable across the income distribution, but assets are mostly illiquid**

Household assets and liabilities in multiples of household disposable incomes by deciles, 2017



**How to read this figure:** The bars show the composition of household assets and liabilities across the income distribution as a multiple of disposable income for each decile. The first decile covers households with the lowest incomes and as a result assets and liabilities are very large when measured in multiples of disposable incomes. Net wealth spans from around three times disposable income in the bottom to more than seven times in the top of the income distribution. Yet, wealth that can readily be converted into cash (financial assets) is on average less than annual disposable income across the distribution.

*Note:* Real estate includes cars. Pension assets are recorded net of taxes.

*Source:* OECD calculations based on Statistics Denmark.

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A first step to reduce such vulnerabilities have been taken on the liability side by lowering the number of households with large debt-to-income ratios as discussed above. However, balance sheet expansion is, for people free of means testing, implicitly subsidised since pension saving returns are taxed at a 15.3% rate, while interest rate expenses are deductible at a rate of 33.5 or 25.5% (see above). Steps should also be taken to increase liquidity of the asset side as a means to reduce cyclical vulnerabilities. This could include better options for unlocking pension savings in exceptional circumstances. More fundamentally, adjustments of the uniform mandatory pension contribution rates over the lifetime could be considered. Social partners set the rates through collective bargaining, reaching 12-18% of gross earnings across different occupational groups since around 2010 (Danish Ministry of Finance, 2017<sub>[20]</sub>). As working lives and contribution periods expand with the indexation of retirement ages to life expectancy, it is likely that some groups could reach excessive pension savings. This is emphasised by the model-based average replacement rate approaching 90% by 2070 (Figure 20), a high level if households e.g. hold sizeable housing wealth in addition.

In sum, getting work and pension savings incentives right for all is a complex and difficult task with no perfect solution. A Pension Commission was appointed in 2014 to deliver in-depth analysis and recommendations, but it was stopped a year later without finalising the

work. Even without a wholesale re-evaluation of the pension and tax system, a review to consider ways to reduce complexity and ease personal financial planning for all should be considered.

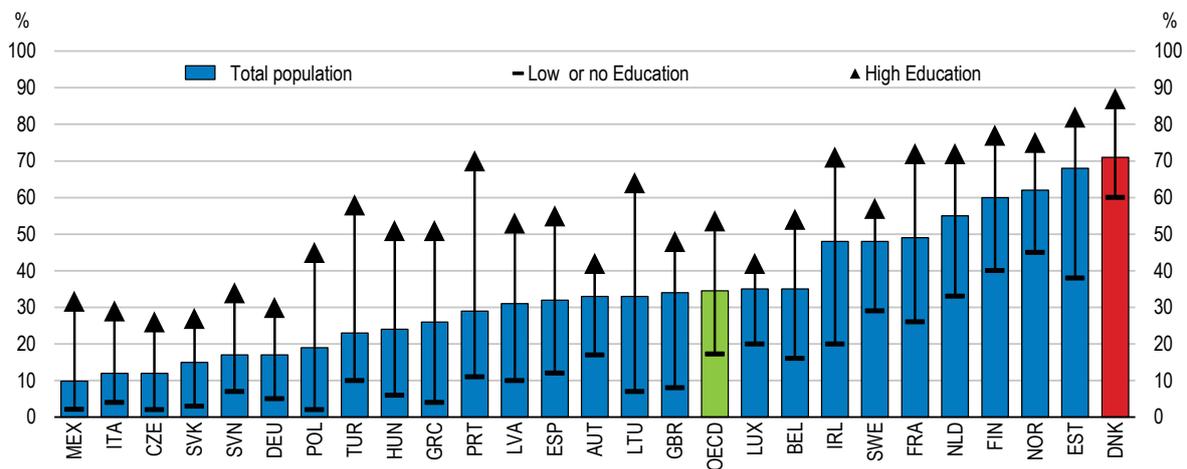
### *Barriers to foster public sector innovation persist*

Sound public finances rest not only on well-designed tax and pension systems with clear employment incentives. Promoting public sector innovation and productivity gains are essential to raise prosperity and free up increasingly scarce labour resources (OECD, 2017<sup>[49]</sup>). In this respect, the use of new technologies and digitalisation are already among the highest across OECD countries. Initiatives cover a broad range such as:

- The use of digital solutions and digital communication with all public authorities became mandatory by a decision in 2012 with a few exceptions for vulnerable groups (Figure 23).
- Tele-medicine, among other in ulcer care and of patients with chronic obstructive pulmonary disease (COPD), and roll-out of assistive technology in social and elderly care are boosting quality and cutting costs (OECD, 2016<sup>[50]</sup>).
- Data is starting to drive innovation and public sector reform. Register-based data on hours worked and earnings facilitated unemployment benefit insurance reform in 2017, including digital access to detailed labour market history for both the unemployed and caseworkers (Danish Unemployment Benefit Commission, 2015<sup>[51]</sup>).

**Figure 23. Digital communication with the public sector is high**

Individuals using the Internet for sending filled forms via public authorities' websites in the past 12 months, by education level, 2016



Source: OECD Government at a Glance 2017.

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Nevertheless, developing and implementing digital solutions are not without risks and costs. Over the last five years, almost 30% of all larger ongoing ICT projects in the public sector received a yellow or red light from the surveillance board (Danish Council for ICT,

2018<sup>[52]</sup>), indicating budget overspending or project delays, or significant risk hereof. Reinforcing strategic planning and making better use of existing tools should be pursued (OECD, 2017<sup>[53]</sup>). Further initiatives have been taken by the Government in order to improve public sector efficiency, including a focus on digitisation-ready legislation. Still, a more integrated approach is needed and should among other focus on complementing technical ICT skills with cognitive skills that are crucial for labour-intensive public services.

Since 2016, a dedicated minister for public sector innovation has been tasked to simplify procedures and reduce bureaucracy under a broad “Collaboration” reform agenda (Table 6). A key challenge is to improve integration of public systems to raise quality for citizens and ensure consistency across different social and health services. This could free up time and resources for employees to focus on their core tasks through better information sharing, while avoiding overlaps and duplication across services and administrative levels. The first leg of the reform process has simplified processes in long-term care to free more time to actual care. Initiatives also reduced high administrative costs from extensive use of applications for smaller grants and funds throughout the public sector. The collaboration reform agenda is welcome and the gradual implementation will provide for achieving successful results.

Enhancing management is key to improve efficiency in the public sector. On this matter, a Management Commission identified the use of centralised and detailed collective agreements for each occupation as one obstacle for efficient management at the workplace level (Danish Management Commission, 2018<sup>[54]</sup>). The Commission also pointed to a weak culture for dismissing poor performing managers and recommended a stronger focus on deliverables based on data to quantify the impact of core tasks. This should be pursued within the broader context of reforming the budget framework to focus also on quality of spending discussed above.

Centralised wage bargaining and low wage dispersion is also likely to work as a barrier for innovation and productivity growth within the public sector (Danish Productivity Commission, 2013<sup>[55]</sup>). Only 10% of total compensation of employees is negotiated at the workplace, while the main part is allocated through centralised bargaining. This contrasts with the organised decentralisation used in the private sector, characterised by general sector-level agreements with substantial room for lower-level agreements, and found to deliver good labour market performance (OECD, 2018<sup>[56]</sup>). While performance is more difficult to measure in the public sector and delivery of good services often depends on the effort of a group of people, further decentralisation of wage bargaining should be considered.

This would give managers and employees an incentive to formulate clear objectives and could motivate employees to improve performance. A more decentralised wage setting would also strengthen recruitment opportunities, supporting reallocation of labour resources geographically and across occupations as demand for welfare services change, among other due to ageing and technological development. Implementation would need to address and monitor some likely downsides. Mechanisms are needed to ensure that bargaining at the institutional level comply with the fiscal spending ceilings. Gender differences is also a particular concern since public sector employees are dominated by women, who tend to achieve poorer economic results than men do in bargaining.

**Table 6. Past OECD recommendations to ease public expenditure pressures**

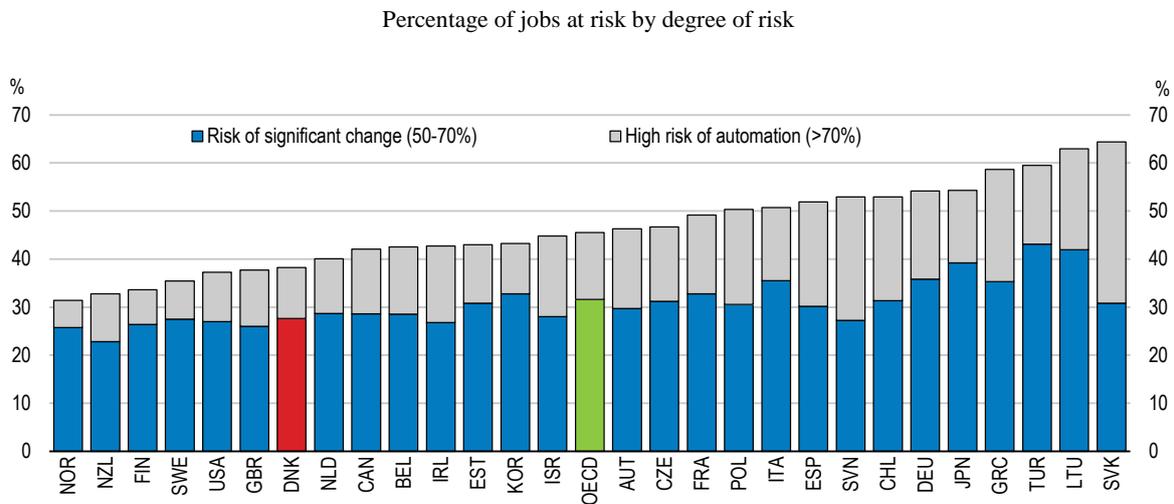
Recommendation	Action taken since the 2016 Survey or planned
Allocate a permanent disability pension only to those with permanent incapacity to work regardless of age.	No specific action taken.
Reduce disincentives and barriers to work at older ages originating from public and occupational design.	A reform of the pension system from June 2017 and a tax reform from February 2018 strengthen incentives for older workers to stay in the labour market by: <ul style="list-style-type: none"> <li>- An opening to opt-out of voluntary early retirement scheme and have contributions returned free of taxation.</li> <li>- Tax deduction for pension annuity savings raised for workers five years or less from statutory retirement age.</li> <li>- Additional tax deduction for pension savings targeted to workers 15 years or less from statutory retirement age.</li> <li>- Earned income tax credit broadened to cover pension contributions.</li> </ul>
Use autonomy of local governments better for drawing lessons from the diversity of approaches in providing social services, which should also strengthen accountability for outcomes.	A second round of the “Free Municipality” initiative is ongoing. Lessons from first round in terms of rule simplification and more efficient procedures is being implemented via knowledge transfer or change in legislation.
Integrate welfare, prevention and rehabilitation services to improve provision of public services.	Further integration and coordination of welfare policies (e.g. social, employment, and education policies) is made possible by giving citizens with complex and transverse problems one coordinated plan for the delivery of social services.
Make general practitioners more responsible for the continuity of care.	A collective agreement for general practitioners from September 2017 improves the responsibility for continuity of care in general and specifically for patients with COPD, Type 2 Diabetes and patients treated for cancer.
Encourage the private supply of welfare services to offer more choice while at the same time reaping efficiency gains.	An examination on the potentials from increased public-private cooperation in new areas has been initiated with Local Government Denmark and Danish Regions.

## Ensuring equal opportunities to benefit from technological changes

### *Labour market policies need to adapt to the future of work*

New technologies and globalisation are changing labour markets, creating new opportunities and new forms of work, but also displacements and a need for adapting policies (OECD, 2017<sup>[57]</sup>). Manufacturing employment has declined by around one third since the mid-1990s, which is among the largest declines across OECD countries. At the same time, globalisation and trade have had an uneven impact across regions (Deloitte/Kraka, 2017<sup>[58]</sup>), although the current gap in unemployment rates across regions is among the smallest across OECD countries.

Automation and disruptive technologies could fundamentally change many jobs in the future. While projections should be taken with much care, cross-country analysis suggests that around 10% of jobs in Denmark face high probability of automation, which is among the lowest in OECD countries (Figure 24). This partly reflects an already high level of digitalisation and use of industrial robots compared to other countries (see Chapter). So far the pace of automation has been similar to previous waves of technological change (McKinsey & Company, 2017<sup>[59]</sup>), but the impact of artificial intelligence, Internet of Things and other technologies is hard to gauge and could turn out to change the nature of work quite fundamentally in many areas – as have previous waves of technological innovations.

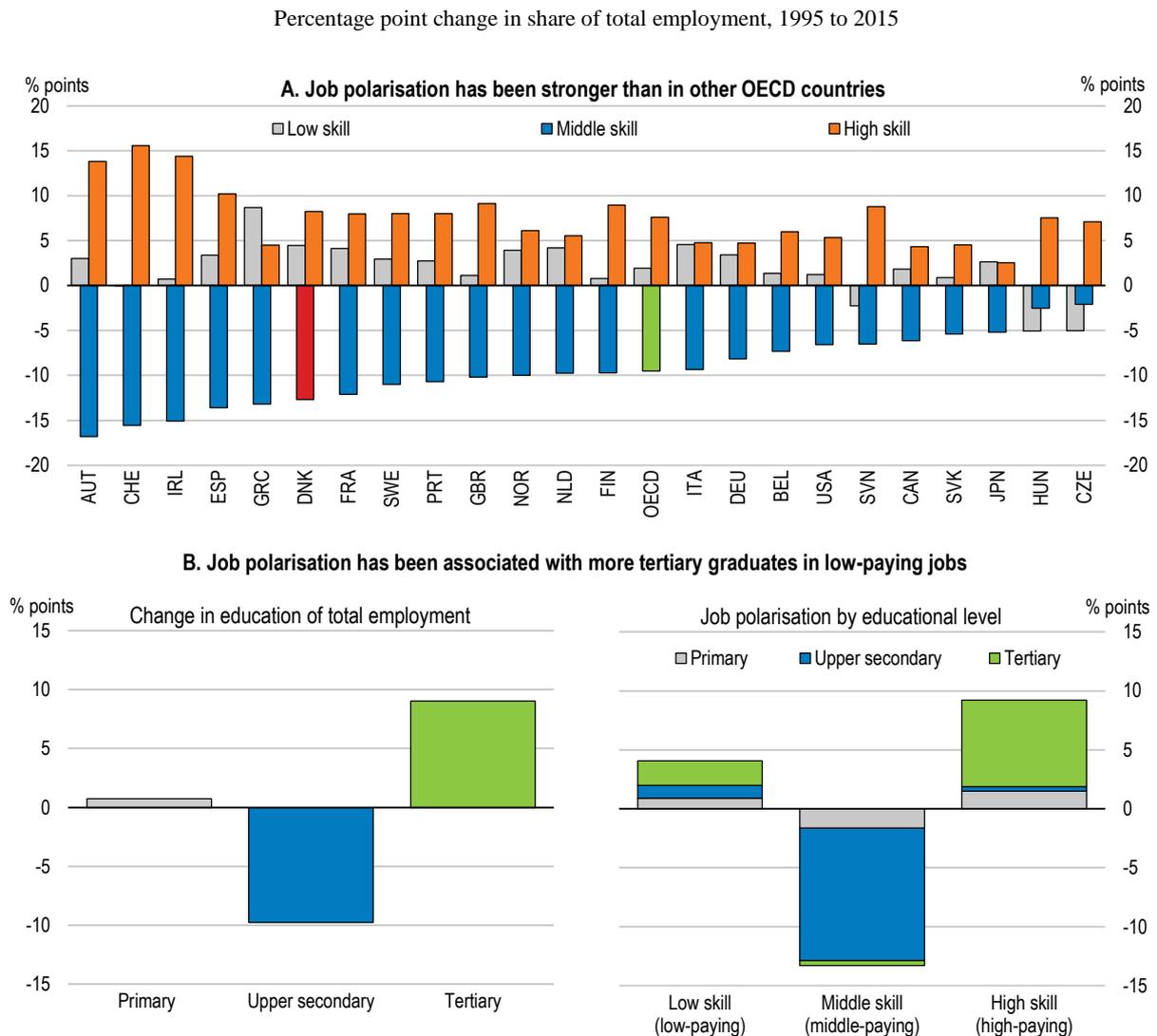
**Figure 24. Jobs at risk of automation is lower than in other OECD countries**

Source: Nedelkoska and Quintini (2018<sub>[60]</sub>).

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Middle skill occupations have declined substantially since the mid-1990s and resulted in a polarisation of the labour market into high-skill/high-paying jobs and low-skill/low-paying jobs like in most OECD countries (Figure 25, Panel A). While this would indicate a growing market for low-paying jobs, it conflicts with a relatively stable earnings distribution and relatively high sectoral minimum wages, enforced through extensive coverage of collective agreements. Closer examination of the jobs labelled as low-skilled shows that tertiary graduates fill about half of the four points rise in the employment share during 1995-2015 (Figure 25, Panel B). This may reflect rising skill mismatches and misalignment between education supply and labour market demands as persistently high unemployment rates in some fields indicate (Danish Ministry of Higher Education and Science, 2018<sub>[61]</sub>). Further steps should be taken to better align educations towards future labour market demands (see Chapter).

**Figure 25. Job polarisation largely reflects educational upgrading, but high educated have filled more low-skill jobs**



**How to read this figure:** The share of workers employed in middle skill jobs, classified according to broad occupation groups and ranked by average wages, has declined in all available OECD countries (Panel A). In return, the share in high-skill jobs has increased sizeably, but in some countries, including Denmark, the share in low-skill jobs has also risen significantly, causing polarisation. The left figure in Panel B shows the underlying educational upgrading for Denmark, with more tertiary graduates and fewer with upper secondary education only. The right figure in Panel B replicates Denmark's job polarisation from Panel A and shows how the change in education levels is distributed across skill levels. Noteworthy, tertiary graduates drive half of the (small) rise in low-skill jobs, raising concerns for skill mismatches. See OECD (2017<sup>[57]</sup>) for detailed definitions.

Source: OECD Employment Outlook 2017; Eurostat.

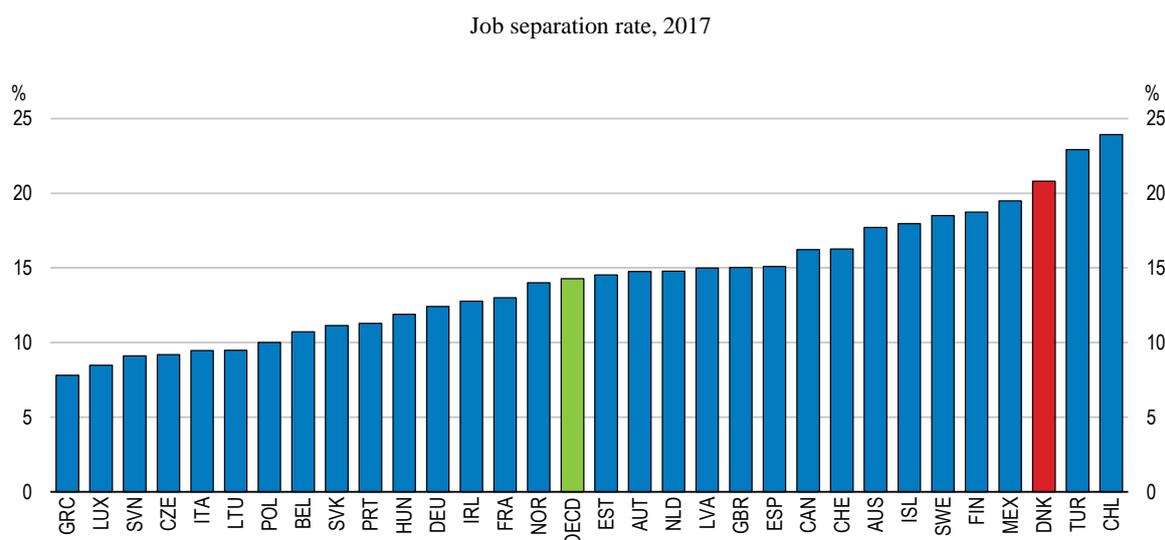
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*Inclusiveness is high, but active labour market policies are costly*

Labour market performance is among the best in OECD countries according to the OECD *Jobs Strategy* dashboard (OECD, 2018<sup>[62]</sup>). Denmark is a top performer in inclusiveness

along with the other Nordics and scores high in terms of job quantity and job quality. This is all the more impressive given the high turnover in the labour market (Figure 26), a key characteristic of the Danish flexicurity model (see 2016 *Survey*). Ensuring a dynamic and inclusive labour market is at the core of the most recent OECD *Jobs Strategy*, focusing on the challenges of changing labour markets and facilitation of new forms of work (OECD, 2018<sub>[62]</sub>).

**Figure 26. High turnover supports strong and inclusive labour market performance**



*Note:* Data refer to the difference between the hiring rate and the net employment change.

*Source:* OECD Employment and Labour Market Statistics; Statistics Denmark.

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A number of steps have been taken to adapt labour market policies to the future of work:

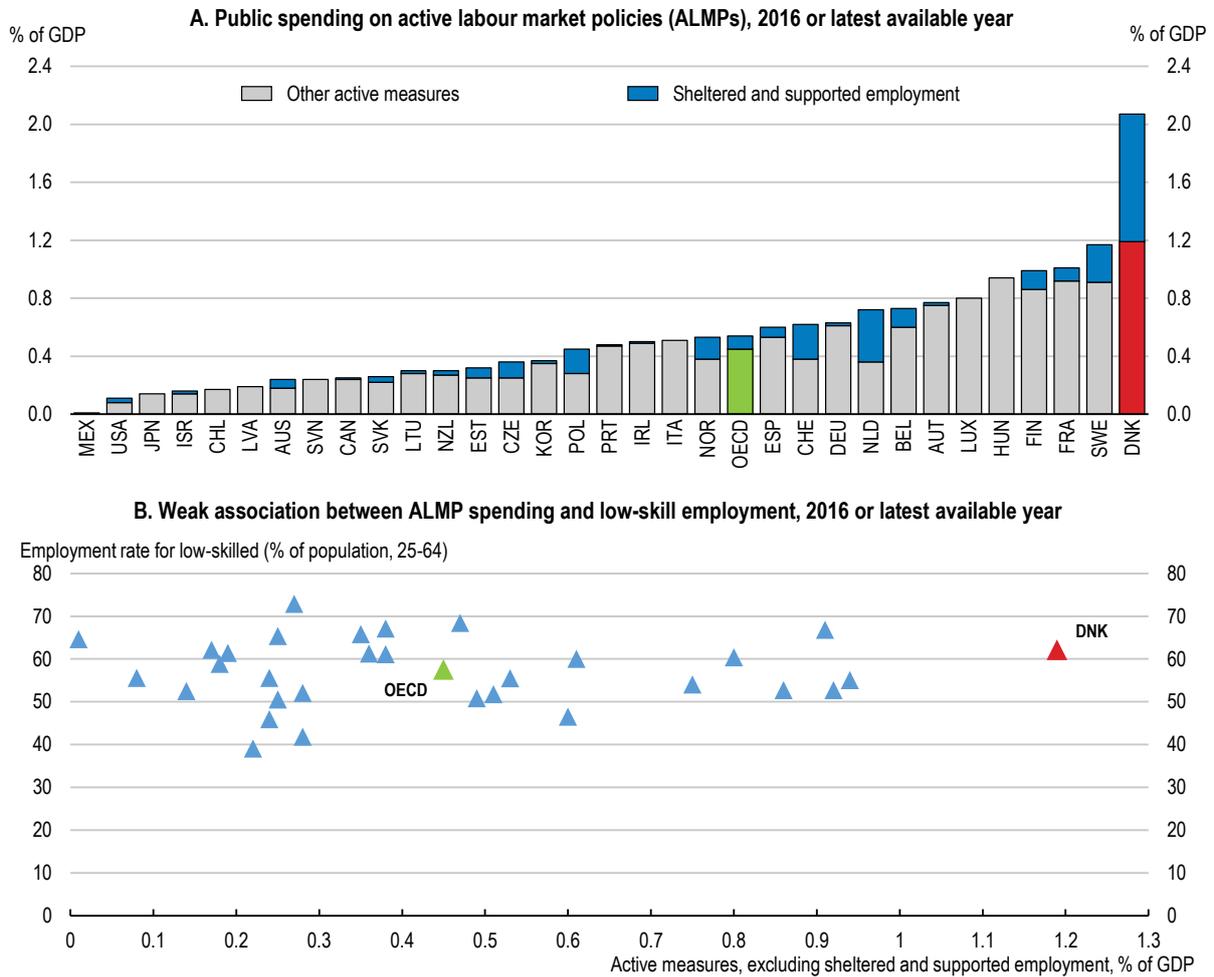
- A new unemployment insurance system for self-employed and non-standard workers has been implemented from October 2018. The main idea is to align the system as much as possible with unemployment insurance for standard workers by basing entitlement on past income to achieve neutrality across all forms of employment. To claim unemployment insurance, self-employed still have to close their business, but this has been simplified by digitalisation.
- An opening for unskilled adults to enrol in vocational education for up to two years and receive compensation at 80% of unemployment insurance benefits was introduced in 2015. Yet, uptake has been very low, which could reflect vast employment opportunities and some resistance towards formal education within this group (EVA, 2017<sub>[63]</sub>).
- A tripartite agreement between the social partners and the Government was reached in 2017 with the aim to make adult education, training and upskilling more flexible and accessible (Danish Government, 2017<sub>[64]</sub>). Initiatives include resources to facilitate reallocation and to ensure basic skills for all, higher compensation during training and a one-stop entry to programmes facilitated by a digital platform.

Participation in the unemployment insurance system is voluntary, albeit strongly subsidised by tax revenues, with the risk that mainly non-standard workers with high unemployment risk will enrol in the new scheme (adverse selection). Encouraging widespread enrolment will be important to ease cost-pressures in a future with more non-standard workers, for instance by relying on nudging measures.

Likewise, maintaining high participation in lifelong learning is crucial in a changing labour market, but a stronger focus on cost-efficiency is needed. ALMP spending amounts to more than 2% of GDP, much more than in Sweden in second place (Figure 27, Panel A). The gap to other countries is largely driven by extensive use of sheltered and supported employment for people with reduced work capacities, especially flexi-jobs that are granted for five years at a time for people below age 40, but can be made permanent for those above age 40. But even without this spending item, Denmark still spends the most on ALMPs, while the employment rate for low-skilled is not far from the OECD average and countries spending much less on ALMPs (Figure 27, Panel B). Activation of sick-listed workers is one area in need of reform, or at least further analysis, as a randomised controlled-trial finds no or even negative effects on subsequent labour market outcomes (Rehwald, Rosholm and Rouland, 2018<sup>[65]</sup>).

Wage subsidies for private sector jobs is a favoured ALMP measure as evaluations find it to be the most effective tool (jobeffekter.dk). Nevertheless, used in large scale it raises the risk that jobs that would have been created in any case receive tax-financed subsidies. In this respect, the tradition of evaluating different ALMP programmes through randomised experiments to improve quality and targeting should be continued. Currently, evaluations take place against a baseline of relatively extensive use of ALMP measures, which should be broadened to also test reductions from the current high level of active support and potential crowding-out effects should be quantified. This could be implemented by making some mandatory ALMP measures voluntary for a random group of people in order to preserve the legal right to support.

**Figure 27. Spending on support to find new jobs is very high**



1. Below upper secondary education.

*Note:* Sheltered and supported employment includes rehabilitation. For Denmark, the flexi-job scheme makes the bulk of this spending category.

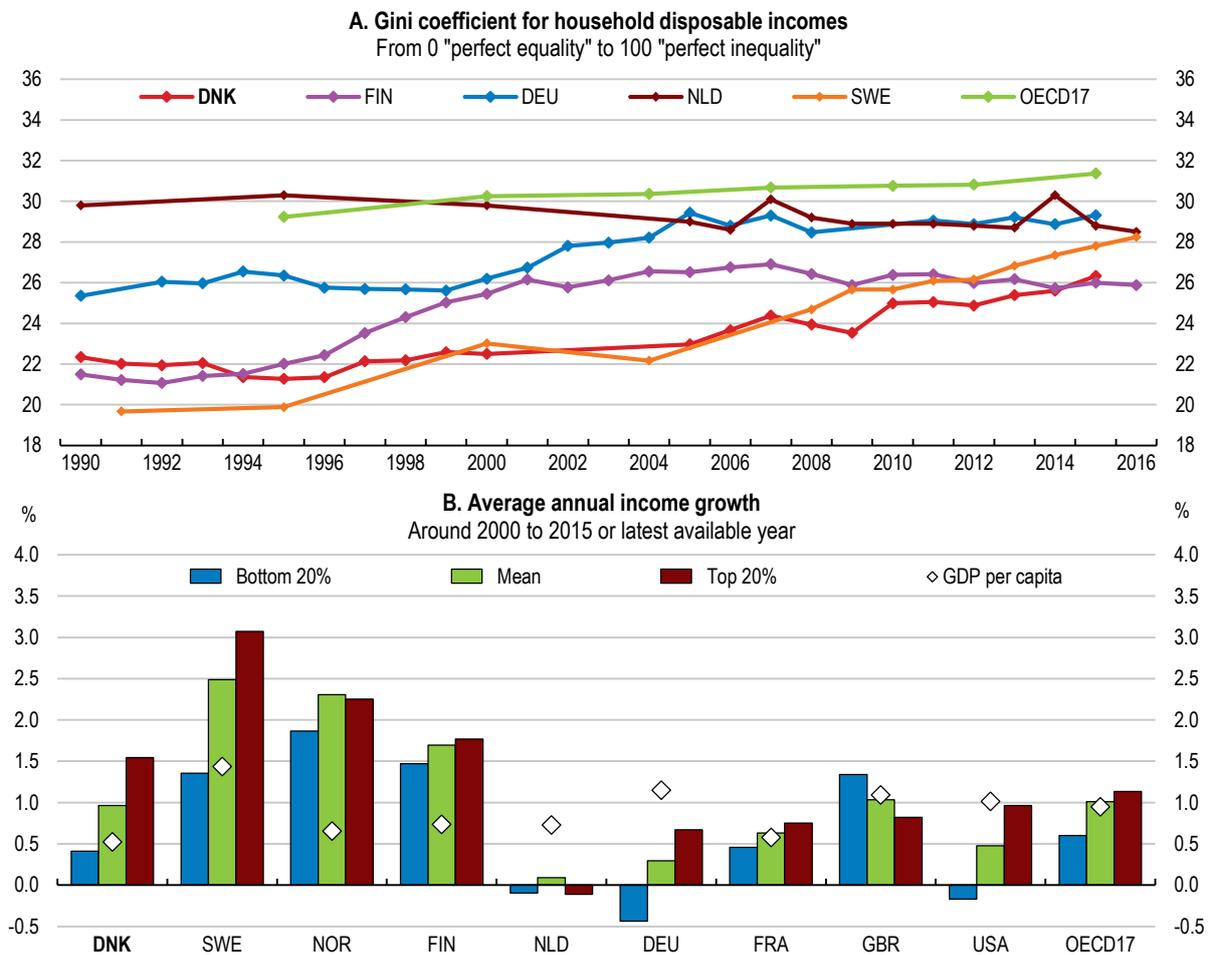
*Source:* OECD Labour Force Statistics; OECD Education at a Glance database.

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***Balancing work incentives and redistribution from taxes and transfers***

Income inequality is at a very low level and Denmark remains among the most equal countries. Income inequality has risen faster than in most OECD countries from the particularly low level in the early-1990s (Figure 28, Panel A). Nonetheless, thanks to a well-functioning labour market as well as systematic uprating of public transfers to wages and prices (*satsreguleringen*), incomes have risen for all income groups, which contrasts with developments in Germany and the United States where real incomes in the bottom 20% have declined over the period 2000-2015 (Figure 28, Panel B). This is also reflected in a stable, or even rising, labour income share in Denmark (OECD, 2018<sub>[56]</sub>).

Figure 28. Inequality remains low, despite its increase since the mid-1990s



Note: OECD17 is a simple average across 17 OECD countries (Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Israel, Italy, Japan, the Netherlands, Norway, New Zealand, Sweden, the United Kingdom and the United States).

Source: OECD Income Distribution Database.

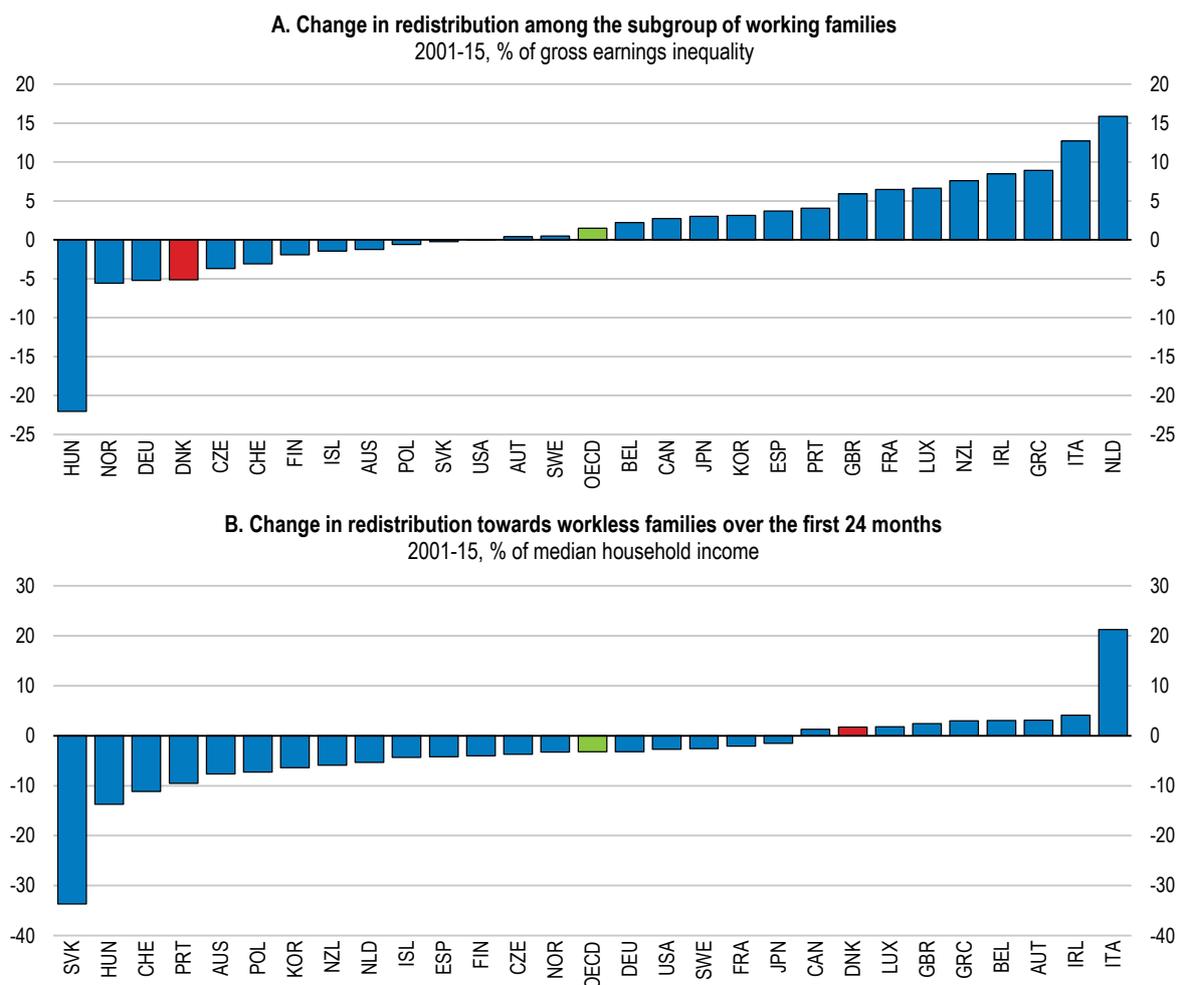
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Changing household structure, in particular more students and single-adult households, increasing immigration and ageing can explain a sizeable part of the rise in household income inequality (Pareliussen and Robling, 2018<sup>[66]</sup>). Nevertheless, Denmark has also been subject to some of the same drivers observed in other OECD countries (Pareliussen et al., 2018<sup>[67]</sup>), such as skill-biased technological change and globalisation, creating greater dispersion of earnings (Dahl, le Maire and Munch, 2013<sup>[68]</sup>; Danish Economic Councils, 2016<sup>[69]</sup>). A high degree of unionisation and coverage of collective wage bargaining agreements have, however, limited the widening of earnings inequality and the wage distribution in Denmark is still much more compressed than in other countries.

OECD Tax-Benefit models indicate that the redistributive effect of taxes and benefits among working families at different earnings levels has been reduced over the period 2001-2015 (Figure 29, Panel A) (Browne and Immervoll, 2018<sup>[70]</sup>). In contrast, redistribution from working families towards families in unemployment has remained stable and not

declined as in the majority of OECD countries (Figure 29, Panel B). Combined, these results suggest that tax-benefit reforms have upheld the social safety net, notably in the initial period of unemployment, while higher inequality through lower and less progressive taxes may have been traded off with policies to strengthen work incentives. Still, Denmark started from a high and progressive level of taxation and the top marginal tax rate remains among the highest across OECD countries (see Chapter).

**Figure 29. Taxes and transfers have become less redistributive between working families**



**How to read this figure:** Among the group of working families at different income levels (Panel A), direct taxes and cash transfers reduce inequality less in 2015 than in 2001 in Denmark, when fixing population structure and the earnings distribution. The decline in redistribution amounts to 5% of gross earnings inequality. In contrast, redistribution from working to workless families is unchanged or slightly higher in Denmark in 2015 compared to 2001 (Panel B), when fixing population structure and earnings distribution and considering only the first 24 months of unemployment. The increase in average out of work benefits amounts to 1.7% of median household incomes.

*Note:* Indicators for incomes and inequality of working and workless families are constructed as a weighted average of multiple family types from OECD TaxBen models, seeking to explain the maximum amount of variation across countries and time in a single index. The results should be interpreted as suggestive since they are based on a limited number of family types and a stylized modelling of tax and transfer systems. See Browne and Immervoll (2018<sup>[70]</sup>) for further details of the methodology.

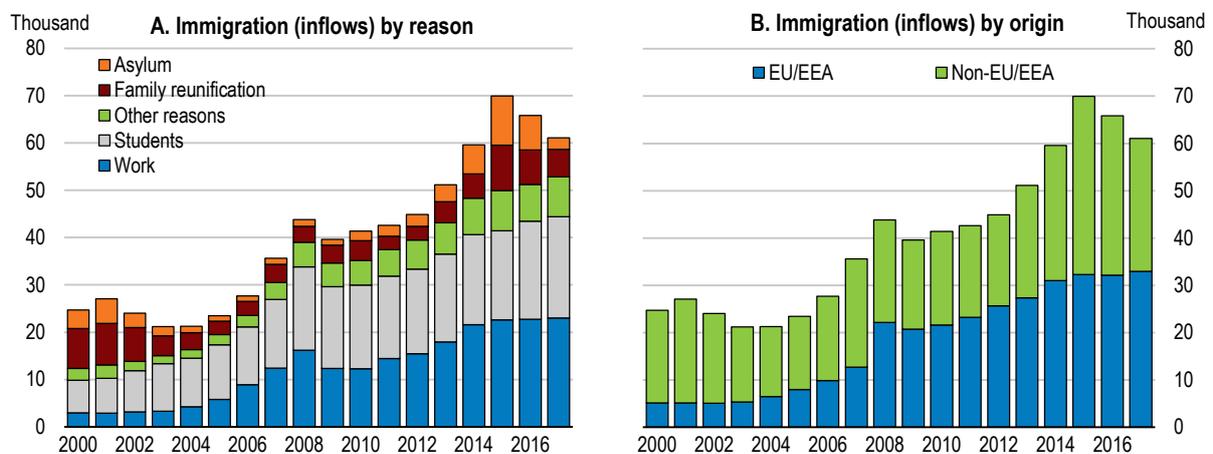
*Source:* Browne and Immervoll (2018<sup>[70]</sup>).

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### *Integration of refugees and migrants can be improved*

Immigration to Denmark has increased substantially during the recent decade, primarily driven by a sizeable rise in the inflow of EU citizens with a work purpose and foreign students (Figure 30). Most of these groups only stay for a limited period before leaving the country again. By contrast, integrating the sizeable number of refugees and family reunifications arriving during 2014-2016 into the labour market remains a challenge. The employment rate for refugees and related family reunifications with at least three years of residence has risen from 20% in 2015 to 45% in 2018, but remains as low as 20% for women (integrationsbarometer.dk). Moreover, weak labour market participation also persists for those arriving prior to 2015.

**Figure 30. Immigration has increased substantially due to foreign workers and students**

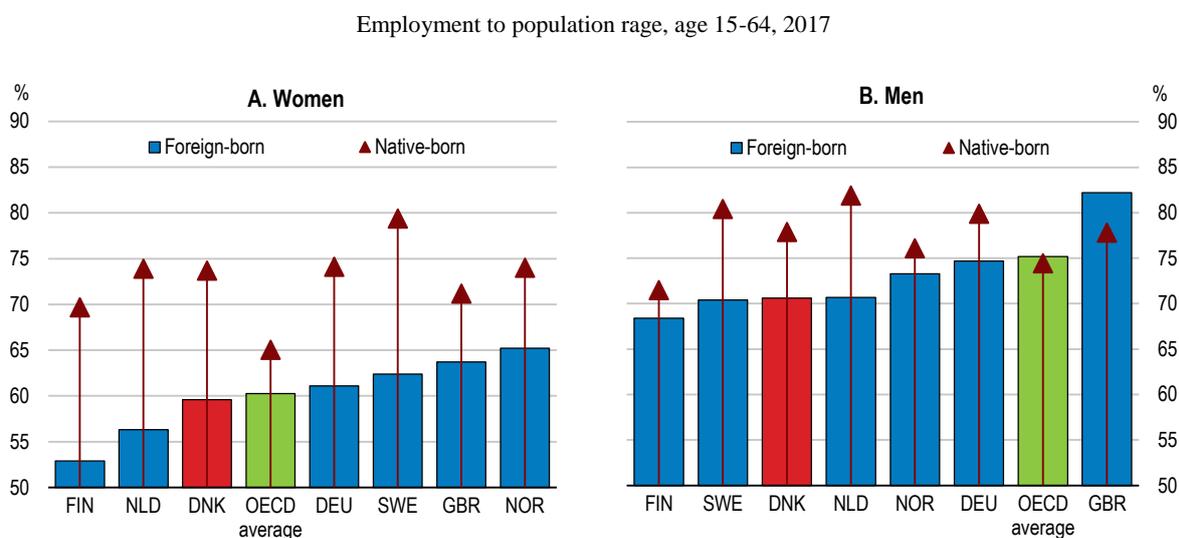


*Note:* Classification according to residence permit upon arrival. Other reasons include au pair and interns under study programmes.

*Source:* Statistics Denmark.

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The overall employment rate for foreign-born at 65% is close to the OECD average at 67.1% and higher than in Finland and in the Netherlands for women (Figure 31). But high employment rates for natives, especially for women, implies a sizeable employment gap, which is larger than in most OECD countries. Strengthening labour market integration would foremost improve wellbeing and living standards of migrants, but would also have a sizeable impact on public finances in the Danish welfare model with extensive tax-financed public services (Danish Ministry of Finance, 2018<sup>[71]</sup>).

**Figure 31. High employment rates for natives drive the gaps to foreign-born**

Source: OECD Migration Statistics.

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Policy measures have been taken to boost the use of traineeships and wage subsidies as these are the key instruments found to have positive effects on employment (Arendt et al., 2016<sup>[72]</sup>). A tripartite agreement between the Government and social partners in 2016 focused on raising firms' demand for foreign-born with low skills using apprentice entry wages and bonuses for firms employing refugees and family-reunifications for more than two years. The first evaluation points to some success of the integration-training programme (Rambøll, 2018<sup>[73]</sup>), but uptake has been relatively low and dropout rates are high, albeit dropout also reflects some transition to regular employment and education. There is scope to extend the programme to a broader group of immigrants, but also a need for more intensified language training and improved coordination and administration of the programme according to the evaluation. Implementing these adjustments in collaboration with social partners and making the programme permanent should be considered when the trial phase expires in June 2019.

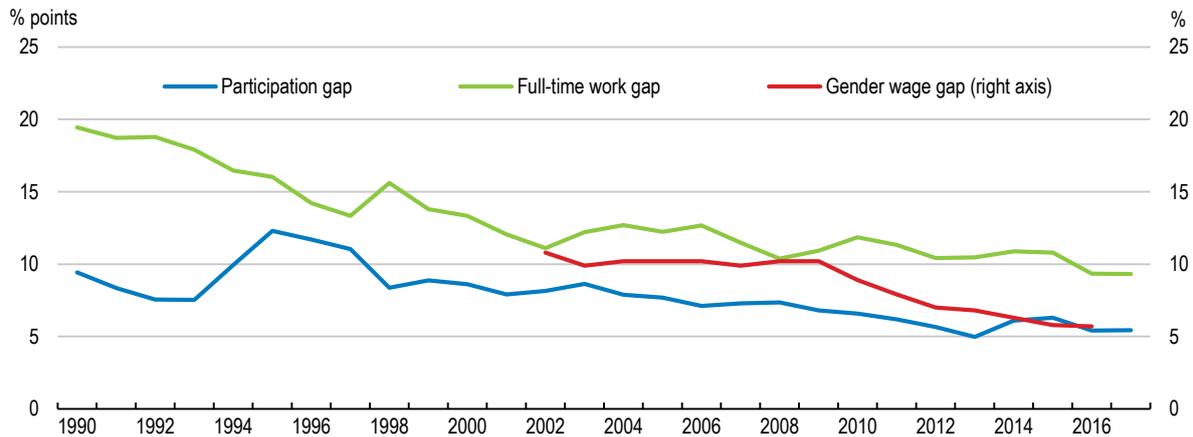
Benchmark analyses of the overall integration outcomes across municipalities show a substantial gap between the least and most successful municipalities (Arendt et al., 2016<sup>[72]</sup>). This is not found to be linked to the spending level (Bolvig et al., 2017<sup>[74]</sup>), suggesting that best practices could be better spread across municipalities. In this respect, better co-ordination of language training, education, subsidised work and recognition of foreign competencies within municipalities should be pursued. Germany has been successful in integrating refugees and migrants, among others due to the vast opportunities to find low-wage jobs, good coordination of housing, language and job training, and since policies have been adapted to local conditions (Joyce, 2018<sup>[75]</sup>).

### ***Gender gaps are closing, but challenges remain***

Denmark has moved further along the path to gender equality than most OECD countries. Gender gaps in the labour market are small and continue to narrow (Figure 32). The female employment rate has increased from an already high level decades ago to 71.5% in 2017,

far above the OECD average of 60.1%. Illustrative calculations show that increases in female employment account for 15% of total GDP per capita growth over the past 40-50 years (OECD, 2018<sub>[76]</sub>).

**Figure 32. Gender gaps are slowly closing**

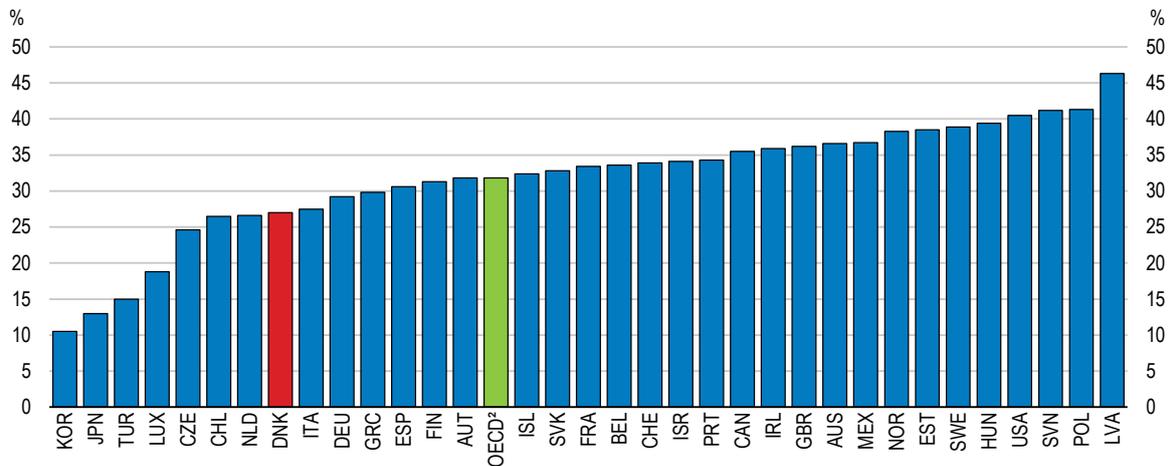


*Note:* The participation gap is defined as the difference in labour force participation rates for men and women aged 15-64. The full-time work gap is defined as the difference between men and women in the shares working full-time (at least 30 hours per week). The (unadjusted) gender wage gap is defined as the difference between men and women in median earnings for full-time employees, expressed as percentage of median earnings for men.

*Source:* OECD Labour Force Statistics; OECD Employment database.

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Nevertheless, the labour market remains gender-segregated across occupations and underrepresentation persists with respect to women in management positions (Figure 33). Comprehensive public services, including in childcare, have attracted many women to the public sector and almost 70% of all public sector employees are women (Figure 34), a level similar to the other Nordics. Despite this, women only fill 22% of senior management positions in central government, which is among the lowest across OECD countries (OECD, 2017<sub>[77]</sub>), albeit very few female managers in police and defence occupations mask a more balanced representation in other parts of central government.

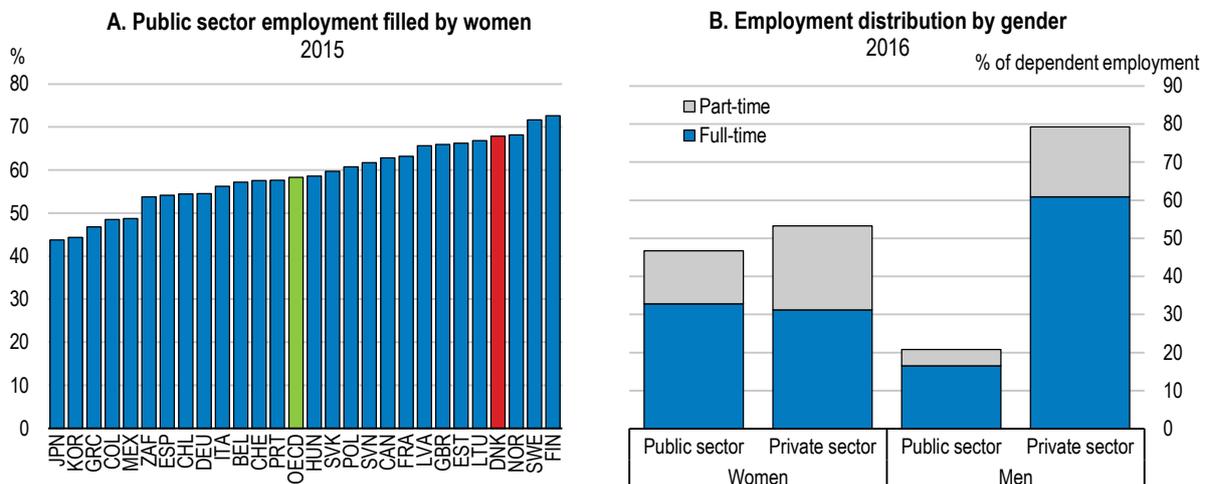
**Figure 33. The share of women in management positions is low**Female share of employment in managerial positions<sup>1</sup>, 2017 or latest available year

1. Employment in management is defined based on the International Standard Classification of Occupations (category 1 of ISCO-08 or ISCO-88).

2. OECD average of available countries.

Source: ILO, ILOSTAT database; OECD Labour Force Statistics.

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**Figure 34. Women are more inclined to work in the public sector and part-time**

Note: Full-time work is defined as at least 32 hours per week.

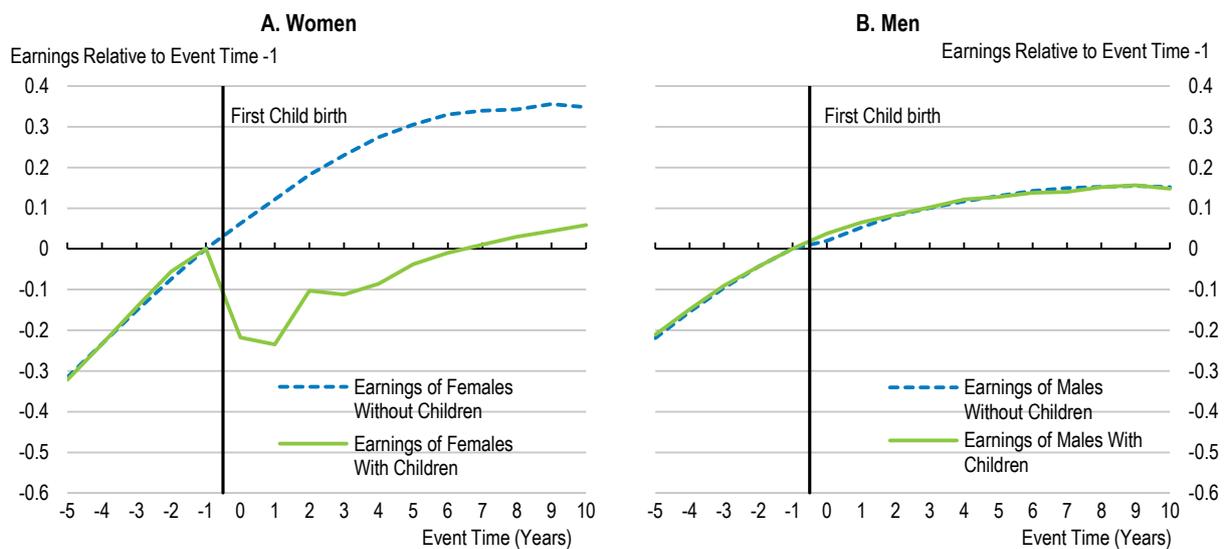
Source: OECD Government at a Glance 2017; Statistics Denmark.

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The arrival of children tends to interrupt the road to senior positions and higher earnings to a much larger extent for women than for men (Figure 35). In fact, extensive research shows that the larger burden women take on in primary childcare can explain most of the remaining gender inequality in the Danish labour market (Lundborg, Plug and Rasmussen,

2017<sup>[78]</sup>; Gallen, Lesner and Vejlin, 2019<sup>[79]</sup>; Kleven, Landais and Sjøgaard, 2018<sup>[80]</sup>). After giving birth to the first child, women tend to move to more family-friendly jobs, with reduced hours and often in the public sector, thus losing a potential wage return from on-the-job experience (Kleven, Landais and Sjøgaard, 2018<sup>[80]</sup>; Pertold-Gebicka, Pertold and Datta Gupta, 2016<sup>[81]</sup>). Danish mothers also use flexible work arrangements (working from home) more than in any other OECD country (Figure 36). By contrast, a wage premium from becoming a parent has been found for men (Simonsen and Skipper, 2012<sup>[82]</sup>), likely reflecting a perception as being more stable employment compared to non-fathers.

**Figure 35. The impact of children on earnings differs widely across women and men**



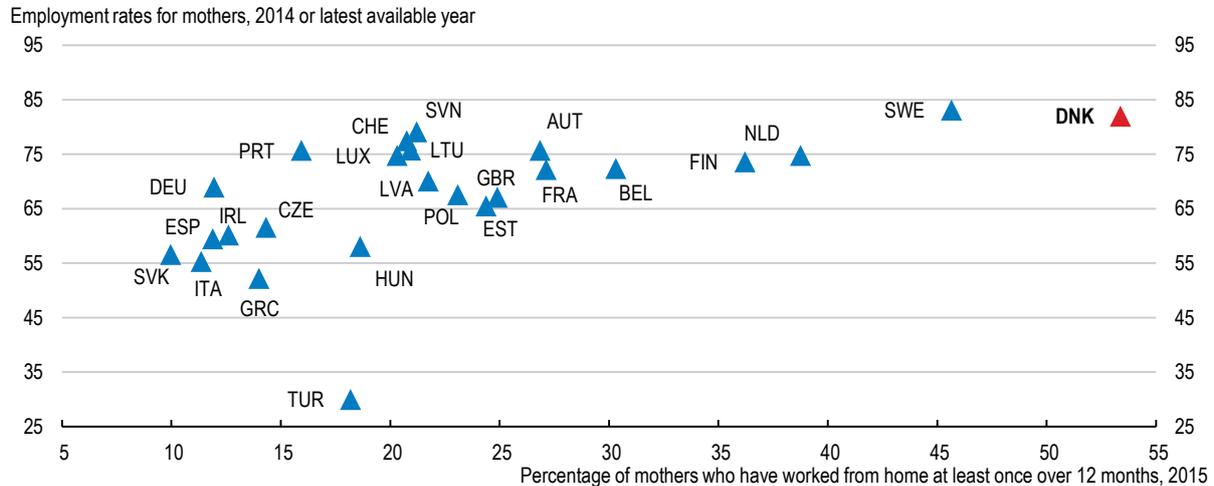
**How to read this figure:** The estimated impact of becoming a parent on earnings is shown by normalising earnings the year before the first child is born to zero and comparing the subsequent earnings path with a comparison group that never has children (using placebo births). This is done separately for women and men, revealing a large impact on earnings for women and no significant effect for men. The analysis uses an event study approach to capture the total effect of children, including changes in labour supply, earnings, occupation, sector etc. See source for details.

Source: Kleven, Landais and Sjøgaard (2018<sup>[80]</sup>).

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**Figure 36. Most mothers work and use flexible work arrangements**

Employment rate among mothers vs. percentage of mothers who have worked from home



Note: Mothers with at least one child aged 0-14.

Source: OECD (2017<sub>[83]</sub>).

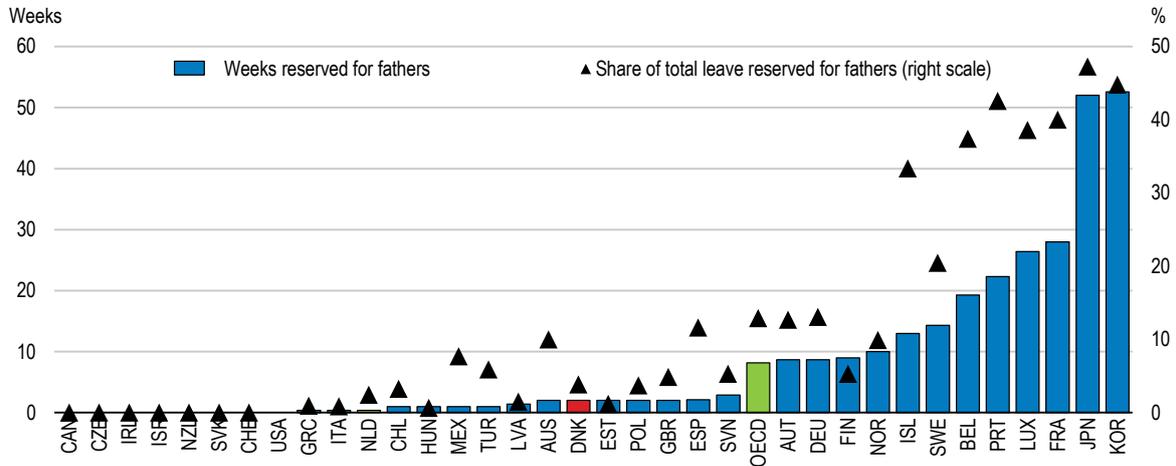
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Reducing segregation and stereotypes in the labour market, in education choices and in family roles would not only improve equality, but might also improve firms' performance and thus economic growth (Smith and Smith, 2015<sub>[84]</sub>). Increasing flexibility in the provision of childcare services should be considered, for instance by longer opening hours, to reduce the pressure on caregivers (preponderantly women) to take family-friendly jobs. Public childcare centres normally close at 17h00 or earlier and on average each centre is closed about ten working days per year when demand is low (Danish Ministry for Children and Social Affairs, 2018<sub>[85]</sub>). Provision of alternatives with extended opening hours is generally limited, although demand is also reported to be low (Krahn, Nøhr and Andersen, 2017<sub>[86]</sub>).

Strengthening incentives to take shorter periods of maternity leave would mitigate the effect of long workforce absences on mothers' earnings. On average mothers took 300 days of maternity leave in 2015, while fathers only took 30 days (Statistics Denmark, 2018<sub>[87]</sub>). This reflects a system that only reserves two weeks of leave for the father, lower than in many other OECD countries (Figure 37), and lets the family allocate 32 shared weeks. In many cases, mothers have stronger economic incentives to take the shared leave because of differences in wage compensation during parental leave, arising from the occupational segregation (Figure 34, Panel B). Collective agreements for employees in the public sector secures the right to full wage compensation during the parental leave, while most private sector agreements provide significantly less, hence tending to hold back fathers. Reserving part of the shared leave exclusively for fathers would ensure a better balance in parental leave and should be considered. Nevertheless, this could reduce labour supply since women tend to work shorter hours than men do, but the reverse is also possible if fathers do not take up all of such extended leave.

**Figure 37. Parental leave reserved exclusively for fathers is low**

2016



Source: OECD Family database.

StatLink  <https://doi.org/10.1787/888933898786>**Table 7. Past OECD recommendations to maintain inclusive growth**

Recommendation	Action taken since the 2016 Survey or planned
Reduce the effective taxation of returning to work by reforming benefits in order to make work pay.	A tax reform in February 2018 introduced a targeted earned income tax credit to low-income households. The integration benefit targeted to immigrants has been reduced and extended to cover a larger group.
Improve the quality and implementation of integration programmes for migrants.	In spring 2016, the government agreed with the municipalities and the social partners upon securing a more job related and company focused way of integration. An integration-training programme ( <i>IGU</i> ) has been established, which over the course of two years offers practical work experience and skill development for refugees and family-reunifications whose qualifications are not yet sufficient for a job with ordinary Danish salary and terms of employment.
Monitor work requirements for social assistance recipients.	No specific action taken.

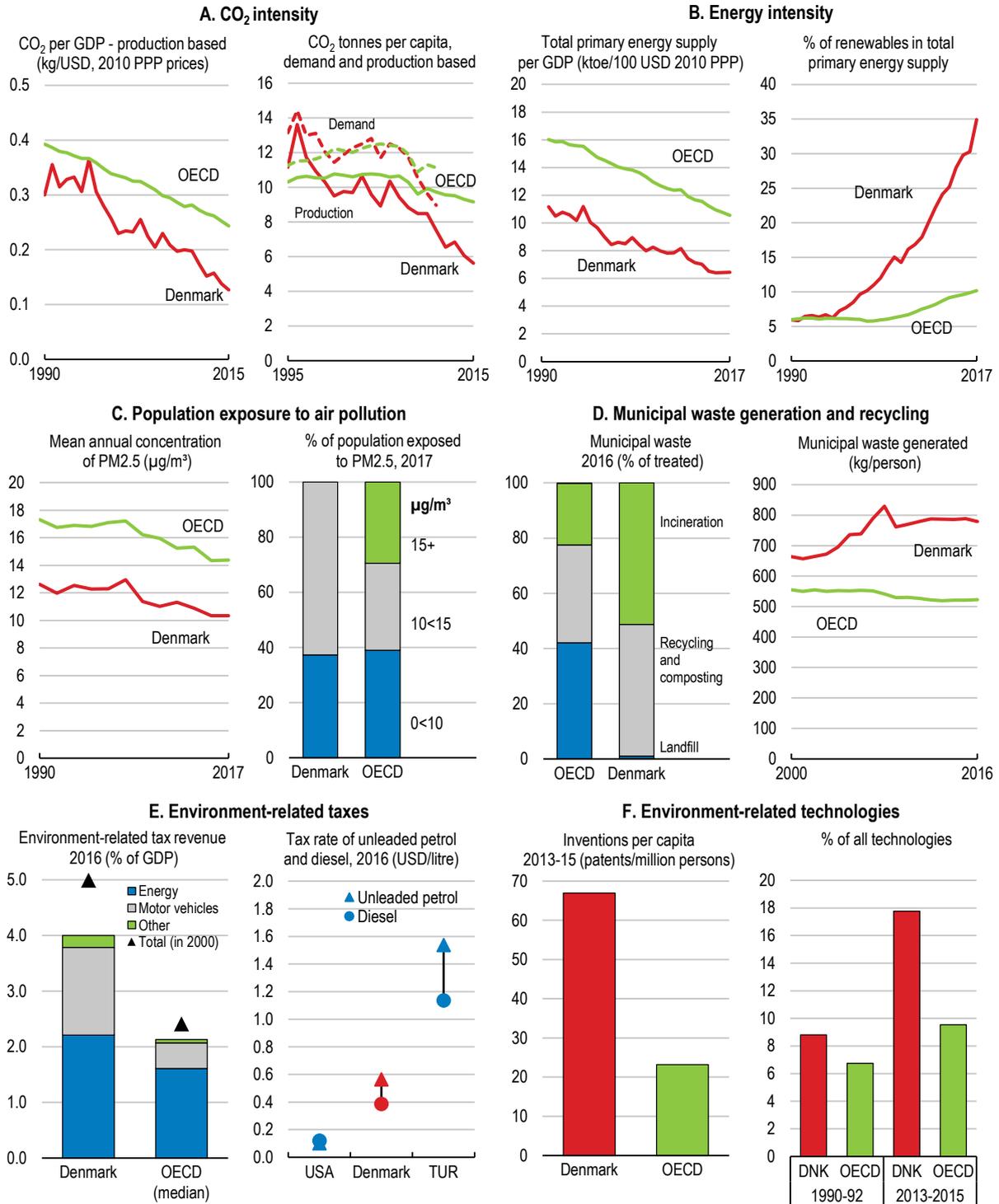
## The transition to a low-emission economy could be more cost-efficient

Denmark has a long history of strong support for renewable energy, leading to renewables representing 35% of total energy supply in 2017 (Figure 38). Nevertheless, there is substantial scope to make the transition to a low-emission economy more cost-efficient. Biomass (including wood, waste and straw) consumption more than doubled between 2000 and 2016 and now accounts for 70% of all renewable energy consumption. A development driven by favourable subsidies, tax exemptions and the heating sector regulation (Danish Climate Council, 2018<sup>[88]</sup>). Biomass is part of a CO<sub>2</sub>-neutral burning/growing cycle as long as it is produced sustainably or has no other use. However, more than 40% of the biomass burnt in Denmark is imported, primarily from Estonia and Latvia, which makes it difficult to verify CO<sub>2</sub>-neutrality and to tax emission from transport of biomass. The favourable treatment of biomass should be removed and only documented CO<sub>2</sub>-neutral biomass counted as renewable energy, as the Danish Climate Council has recommended.

In June 2018, a political agreement was reached on the future energy policy with a strong focus on cost-efficiency. On the subsidy side, the idea is to move towards a technology-neutral scheme. This is welcome since it will ensure the lowest prices and help to drive innovation of green technologies. Unfortunately, sizeable direct subsidies for offshore wind power are to be maintained with the risk of low value for money. On the tax side, the main element is a reduction of electricity taxes, which will support the transition away from fossil-based heating and a better use of the rising Danish production of renewable energy. Nevertheless, more needs to be done to equalise the price of CO<sub>2</sub>-emission across all types of energy use and across households and businesses (OECD, 2018<sup>[89]</sup>; OECD, 2018<sup>[90]</sup>). This could be achieved by implementing a recent reform proposal by the Danish Climate Council (2018<sup>[91]</sup>).

Similar asymmetries are present in other parts of the incentive system, notably the EU emission trading system (ETS), which does not apply to the transport nor the agricultural sector, which has the fastest growing emissions. The Government's recent proposal to fulfil EU reduction targets for 2030 in the non-ETS sectors focuses narrowly on the transport sector (Danish Government, 2018<sup>[92]</sup>). By subsidies and tax exemptions for zero emission vehicles, the goal is to end all sale of new gasoline and diesel cars by 2030. Such shift of technology in a relatively short time horizon is likely to be very costly, especially since 99.5% of all cars in 2018 are fossil fuelled. A CO<sub>2</sub>-tax, levied on most fuels in proportion to their carbon content, already rectifies part of the gap to the ETS for transport. In addition, private transport is heavily taxed both through fuel excise duties and through high taxes on purchase of new vehicles. It would be more cost-efficient to target larger emission reductions in the agricultural sector, responsible for 20% of total greenhouse gas emissions in 2016, but not subject to any emission regulation by taxes (Danish Economic Councils, 2018<sup>[93]</sup>). Incentives for farmers to adopt more emission-friendly production methods should be promoted by economic instruments. This should take into account the impact on global emissions.

**Figure 38. Environmental performance is strong**



Source: OECD Green Growth Indicators database.

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## Annex 1.A. Progress in structural reform

*This Annex reviews actions taken on recommendations from previous Economic Surveys that are not covered in tables within the main body of the Key Policy Insights. Recommendations that are new to this Survey are listed at the end of the Executive Summary and the relevant chapter.*

Recommendations	Action taken since May 2016
<b>Financial sector risks</b>	
When assessing systemic risks, include the whole financial sector, including the pension and insurance sector.	Insurance and pension companies are a regular part of the Systemic Risk Council's considerations and reports.
Maintain strong cross-border cooperation in supervision and resolution issues.	In February 2018, the Nordic-Baltic Stability Group signed a memorandum of understanding on cooperation and coordination regarding cross-border financial stability.
Encourage a further decrease of the maturity mismatch in variable-rate mortgage bonds.	From 2020, the share of lending which is refinanced each quarter must be less than 12.5% of the total lending portfolio. Annual refinancing must be less than 25% of the total lending portfolio.
<b>Housing market</b>	
Establish a commission to investigate the scope for developing a bigger private rental market.	No specific action taken.
Introduce local comparison rents for rent adjustments of existing contracts.	No specific action taken.
<b>Social institutions</b>	
Review existing exceptions, and reassess eligibility to disability benefits on a regular basis.	No specific action taken.
Assess the lifetime pattern of benefit recipients and the costs of their inactivity.	No specific action taken.
Promote diversity in firms with information campaigns, audits on management policies, programmes for early identification and prevention of work-related health issues.	In spring 2017, the government set up an expert committee to reconsider efforts in the field of occupational health and safety. In spring 2017, the government launched a joint effort in agriculture with the social partners to prevent accidents in the industry. In November 2017, the government launched a new type of inspection in the construction industry, including unannounced visits and checks of all companies on construction sites.
Implement initiatives to increase the pension savings among individuals not covered by occupational pensions.	The reform of the tax system of June 2017 introduces a new tax credit conditional on pension savings, which increases the incentive for pension savings for everyone, including those that are not covered by occupational pensions. The fiscal bill for 2019 increased the uprating of public cash transfers and reserved the increase for mandatory individual pension saving.
Support competition on welfare services, notably by revising exemptions to the Competition Act in the public sector and relaxing regulation in the pharmaceutical sector.	No specific action taken.
Improve employability of older workers and develop initiatives to adapt working environment to an ageing work force.	In May 2018, the government launched a think tank with the aim of improving the possibilities for older workers to extend their work life.
Consider diversifying funding sources of healthcare and long-term care by raising co-payments, mean-testing public support for home care, and expanding "sin taxes".	No specific action taken.
<b>Productivity</b>	
The government should reintroduce overall quantitative targets for the effects of productivity measures on GDP.	The government has introduced an overall quantitative growth target. This includes an aim to increase national GDP by DKK 35 bn by 2025 through policies that increases productivity in the private sector.
Further analysis of productivity enhancing measures should be carried out in some areas, while in others reforms could go further, notably in non-export oriented services and retail.	A national Productivity Council was established as of 2017 with the responsibility to analyse and advice on productivity-enhancing initiatives. Zoning and planning regulation have been liberalised from June 2017, easing rules concerning shop size and location as well as placement of production. A liberalization of the taxi act removes restrictions on the number of licenses and geographical restrictions with effect from 1st January 2018.
<b>Climate change</b>	
Promote international initiatives to limit the environmental damage on air quality, resulting from the lack of regulation in the shipping industry.	In 2016, the International Maritime Organization agreed to establish NOx emission control areas in the Baltic Sea and the North Sea, following years of preparations and negotiations. The new regulation will reduce the emission of NOx from new engines with 75% from 2021.

<p>Ensure that overall environmental performance is taken into account in car taxation. Introduce dynamically priced congestion charge in the most affected cities to reduce pollution and make for a better use of infrastructure.</p>	<p>The registration tax has been reduced and the limits and penalties for poor fuel efficiency have been increased. The periodic tax on car ownership has been increased to reflect the increase in fuel efficiency. Furthermore a political agreement on introducing a general road tax on cars from 2020 has been reached.</p>
<p>Limit the use of retroactive tax deductions for improving energy efficiency of housing to credit constrained households and exclude other house-work such as cleaning and gardening services.</p>	<p>No specific action taken.</p>

## Annex 1.B. Incorporating downturn risk in fan charts for GDP growth projections

Recent OECD research has shown how early warning indicators can be used to calibrate the uncertainty surrounding a central GDP forecast (Turner, 2017<sup>[94]</sup>; Turner, Chalaux and Morgavi, 2018<sup>[95]</sup>). Using a symmetric distribution of uncertainty based on historical forecast errors is insufficient as it ignores the inadequacy in predicting future severe downturns among macroeconomic forecasters. To address this shortcoming, the idea is to use a symmetric fan chart in normal times and a downward skewed fan chart when the estimated risk of a future downturn is high.

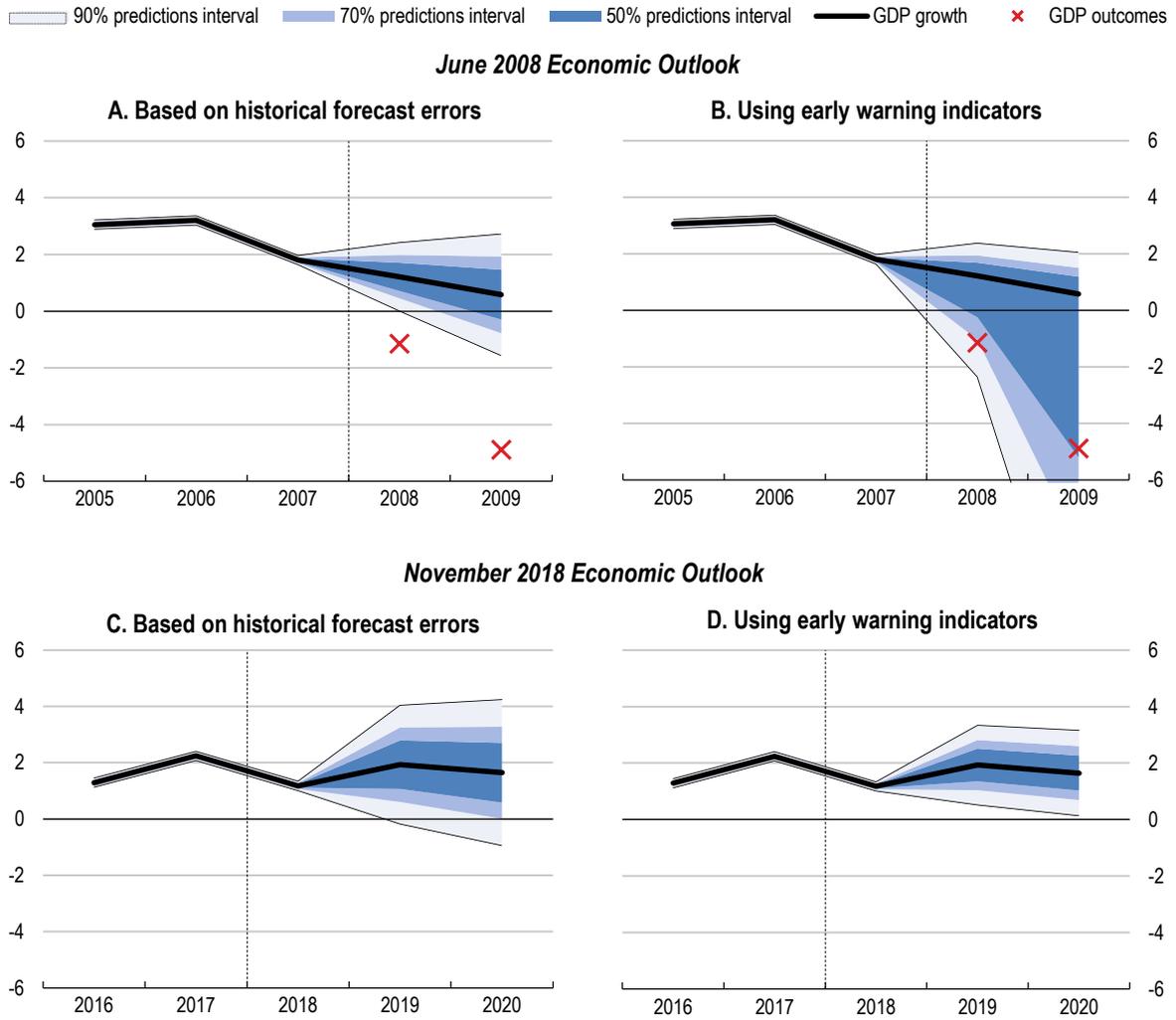
For illustration, the methodology is applied to *Economic Outlook* projections for Denmark published in June 2008. A first fan chart is constructed as a “straw man”, being based on historical forecast errors assuming symmetry and ignoring early warning indicators. On this basis, the outturn for 2009 GDP growth at -5% is well outside even a 90% prediction interval on the fan chart (Figure 39, Panel A).

For the skewed fan chart, a probit model for the probability of a severe recession is estimated for Denmark over the period 1985-2017. The preferred model includes the changes in the house price-to-income ratio and slope of the yield curve as well as the change in OECD-wide credit-to-GDP ratio to capture the impact of international financial spillovers, shown to be useful as early warning indicators in OECD countries (Hermansen and Röhn, 2017<sup>[96]</sup>). In the next step, a two-piece normal distribution is calibrated to distinguish normal times, when the uncertainty distribution is symmetric, from periods of relatively high probability of a downturn, when the risk distribution is skewed to the downside. For the June 2008 projections, the fan chart then encapsulates the outturn (Panel B), which falls within the 50-70% prediction interval.

While this is still experimental work, the methodology has also been applied to the November 2018 projections. At the current juncture, the probit model indicates a low probability of severe recession, implying a symmetric fan chart (Panel D). In this case, the methodology has the advantage that the projection range is narrower compared to the “straw man” approach (Panel C) because the forecast errors associated with severe downturns are discarded in a low risk situation. Nevertheless, downturn risks could be understated if the trigger came from an atypical source, which is not within recent historical experience and cannot be captured by the model. This applies to the risk of an escalation of international trade tensions discussed in the main text.

**Figure 39. Using probit probabilities of a future downturn to design fan charts**

*Economic Outlook* projections for Denmark, June 2008 and November 2018



Source: OECD calculations based on Turner (2018<sup>[95]</sup>).

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