INTERNATIONAL MONETARY FUND

IMF Country Report No. 19/178

# DENMARK

June 2019

## 2019 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR DENMARK

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2019 Article IV consultation with Denmark, the following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its June 21, 2019 consideration of the staff report that concluded the Article IV consultation with Denmark.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on June 21, 2019, following discussions that ended on May 13, 2019, with the officials of Denmark on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on June 6, 2019.
- An **Informational Annex** prepared by the IMF staff.
- A **Staff Statement** updating information on recent developments.
- A **Statement by the Executive Director** for Denmark.

The document listed below have been or will be separately released.

Selected Issues

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June 25, 2019

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# IMF Executive Board Concludes 2019 Article IV Consultation with Denmark

On June 21, 2019, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Denmark.

Denmark's economic performance, based on a model that prizes social inclusiveness, continues to impress with high living standards and employment rates, along with low levels of income inequality. Growth remained solid in 2018, supported by domestic demand, with the economy operating above potential for an estimated third year in a row. The labor market is strong, with pressures gradually building. Overall wage growth has picked up, broadly in line with productivity. Inflation remains moderate. The fiscal position is neutral and public debt is sustainable. The current account surplus has declined, amid higher investment and lower savings. House prices have started to soften, but household debt remains high.

The outlook is for continued solid growth and gradually rising inflation and wages. Output is projected to grow above trend in the near-term, reaching 1.7 and 1.9 percent in 2019 and 2020 respectively. Private consumption and investment are expected to be the key drivers of growth, as financial conditions will stay accommodative and the fiscal stance will remain broadly neutral for some time. Inflation and wages are expected to gradually rise. Potential output growth is projected to increase from 1.4 percent in 2016 to around 1.8 percent over the medium term, a result of structural reforms and higher investment. But risks around the outlook are tilted to the downside. A sharper than expected slowdown in Denmark's main trading partners could slow export growth, as could a disorderly Brexit. High household debt amid elevated house valuations remains a key source of macro-financial vulnerability. The ongoing money laundering case could further affect confidence in the financial sector and financial stability.

## Executive Board Assessment[2]

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

Executive Directors agreed with the thrust of the staff appraisal. They commended the authorities for sound economic and social policies that have delivered robust economic performance and high levels of social inclusion. They note that while the outlook is for continued growth, risks are tilted to the downside. In this context, they stressed the importance of policies to raise potential growth and enhance macro-financial resilience.

Given the substantial fiscal space in the medium term, Directors agreed that the fiscal stance should remain neutral, while letting automatic stabilizers operate fully in case of shocks to aggregate demand. Additional temporary loosening could also be considered in the event of a severe downturn, while remaining anchored to the medium-term objective. Directors encouraged the authorities to pursue further efficiency-improving reforms covering both revenues and expenditures, noting this could be implemented in a fiscally-neutral way or designed to provide stimulus if loosening is warranted.

Directors agreed that the fixed exchange rate policy has served Denmark well. They stressed that monetary policy should remain focused on maintaining the exchange rate peg.

Directors welcomed the overall soundness of the banking sector but noted that there are pockets of vulnerabilities. To strengthen financial resilience, Directors recommended a combination of micro- and macroprudential tools to increase buffers, in addition to the counter cyclical capital buffer, if risks continue to build up.

Directors commended the authorities for their recent efforts to strengthen cross-border AML/CFT supervision. They encouraged the authorities to continue to build on these efforts by adopting a comprehensive institutional risk assessment model, increasing the depth of AML/CFT inspections, and further expanding supervisors' sanctioning powers. They also saw scope to strengthen regional and international cooperation.

Directors considered that high household leverage amid elevated house valuations requires coordinated policy action. To reduce vulnerabilities, they suggested enhancing the macroprudential toolbox, including by increasing focus on income-based macroprudential instruments. They encouraged the authorities to further reduce mortgage interest deductibility and consider new policies to promote housing supply.

Directors commended the strong labor market. They noted that increasing benefits to low-income workers would help alleviate inactivity traps, while reducing marginal tax rates for

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[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.imf.org/external/np/sec/misc/qualifiers.htm.

average income earners could increase hours worked. Directors also saw merit in further measures to incentivize the upgrading of technical and digital skills, close gender gaps, integrate migrants, and attract skilled foreign labor.

Directors noted that productivity growth remains weak. They encouraged the authorities to support broad-based innovation, improve the institutional framework for competition, and foster the environment for high-productivity sectors to expand. They also noted that addressing the debt bias and improving access to equity finance for SMEs would promote investment and help reduce the current account surplus.

## Denmark: Selected Economics Indicators

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|
| **Supply and Demand (change in percent)** | | | | | | |
| Real GDP | 2.4 | 2.3 | 1.4 | 1.7 | 1.9 | 1.7 |
| Final domestic demand | 2.7 | 2.3 | 2.5 | 2.1 | 2.0 | 1.9 |
| Private consumption | 2.1 | 2.1 | 2.3 | 2.5 | 2.4 | 2.3 |
| Public consumption | 0.2 | 0.7 | 0.8 | 0.3 | 0.2 | 0.2 |
| Gross fixed investment | 7.6 | 4.6 | 5.1 | 3.4 | 3.0 | 2.8 |
| Net exports 1/ | 0.1 | 0.2 | -1.1 | -0.1 | 0.1 | 0.0 |
| Gross national saving (percent of GDP) | 29.4 | 29.6 | 28.5 | 28.7 | 28.6 | 28.5 |
| Gross domestic investment (percent of GDP) | 21.4 | 21.6 | 22.7 | 23.0 | 23.2 | 23.4 |
| Potential output | 1.4 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 |
| Output gap (percent of potential output) | 0.5 | 1.1 | 0.9 | 0.8 | 1.0 | 1.0 |
| **Labor Market (change in percent) 2/** | | | | | | |
| Labor force | 3.2 | -1.0 | 0.9 | 0.6 | 0.7 | 0.8 |
| Employment | 3.2 | -0.5 | 1.7 | 0.6 | 0.7 | 0.7 |
| Harmonized unemployment rate (percent) | 6.2 | 5.7 | 5.0 | 5.0 | 5.0 | 5.0 |
| **Prices and Costs (change in percent)** | | | | | | |
| GDP deflator | 0.7 | 1.4 | 0.4 | 1.7 | 1.7 | 2.1 |
| CPI (year average) | 0.0 | 1.1 | 0.7 | 1.3 | 1.5 | 1.8 |
| **Public Finances (percent of GDP)** | | | | | | |
| Total revenues | 52.6 | 52.6 | 51.9 | 51.7 | 51.2 | 51.0 |
| Total expenditures | 52.7 | 51.2 | 51.4 | 51.6 | 51.2 | 51.2 |
| Overall balance | -0.1 | 1.4 | 0.5 | 0.2 | 0.0 | -0.1 |
| Primary balance | 0.4 | 1.6 | 0.4 | 0.0 | -0.4 | -0.4 |
| Cyclically-adjusted balance (percent of potential GDP) | -0.4 | 0.6 | -0.1 | -0.5 | -0.8 | -0.9 |
| Structural balance (percent of potential GDP) | -0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 |
| Gross debt | 37.2 | 35.5 | 34.3 | 33.0 | 31.9 | 33.9 |
| **Money and Interest Rates (percent)** | | | | | | |
| Domestic credit growth (end of year) | 1.6 | 1.5 | 3.5 | ... | ... | ... |
| M3 growth (end of year) | -3.9 | 3.0 | -2.9 | ... | ... | ... |
| Short-term interbank interest rate (3 month) | -0.1 | -0.3 | -0.3 | ... | ... | ... |
| Government bond yield (10 year) | 0.3 | 0.5 | 0.4 | ... | ... | ... |
| **Balance of Payments (percent of GDP)** | | | | | | |
| Exports of goods & services | 53.6 | 54.5 | 54.7 | 54.6 | 54.5 | 54.2 |
| Imports of goods & services | 46.9 | 47.4 | 49.6 | 49.9 | 50.1 | 49.9 |
| Trade balance, goods and services | 6.7 | 7.1 | 5.0 | 4.6 | 4.4 | 4.3 |
| Oil trade balance | -0.2 | -0.2 | -0.4 | -0.5 | -0.7 | -0.7 |
| Current account | 7.9 | 8.0 | 5.8 | 5.6 | 5.3 | 5.1 |
| International reserves, changes | 0.4 | 0.8 | -0.3 | ... | ... | ... |
| **Exchange Rate** | | | | | | |
| Average DKK per US$ rate | 6.7 | 6.6 | 6.3 | ... | ... | ... |
| Nominal effective rate (2010=100, ULC based) | 97.6 | 98.7 | 100.2 | ... | ... | ... |
| Real effective rate (2010=100, ULC based) | 94.9 | 97.1 | 99.4 | ... | ... | ... |
| **Memorandum Items** | | | | | | |
| Nominal GDP (Bln DKK) | 2100 | 2178 | 2218 | 2294 | 2377 | 2468 |
| GDP (Bln USD) | 312 | 330 | 351 | ... | ... | ... |
| GDP per capita (USD) | 54,665 | 57,380 | 60,766 | ... | ... | ... |

Sources: Statistics Denmark, Danmarks Nationalbank, Eurostat, IMF World Economic Outlook, and Fund staff calculations.
1/ Contribution to GDP growth.
2/ Based on Eurostat definition.
3/ General government.
4/ Overall balance net of interest.
5/ Cyclically-adjusted balance net of temporary fluctuations in some revenues (e.g., North Sea revenue, pension yield tax revenue) and one-offs.

# DENMARK

## STAFF REPORT FOR THE 2019 ARTICLE IV CONSULTATION

June 6, 2019

## KEY ISSUES

**Context:** The solid performance of the economy continues to be supported by domestic demand and labor market pressures are gradually building. The current account surplus is declining amid higher investment. The outlook is for continued growth with risks tilted to the downside. While overall house price growth has started to soften, elevated household debt remains a key source of risk. Banks are sound and profitable.

**Policy Recommendations:** Policies should target higher potential growth and enhance macro-financial resilience. In particular:

- ***Fiscal policy.*** The fiscal stance should remain neutral. Automatic stabilizers should operate fully in case of shocks to aggregate demand. In the event of a severe downturn, additional temporary loosening should be considered, while remaining anchored to the medium-term objective.

- ***Macro-Financial.*** Coordinated policy action is required to address vulnerabilities due to high household leverage amid elevated house valuations, including enhancing the macroprudential toolbox, reducing overly favorable tax incentives and improving housing supply. Efforts to strengthen anti-money laundering supervision should continue. Costs and benefits of joining the Banking Union should be carefully assessed.

- ***Labor market.*** A comprehensive tax and benefit reform could increase hours worked. More reliance on targeted in-work benefits to low-income workers would help alleviate inactivity traps and promote youth employment. Policies should continue to promote upgrading of technical and digital skills, integrate migrants, and attract skilled foreign labor.

- ***Productivity and investment.*** Policies should support broad-based innovation and enhance the institutional framework for competition. Addressing the debt bias and improving access to equity finance for small and medium enterprises, including improvements to capital markets, would promote investment and help reduce the current account surplus.

Approved by
**Mahmood Pradhan (EUR) and Maria Gonzalez (SPR)**

Discussions took place in Copenhagen during April 30–May 13, 2019. The staff team comprised Mr. Segoviano (head), Ms. Bricco, Messrs. Huidrom and Wingender (all EUR), and Messrs. Bluedorn (RES) and Purcell (LEG). The mission was assisted at HQ by Mss. Jarin, Jin, and Tenali and Mr. Yang (all EUR). Mr. Gade (OED) participated in the discussions. The mission met with Messrs. Callesen and Rohde, Governors of Danmarks Nationalbank; Messrs. Kieler and Haagen Pedersen, Deputy Permanent Secretaries of the Ministry of Finance; Mr. Berg, Head of the DFSA; Mr. Skaarup, Deputy Permanent Secretary of the Ministry of Taxation; other senior officials; and representatives from the Danish Economic Council, social partners, and the financial sector.

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# CONTEXT

**1. Denmark enjoys one of the world's highest standards of living.** Strong institutions combined with sound economic and social policies have delivered robust economic performance and high levels of social inclusion. The business climate ranks among the best in the world and education levels are high. A flexible labor market model alongside extensive active labor market policies have fostered high employment and income levels, along with low levels of income inequality. Measures of well-being suggest Danes are among the happiest people in the world (Figure 1).

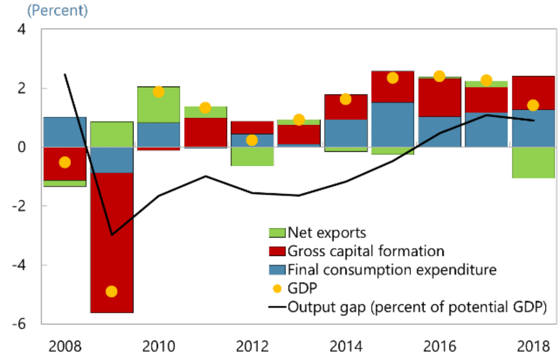
**2. Notwithstanding robust fundamentals, Denmark's recent economic performance trails peers in the region.** The economy was slow to recover from the Global Financial Crisis. The global recession also coincided with the puncture of a local housing bubble, which kept consumption and investment subdued for some time after the onset of the crisis. Thereafter, GDP recovered more slowly than neighboring countries, in part attributable to low productivity growth and weak investment rates. However, a steady upswing started in full in 2014.

# RECENT DEVELOPMENTS

*The upswing of the Danish economy continues. With GDP above potential, growth is driven by domestic demand, supported by a strong labor market. Inflation remains subdued and the fiscal position is broadly balanced. House prices seem to be softening, yet the level of household debt remains high. The current account surplus is decreasing amid higher investment.*

**3. Denmark's solid performance continues, with the economy operating above potential for a third year in a row.**[1] Real GDP grew by 1.4 percent in 2018. The composition has shifted to domestic drivers, with robust consumption and investment supported by accommodative financing conditions and strong employment gains (Figure 2). Domestic demand grew by 2.5 percent in 2018, while net export growth was negative, partly from a base effect due to a large one-off transaction in 2017.[2] The output gap is estimated to have reached 0.9 percent in 2018.

**Contributions to Real Growth and Output Gap**
(Percent)



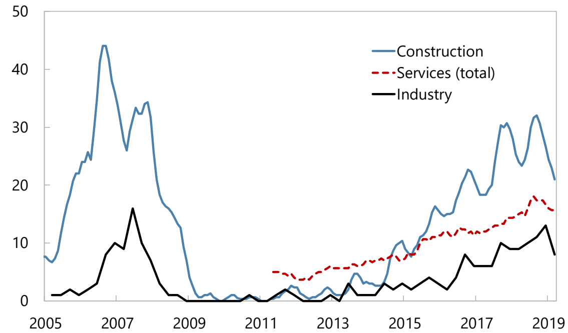

Sources: Statistics Denmark; and IMF staff calculations.

[1] Recent revisions to the national accounts lifted investment-to-GDP by 0.7 percentage point in 2017. The output gap was revised upwards by 0.8 and 0.7 percentage points in 2016 and 2017 respectively, reinforcing the current assessment of the strong cyclical position of the economy.

[2] Headline GDP growth and net exports in 2017 were slightly distorted by the accounting treatment of a single Danish patent. Its recording as an export increased GDP growth in 2017 by 0.4 percentage point and reduced it by the same magnitude in 2018.

**4. The labor market is strong, with pressures gradually building.** Employment has increased continuously since 2013, while the harmonized unemployment rate reached 5 percent in 2018, a ten-year low and below the estimated natural rate (Figure 3). Recent reforms and the gradual integration of migrants have boosted labor supply, but capacity constraints are starting to bind, with growing reports of labor shortages. However, overall wage growth was contained at 2.2 percent, broadly in line with productivity, contributing to stable competitiveness.

**Labor Force Shortages**
(Percent of respondents, 3-month moving average)

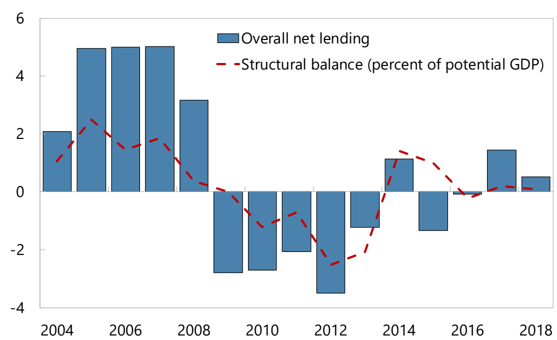



Source: Business Tendency Survey, Statistics Denmark.

**5. Inflation remains moderate despite a positive output gap.**[3] HICP headline inflation was 0.7 percent in 2018, from 1.1 percent in 2017. Services inflation came down to 1.6 percent from a 2.9 percent peak in mid-2017, amid weak price momentum for non-tradables.[4] Goods inflation recovered after several months of negative growth in 2017, as the exchange rate stabilized in effective terms in the second half of 2018. Danish inflation has been trailing that of the euro area since mid-2016, mainly reflecting lower food price inflation.

**6. The fiscal stance is neutral and public debt remains sustainable.** The structural balance was 0.1 percent of potential GDP in 2018, largely unchanged from 2017. While the overall balance declined, strong employment and consumption supported revenues, and lower unemployment benefits reduced expenditures. Gross public debt stood at 34 percent of GDP—among the lowest in OECD countries.

**General Government Balances**
(Percent of GDP)




Sources: IMF World Economic Outlook; and IMF staff calculations.

**7. House price growth has started to soften, but household debt is high.** Property prices grew on average 3.5 percent in 2018. While prices in urban areas have outpaced the national average in recent years, they appear to be softening. Prices for owner-occupied flats in Copenhagen grew by 5.5 percent in 2018, down from 11.4 percent in 2017. The active implementation of macroprudential policies, supply increases, as well as the property tax reform, seem to be contributing to the moderation (Figure 2).[5] Private sector credit growth more than doubled in 2018, rising to 3.5 percent from 1.5 percent in 2017, and above

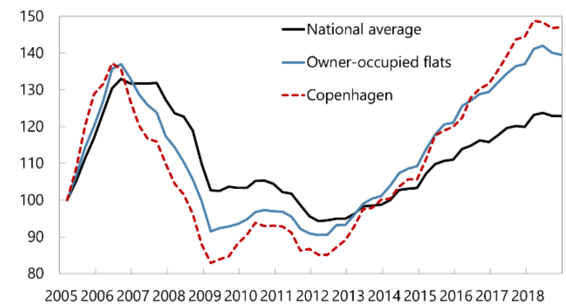
[3] This is consistent with recent studies that document a flattening of the Phillips curve among advanced economies (IMF 2018; BIS 2017).

[4] However, inflation seems to have picked up in some sectors such as transport, recreation and culture.

[5] The new real estate valuation system that will become effective in 2021 will end the property valuations freeze in place since 2002. Property tax amounts will therefore rise in proportion to house price increases (DN 2019).

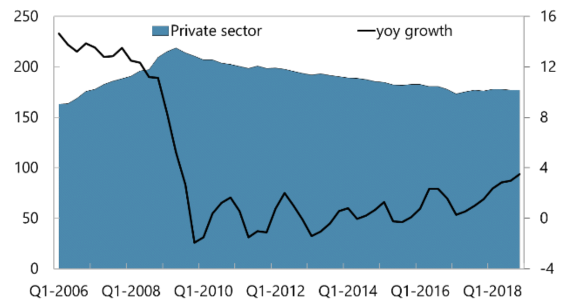
nominal GDP growth. The stock of private sector credit as a share of GDP is broadly at the level that preceded the GFC in early 2007. Aggregate credit growth masks large differences across geographies and industries. Areas with high house appreciation have experienced significant growth in mortgage lending (Figure 4). Lending to the corporate sector has been concentrated in cyclical industries. Importantly, household debt is the highest among OECD countries at 270 percent of disposable income (Figure 5).

**Real Property Prices 1/**
(Index, 2005Q1 = 100)




Sources: Association of Danish Mortgage Banks; Statistics Denmark; and IMF staff calculations.
1/ Prices are deflated by CPI. National average and Copenhagen are the weighted averages of owner-occupied flats and one-family houses nationally and in Copenhagen, respectively.

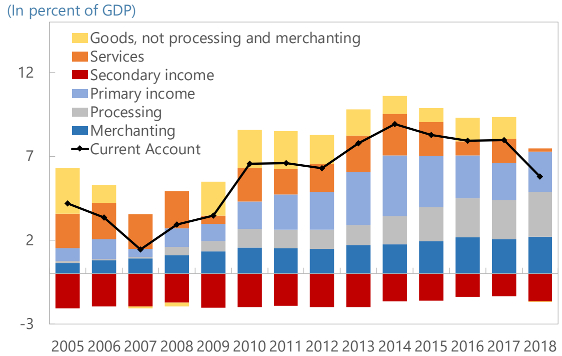
**Private Sector Credit**
(Percent of GDP; percent on right axis)




Sources: Danmarks Nationalbank and Haver Analytics.
Notes: Includes financial institutions' lending to households and non-financial corporations.

8. **Denmark's current account surplus is declining.** The current account decreased from 8 percent of GDP in 2017 to 5.8 percent of GDP in 2018. The surplus continues to be driven by export of goods, including merchanting and processing, a consequence of Denmark's integration in global supply chains. The decline also reflects a decrease in savings from 29.6 percent of GDP in 2017 to 28.5 percent in 2018 and a rise in investment from 21.6 percent to 22.7 percent. Staff assesses the external position to be moderately stronger than implied by medium-term fundamentals. While the External Balance Assessment model does not identify policies that explain most of the excess surplus, structural polices aimed at raising investment, including through a gradual improvement in capital markets, would help reduce the surplus (Annex IV). Nevertheless, this assessment is subject to important uncertainties.

**Current Account**
(In percent of GDP)




Sources: Statistics Denmark; and IMF staff calculations.

# OUTLOOK AND RISKS

9. **The outlook is for continued solid growth, supported by domestic demand.** Private consumption and investment are expected to be the key drivers of growth, supported by healthy consumer confidence, accommodative monetary and financial conditions, and a broadly neutral fiscal stance. Wealth effects from the strong housing market will further contribute to robust consumption growth. High capacity utilization rates, as well as elevated house prices in large cities,

will also promote investment. Employment gains from recently approved labor market and pension reforms are expected to continue boosting labor supply in the next few years, alleviating to some extent constraints in the labor market. With the economy above potential and low unemployment in the near term, inflation and wages are expected to gradually rise. Net export growth is projected to remain subdued, in line with a weak external environment. As a result of structural reforms, potential output growth is projected to increase from 1.4 percent in 2016 to around 1.8 percent over the medium term, with labor productivity growth picking up after years of slow progress and as capital intensity increases. This will help narrow the output gap in the medium term. A debt sustainability analysis points to a gradually declining net public debt ratio over the medium term (Annex VI).

**10. Risks around the outlook are clearly tilted to the downside.** A sharper than expected slowdown in Denmark's main trading partners and/or a flareup in trade tensions could further slow export growth, especially in the shipping sector and for firms participating in global value chains. A steeper than anticipated softening of the global cycle, notably in Germany and China, could be a source of weaker external demand. A disorderly Brexit could weigh on activity in Denmark through a number of channels, including through lower trade from increased tariff and non-tariff barriers, disruptions in supply chains, and tightening of financial conditions due to confidence effects. Several U.K.-exposed sectors, including food products, chemicals, machinery, and trade and transport would be negatively affected.[6] A disregard for the common fiscal rules and rising sovereign yields for high-debt countries of the euro area could spread to other European countries through confidence and trade channels.

**11. High household leverage amid high house valuations is a key source of macro-financial vulnerability.** While overall house prices seem to be softening and households continue to switch to loans with higher amortization and lower interest rate risk, more than a decade of high price increases has left some households highly indebted, particularly in urban areas. These are especially vulnerable to housing price and interest rate shocks. The deep integration of the Nordic financial system leaves Denmark exposed to shocks originating in other Nordic countries. The ongoing money laundering case involving Denmark's largest bank could further impact confidence in the financial sector and undermine financial stability.

***Authorities' Views***

**12. The authorities broadly concur with staff's assessment of the outlook and risks.** They expect the strong economic expansion to continue and the output gap to remain positive over the medium term as domestic demand remains healthy. They view external risks, due to Brexit and trade tensions, tilted to the downside, but note that the Danish economy has sufficient buffers. Domestic

[6] IMF estimates suggest a no-deal Brexit could reduce aggregate EU GDP by about ½ percent by 2021. This aggregate effect masks important heterogeneity across countries, given varying degrees of exposure to the United Kingdom (WEO Box 1, IMF 2019). Alternative estimates no deal Brexit indicate that in the long term, Denmark's GDP could decline by up to 1 percent (Euro Area 2018 SIP). These estimates are subject to considerable uncertainty given the range of possible outcomes in the Brexit process, the timing and magnitude of the channels associated with it, and possible policy responses.

risks are on the upside with buoyant consumption and investment. They recognize staff's concerns about macro-financial vulnerability due to elevated household debt.

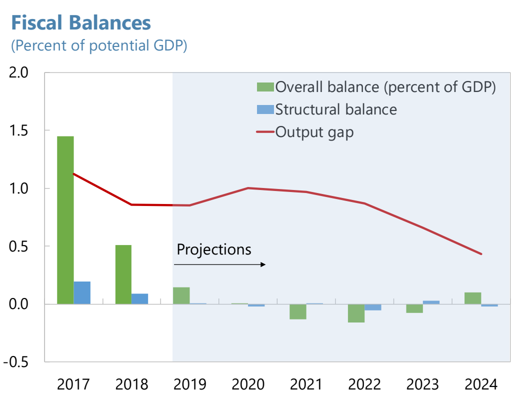
# POLICIES FOR SUSTAINED GROWTH

*Policies need to boost potential growth and enhance macro-financial stability. The continued solid economic performance calls for a neutral fiscal stance, while supporting capacity-enhancing policies tailored to boost labor supply, productivity and investment. Macro-financial vulnerabilities should be addressed through enhancing the macroprudential toolbox, combined with tax and housing supply policies. Efforts to strengthen cross-border anti-money laundering supervision should continue.*

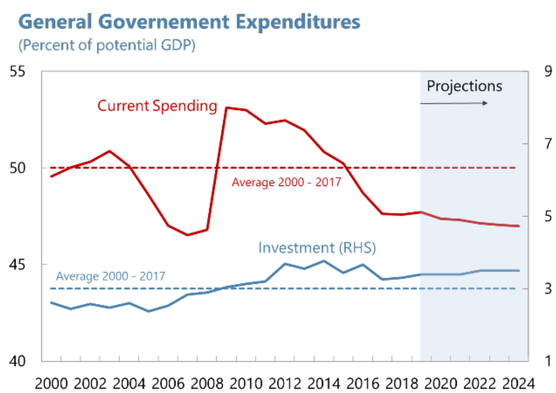
## A. Macroeconomic Policies

### Fiscal Policy

**13. Fiscal policy is envisaged to remain broadly neutral over the medium term.** The structural position is projected to remain close to balance, above the fiscal framework deficit limit of ½ percent of GDP. A relaxation of the overall budget balance is planned—consistent with a prudent use of existing fiscal space—amid accommodation of ongoing structural reforms. The fiscal balance is expected to turn into a small deficit of -0.1 percent of GDP by 2021, from 1.4 percent in 2017. Higher deductions for pension contributions will compensate for the increase in retirement ages and a partial refund of property taxes will support the transition to a new real estate valuation system. General government revenues and expenditures will be reduced in structural terms. Staff welcomes the planned increase in public investment to 3.5 percent of GDP, higher than the 3.0 percent average since 2000. Gross debt and gross financing needs will increase to around 40 percent and 7 percent of GDP respectively in the medium term as the central government takes a more active role in the financing of social housing (Annex VI).[7] Net debt however will continue to decline as a share of GDP,




Sources: IMF World Economic Outlook; and IMF staff calculations.



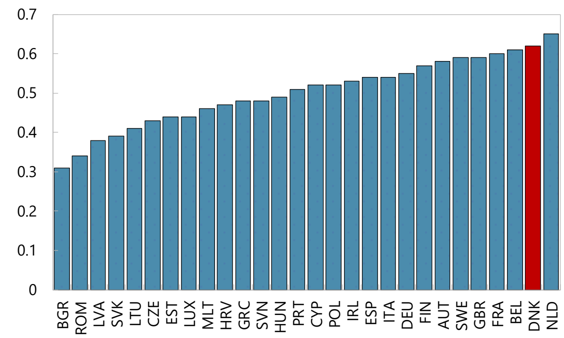

Sources: Haver Analytics; and IMF staff calculations.

[7] Gross debt and gross financing needs were about 34 percent and 5 percent of GDP respectively in 2018.

as higher assets will match the increase in liabilities.[8] Staff assesses that Denmark has substantial fiscal space over the medium term, but long-run sustainability hinges on continued implementation of pension reform.

**14. The fiscal stance should remain neutral, while letting automatic stabilizers operate fully in case of shocks to aggregate demand.** With the economy operating above potential, a neutral fiscal stance would allow to comfortably support ongoing reforms—as envisaged in the latest medium term projections, while helping to protect buffers in the short term in case adverse shocks were to materialize given substantial downside risks to the outlook. In the long term, the ageing population is projected to increase healthcare costs quite substantially, also calling for fiscal prudence.[9] Additionally, the significant decline in the current account surplus and projected increases in investment and consumption undermine the case for fiscal loosening. In case of shocks to aggregate demand, Denmark's strong automatic stabilizers should operate fully. In the event of a severe downturn, additional temporary loosening should be considered, while remaining anchored to the medium-term objective.

**Automatic Stabilizers, 2014**
(Government balance response to 1 percent increase output gap)

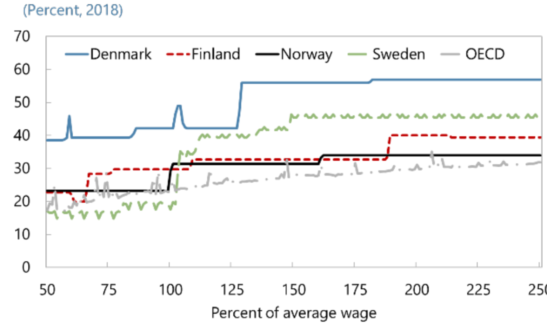



Source: Mourre, Astarita and Princen (2014).

**15. Efficiency-improving reforms that cover both revenues and expenditures should continue.** These could be implemented in a fiscally-neutral way or calibrated to provide stimulus if loosening is warranted. Recent cost estimates provided by the OECD suggest these reforms appear feasible (Table).

- ***On the revenue side, reducing high marginal and participation tax rates could promote labor supply (Section C).*** Tax incentives for pension savings could be rationalized while the Mortgage Interest Deductibility (MID) could be further reduced. This could help slow households' large balance sheet expansion and reduce maturity mismatches from high pension savings and large mortgage debt (Section B). The introduction of an incremental Allowance for Corporate Equity (ACE) would increase incentives for firms to invest and reduce the debt bias (Section C).

**Marginal Effective Tax Rates by Earnings Level**
(Percent, 2018)




Sources: OECD Taxing Wages and IMF staff calculations.
Notes: Averages by income level taken over family types. Calculations exclude social security contributions.

[8] The central government will on-lend the proceeds of centrally-issued bonds to finance social housing. This will expand the general government balance sheet by around 12 percent of GDP, but will not affect net debt (DN 2018).

[9] Healthcare and long-term care costs are projected to increase by approximately 3 percent (baseline) to 7 percent (risk scenario) of GDP in the long run (European Commission 2018).

- ***On the spending side, increasing public investment to upgrade infrastructure and broadening R&D support to more firms could also be considered (Section C).***

- ***Staff welcomes the ongoing review of the budget law.*** This offers an opportunity to ensure adequate flexibility in setting the structural deficit limit, while maintaining the medium-term objective of budget balance. The use of performance budgeting could be expanded and improved.[10] Ensuring public sector compensation is better linked to performance could help improve resource allocation and boost productivity growth (Danish Productivity Commission 2013).

**Illustrative Costing of Proposed Structural Fiscal Reforms**

| | | Impact on the fiscal balance, percent of GDP |
|---|---|---|
| Total | | -0.14 |
| Labor tax reform | Improve targeting of in-work benefits and reduce marginal tax rates for average earners and above | 0.00 |
| Corporate income taxation | Implement an Allowance for Corporate Equity (ACE) | -0.08 |
| Tax relief for interest expenses | Reduce the mortgage interest deduction (MID) in personal income tax | 0.15 |
| Public investment | Upgrade public and transport infrastructure | -0.20 |
| R&D business support | Increase spending on business R&D support by 10 percent | -0.01 |

Source: OECD 2019; IMF staff calculations.

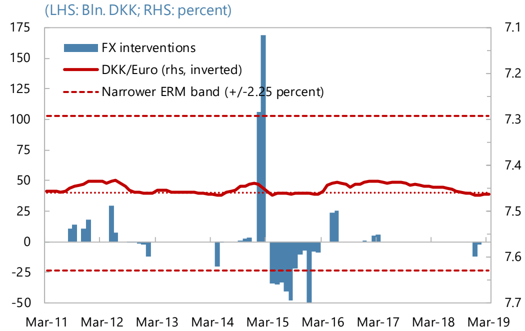
Notes: The table reports estimated impacts of selected recommendations. The effects of the proposed ACE and MID are estimated over a five to ten year horizon. The MID would be reduced to a uniform rate of 25 percent from about 33 percent for expenses below DKK 50,000. The proposed increase in public investment would bring the projected level in 2019 to the highest level of public investment recorded in the last ten years.

## Monetary Policy

**16. Monetary conditions have remained accommodative so far.** The Danish krone recently weakened against the euro, after a period of broad stability since early 2017. This likely reflected, around the time of exchange pressures, expectations of a relative tightening of monetary policy in the euro area versus Denmark, as indicated by future swap rates. Despite remaining within the Exchange Rate Mechanism (ERM) band, these pressures prompted two successive interventions in December 2018 and January 2019 that strengthened the krone. The deferral of policy normalization announced by the ECB in early March 2019 has not resulted in appreciation pressures on the krone so far. The policy spread between Danmarks Nationalbank and the ECB has remained unchanged at -0.25 percent since March 2016, while negative differentials in money market rates have widened slightly.

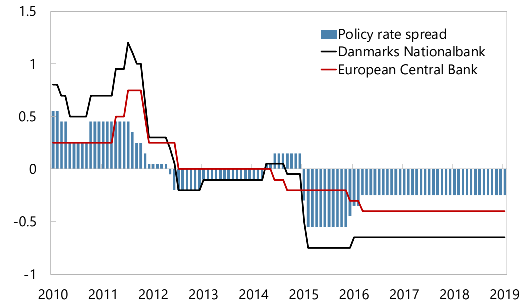
[10] Budgeting and Public Expenditures in OECD Countries (2019). Performance budgeting encompasses a broad set of institutions and procedures meant to expand fiscal space by improving public services, administrative efficiency and resource allocation.

**FX Interventions and the Exchange Rate**
(LHS: Bln. DKK; RHS: percent)




Sources: Haver Analytics; and IMF staff calculations.

**Policy Rate Differential with the European Central Bank**
(Percent)




Sources: Danmarks Nationalbank and ECB.

**17. The fixed exchange rate policy has served Denmark well; thus, the objective of monetary policy should remain to preserve the peg.** The policy provides a framework for low and stable inflation in Denmark. Thus, the central bank should stand ready to defend the peg when faced with currency pressures using foreign exchange interventions and changes in the policy rate as deemed necessary. Such situations could include possible appreciation pressures from monetary accommodation by the ECB—in the event of a no-deal Brexit or due to ECB's deferral of policy normalization—or depreciation pressures—in the event of a large confidence shock originating from the ongoing money laundering case.

***Authorities' Views***

**18. The authorities consider that fiscal policy should remain broadly neutral.** They concur with staff that Denmark's strong automatic stabilizers would help dampen shocks to aggregate demand. However, they see limited scope for discretionary fiscal loosening to respond to shocks. The authorities did not have a view on whether the ongoing review of the budget law would result in major changes to the structural deficit limit. The authorities reiterate that the exclusive objective of monetary policy is to maintain the peg. The fixed-exchange-rate policy provides a framework for low inflation in Denmark.

## B. Financial Sector and Macro-Financial Policies

### Financial Sector Policies

**19. The banking system remains profitable, liquid, and solvent.** While profitability has decreased, it remains solid despite slow credit growth, low interest margins, and the introduction of IFRS 9.[11] System-wide non-performing loans (NPLs) remain low but vary across medium-sized banks and systemically important institutions (SIFIs). Danish banks' liquidity coverage ratio is comfortably above the current minimum requirement of 100 percent (Figure 4). Banks have ample capital buffers

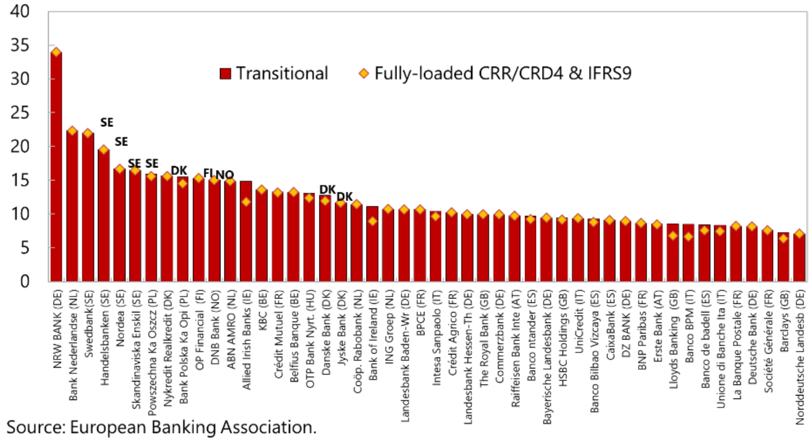
[11] Profits remain solid due to a rise in net fee income and income from administration margins. Recognition of expected credit losses under IFRS 9 rules increased loan impairment charges (DN 2018).

as confirmed by the 2018 European Banking Authority (EBA) and the Danish central bank stress tests (ST).[12]

**20. However, pockets of vulnerabilities remain.** Lending surveys suggest that some banks are relaxing credit standards for corporate loans. The ongoing money laundering case could undermine financial stability. Higher expenditures for anti-money laundering (AML) controls and increased cost of funding—due to increased risk perception—have already impacted Danske Bank's profitability, stock price and default probability.[13] Additional negative developments related to money laundering could potentially raise competitiveness concerns and further affect confidence in the broader financial system. Close interlinkages across the Nordic financial system expose banks to regional spillovers as the temporary (end-2018) increase in systemic risk measures, such as joint default probabilities of banks in the region, suggest.

**EBA Stress Test Results: Capital Ratios In Adverse Scenario**

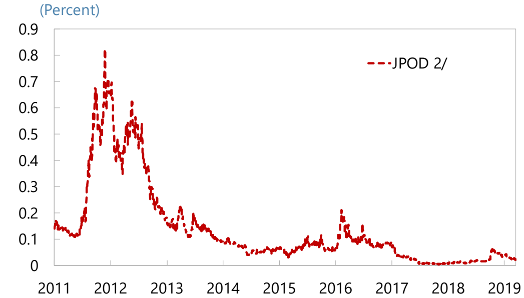
(End 2020, in percent)




Source: European Banking Association.

**Systemic Risk Indicator for Nordic Banks 1/**

(Percent)

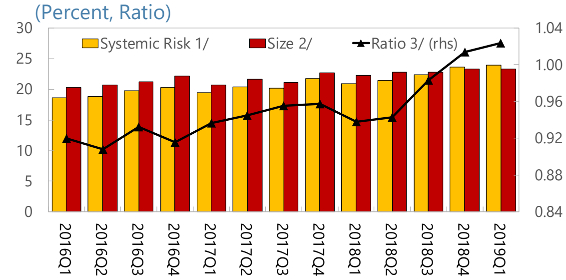



Sources: Bloomberg; and IMF staff calculations.

Note: 1/ Sample includes Danske Bank, Nordea, SEB, Swedbank, DNB and Handelsbanken. 2/ JPoD reflects the probability of all banks in the sample becoming distressed.

**Danske Bank: Marginal Contribution to Systemic Risk**

(Percent, Ratio)




Sources: Bloomberg; and IMF staff calculations.

1/ Measures the expected shortfall which represent the extreme loss to the system that occurs with a probability of one percent (or less). 2/ Measures Danske's assets relative to sum of assets of banks in the sample. 3/Ratio above one indicates that contribution to systemic risk is higher than banks relative assets.

**21. Denmark's financial regulatory framework has been strengthened and additional capital buffers are being built.** The Danish Financial Supervisory Authority (DFSA) completed the final stage

[12] For Denmark, the 2018 EBA ST adverse scenario assumed a cumulative decline in real GDP of 4.1 percent and a decline in residential and commercial property prices by 28.1 and 31 percent respectively over three years. The central bank ST identifies a short fall for a few non-SIFS of about kr. 650 million or 0.03 percent of GDP, equivalent to about 0.2 percent of system-wide capital.

[13] Net profits declined by 28 percent y/y in 2018, while funding cost increased on average by 33 basis points since end of May 2018.

of the Banking Recovery and Resolution Directive (BRRD).[14] Banks are now subject to MREL requirements, while Mortgage Credit Institutions (MCI) are exempted (DN 2018) but must hold a debt buffer.[15] The Systemic Risk Council (SRC) recommended raising the countercyclical capital buffer (CCyB) from zero to 1½ percent by June 2020, amid risk build-up related to the low interest rate environment.[16]

**22. Additional policies can support the resilience of the financial system.** If risks continue to build up, a combination of micro and macroprudential tools should be used to increase buffers, including revisions to risk weights, Pillar 2 requirements, the SIFI and capital conservation buffers, in addition to the CCyB. To improve the calibration of tools and support financial stability surveillance, staff recommends further refining frameworks to assess systemic risk. These should include macroprudential stress test to quantify losses due to contagion across MCIs, the pension and household sectors. Extensions to estimate losses due to contagion across banks in the region should also be considered.

**23. The Danske Bank case has attracted international scrutiny of Denmark's cross-border AML/CFT supervisory regime.** The possible laundering of approximately €200 billion in transfers through Danske Bank's branch in Estonia has affected confidence in the Danish financial sector and attracted international scrutiny of the country's cross-border AML/CFT supervision.[17]

**24. The authorities should build upon their recent efforts to strengthen cross-border AML/CFT supervision.** Financial groups are now required to implement group-wide programs to counter money laundering and terrorist financing (ML/TF). Additional resources have been allocated to the DFSA, and it now has the power to revoke a financial institution's license in response to gross violations of AML/CFT requirements. The priority next steps are to: (i) develop a comprehensive institutional risk assessment model; (ii) increase the depth of the DFSA's AML/CFT on-site inspections; (iii) further expand its sanctioning powers, including to issue administrative fine notices; and (iv) strengthen regional and international cooperation.

**25. A decision on banking union participation should carefully assess costs and benefits given Denmark's unique characteristics.** A 2015 report concluded that participation was in Denmark's interest but some areas required further clarification and review of experience before a final decision could be made. A committee was established in July 2017 to follow up with a final report expected by fall 2019. The decision involves assessing how participation would change bank

[14] The BRRD was completed by setting minimum requirements for own funds and eligible liabilities (MREL) and the resolution strategy for all financial institutions from July 1, 2019 (including Nykredit and DLR Kredit) (Finanstilsynet).

[15] MREL is set to either eight percent of assets or two times the total capital requirement including capital buffer requirements, whichever is higher. MCI's debt buffer will be fully phased-in to 2 percent of unweighted loans in 2020 (in 2019 it is 1.8 percent).

[16] This was done in three phases with two previous raises of 0.5 percent and 1 percent to be implemented by March and September 2019, respectively.

[17] Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) supervisory weaknesses were identified in a 2017 Financial Action Task Force (FATF) report.

supervision and resolution and whether the overall effects are beneficial for Denmark. For example, ultimate bank oversight would be transferred to the ECB and the Single Resolution Board; home-host issues vis-à-vis banking union members would be reduced; supervisory and resolution resources from the Single Supervisory and Resolution Mechanisms would be available. The treatment of Danish specificities, such as MCIs, the practice of resolution for small-to-medium banks and banks in Greenland and the Faroe Islands (part of the Kingdom of Denmark but outside the EU), may need to be clarified. The current structure of the banking union and its prospects for change must also be considered. Banking union participation will ultimately be a political decision, reflecting the Danish authorities' judgement on its consequences for Denmark, including its financial stability and position within the EU (Annex II).

***Authorities' Views***

**26. The authorities assess the financial system to be sound and resilient to economic downturns but are closely monitoring the build-up of risk.** Authorities agree that credit standards for corporate lending are deteriorating. Should risk continue to build up they expect that the Systemic Risk Council will recommend further increases in the CCyB. In such a risk scenario, the Danmarks Nationalbank (DN) agrees with the need to increase buffers, including through a combination of micro- and macroprudential tools. Authorities agree that the ultimate decision on banking union participation will require a political judgment. The authorities underlined that several initiatives have been taken to strengthen the AML/CFT framework. They welcome the forward-looking perspective of Staff's assessment and reaffirmed the broad consensus to continue aiming for Denmark's AML/CFT supervisory regime to be among the best in Europe.

### Housing Market

**27. The housing market plays a vital role in Denmark, reinforcing macro-financial linkages.** High mandatory pension contributions and household savings have created a pension system that has facilitated the development of the world's largest covered bond market in percent of GDP. Insurance companies, pension funds, and foreign investors are among the largest holders of covered bonds, which are issued by MCIs to fund household mortgages (Figure 5).[18] Thus, housing asset exposures interlink MCIs, pension funds, insurance, foreign investors, and the household sector. Hence, shocks to real estate may impact negatively households' financial and non-financial assets, hindering consumption; thus, reinforcing macro-financial linkages (SIP 2018).[19]

**28. High household leverage amid high house valuations remains a key source of macro-financial vulnerability.** High house prices, a favorable tax treatment, and easy access to low-cost

[18] Foreign investors provide funding and risk diversification to the market. By increasing the investor base, they support funding and liquidity to the Danish market, thereby contributing to lower interest rates for Danish homeowners. However, reliance on foreign investors could amplify market fluctuations in times of crisis, if such investors were to lose confidence in the Danish market.

[19] Housing price shocks affect household consumption via (i) wealth effects, through housing collateral (financial accelerator); and (ii) via financial wealth effects, through households' large pension savings invested in covered bonds.

borrowing incentivize the funding of housing with large mortgages. These factors explain why Danish households' debt-to-income ratios are among the highest in advanced economies. Large liabilities are counterbalanced by large assets (housing and pension). However, high gross debt, combined with illiquid assets (concentrated in real estate) expose households to price and interest rate shocks that can impact asymmetrically their balance sheet. Two types of households appear particularly vulnerable. Households who have purchased in potentially overvalued urban areas (SIP 2018), where loan-to-income (LTI) ratios and credit growth are higher than anywhere else. And low-income households who spend a significant share of their income on housing. These vulnerabilities are compounded by the large proportion of variable-rate and interest-only mortgages in the system (Figure 5).[20]

**29. Recent developments are encouraging but further action is needed.** Staff welcomes the comprehensive suite of policies that have been implemented in recent years. These include policies targeting households and financial intermediaries in the form of macroprudential policies (SIP 2018), supervisory guidance for MCIs and banks, and a reform of property taxation (IMF 2017). While overall house prices are softening and households are switching to loans with higher amortization and lower interest rate risk, staff advocates further deployment of coordinated policies to address remaining vulnerabilities.

**30. Macroprudential instruments.** In an economy with elevated house prices, rules targeting loan-to-value (LTVs) become less binding. Thus, increased focus on income-based measures, including debt-to-income (DTI), loan-to-income (LTI) and debt-service-to-income (DSTI) might prove more effective in addressing high leverage and encourage faster amortization. Staff welcomes rules implemented in 2018 to limit lending via interest-only and floating-rate mortgages to highly-indebted households.[21] However, authorities could strengthen DTI restrictions for all loans, irrespective of their loan-to-value ratios. Tighter limits on income-based measures for interest-only and adjustable-rate mortgages should also be considered, while calibrating limits to these measures for lower risk groups—first-time home buyers and low-levered households—and where financing is via fixed–rate mortgages.[22] Highly-leveraged households—with debt-to-income above 400 percent—should be subject to mandatory amortization, irrespective of amortization periods (SIP 2018).

**31. Macroprudential framework.** A review of the efficacy of policy implementation is encouraged, including a review of institutional arrangements (Annex V). The process followed by the SRC to arrive at a recommendation can take too long, potentially hindering implementation. Given that the decision-making power lies with the government, there is a risk that political considerations could delay the consensus process that tends to form the basis of such recommendations (FSAP

[20] House costs overburden could suddenly increase in the event of an interest rate shock. Deferred amortization combined with low interest rates could exacerbate leverage, while paying low installments.

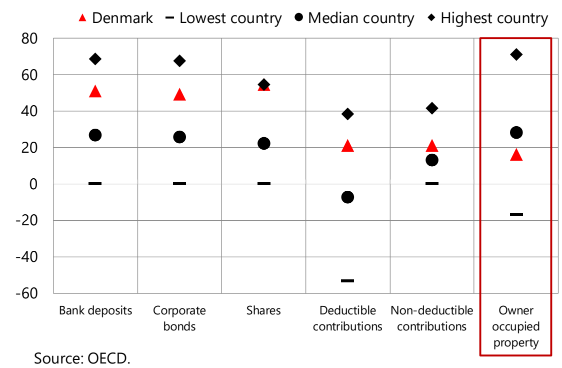
[21] Effective from 2018, lending restrictions for households with DTI greater than 4 times and LTV greater than 60 percent were implemented: (i) the interest-rate fixation of floating-rate mortgages needs to be at least 5 years; and (ii) deferred amortization is only applicable on 30-year fixed-rate loans.

[22] See Central Bank of Ireland (2016) for international experience.

2014). Experience from other countries indicates that improvements in timeliness can be achieved by assigning independent authorities a macroprudential mandate which includes legal powers to implement macroprudential policy with corresponding transparency and accountability requirements.

32. **Tax policy.** Tax treatment of owner-occupied housing is very favorable compared to other savings vehicles and most OECD countries.[23] MID should be reduced further, taking advantage of the current low rate environment. To incentivize homeowners to swap risky mortgages, MID could be made conditional on amortizing and/or fixed rate mortgages. Balancing tax incentives for pension contributions could release resources for larger down-payments; thereby reducing household leverage.

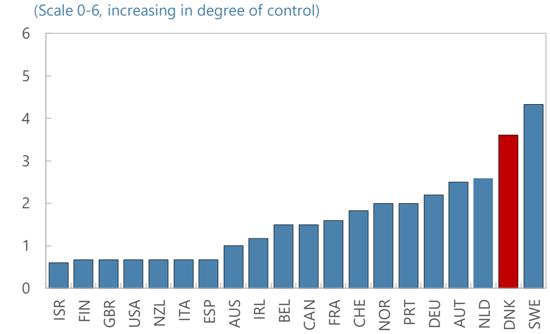
**Marginal Effective Tax Rates Across Asset Types, 2016**
(Percent)




Source: OECD.

33. **Housing supply.** Rent controls in Denmark, among the highest in advanced economies, should be reduced to stimulate the rental market, while protecting the interest of the most vulnerable. Restrictions on the size of new apartments should be relaxed in urban areas to improve demand-supply mismatches. Upgrading of public transportation could relieve house price pressures around fast-growing urban centers. Streamlined zoning and planning procedures across municipalities could increase supply, thereby alleviating price pressures.

**Rent Control 1/**
(Scale 0-6, increasing in degree of control)




Sources: Geng (2018); OECD; Cuerpo et. al. (2014)
1/ The indicator is a composite indicator of the extent of controls of rents, how increases in rents are determined and the permitted cost pass-through onto rents in each country.

### *Authorities' Views*

34. **Authorities agree that macro-financial risks stemming from the interaction between high household leverage and high house valuations should be followed closely.** Authorities indicate that household resilience to interest rate increases likely improved as more homeowners continue shifting towards fixed rate mortgages and longer fixing periods. They also welcome the recent softening in apartment prices. The authorities argue that additional measures would require further analysis of the effects on the housing market and the overall economy. Authorities see the macroprudential framework as well functioning including the timeframe for the CCyB implementation and SRC's independence. The DN notes that the long-term success of the framework depends on policy-makers' continued implementation of the SRC's recommendations.

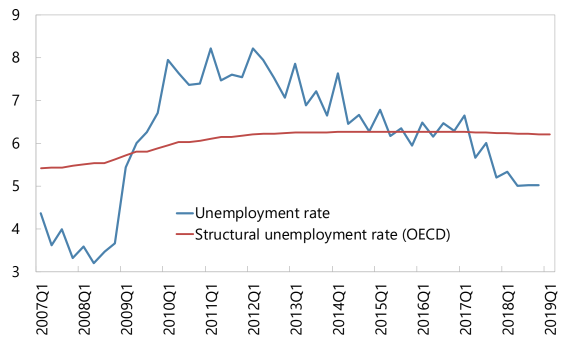
[23] MID is comparatively high while capital gains on owner-occupied housing are exempt from taxation.

## C. Structural Policies

### Labor Market

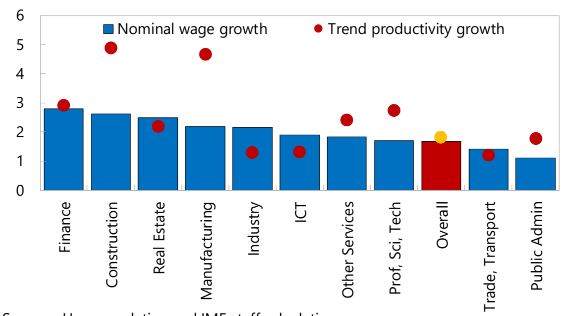
**35. The labor market continues to improve owing to the success of past policies.** Supported by reforms and strong economic activity, employment and labor force participation rates have increased, while unemployment has dropped below the structural rate. Overall, wage growth remains moderate and in line with productivity, although there seem to be misalignments in some sectors.

**Unemployment Rate**
(Percent of labor force)




Sources: Statistics Denmark; OECD; and IMF staff calculations.

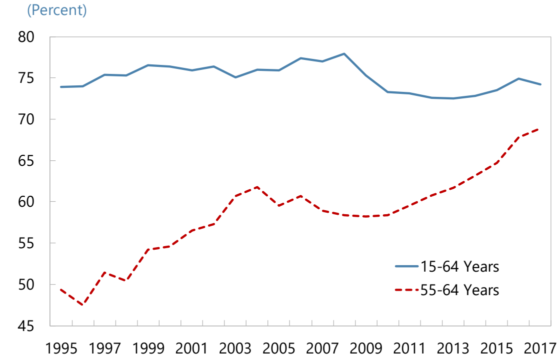
**Wage and Productivity 1/**
(Y/Y percent change, 3-mma, 2018)




Sources: Haver analytics; and IMF staff calculations.
1/ Both wage and labor productivity growth are nominal. Labor productivity growth equals growth in real labor productivity plus growth in the sector's deflator.

**36. Increasing labor supply is critical for the long-term sustainability of the Danish system.** Policies have been designed to keep people in employment longer, incentivize labor participation, avoid inactivity traps, upgrade skills, and improve migrant integration. Earlier reforms include the 2011 pension reform, which has increased the employment rate of older workers by linking the statutory retirement age to life expectancy. More recent initiatives include the 2018 tax reform that increased deductions for pension contributions. To incentivize labor participation, *JobReform* imposed tighter work requirements for social assistance, while the 2018 tax reform lowered taxes on labor income. The government recently agreed on initiatives to increase enrollment and completion rates of vocational education and training (VET) programs (Denmark's National Reform Programme 2019). Measures (e.g. 2017 tripartite agreement) were introduced to ensure that skills demanded by businesses are supplied as the labor market evolves. To promote labor market participation of refugees, a basic integration education (IGU) program was launched in 2016.

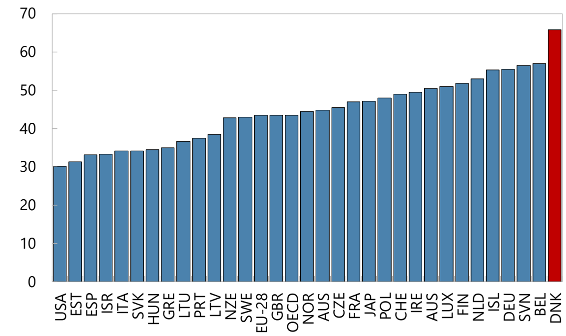
**Denmark: Employment Rate by Age Groups**
(Percent)




Source: Haver Analytics.

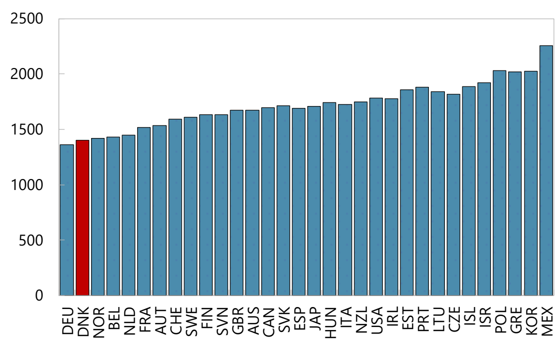
**37. While these initiatives are bearing fruit—participation rates have increased, and the long-term unemployment rate has declined—challenges remain.** Denmark has one of the lowest average work hours among European countries. While this reflects to some extent social preferences, Denmark also has high labor tax rates, which can weaken incentives to work. Youth inactivity has increased since the crisis due to the high bar of entering the Danish labor market. Skill shortages are increasing and access to skilled foreign labor remains cumbersome. While programs for labor market integration of refugees (e.g. IGU program) seem to be yielding favorable outcomes, lagging unemployment of female refugees remains a concern. Overall, gender gaps have narrowed but significant challenges remain, for instance the share of women in management positions is one of the lowest among the OECD countries (Kleven, Landais, and Søgaard 2018; OECD 2019). Public childcare provision services tend to be limited outside regular working hours. Women tend to bear a larger burden of primary childcare, including maternity leaves (OECD 2019).

**Participation Tax Rate, Average Wage**
(Share of earnings lost to higher taxes and lower benefits, 2018)



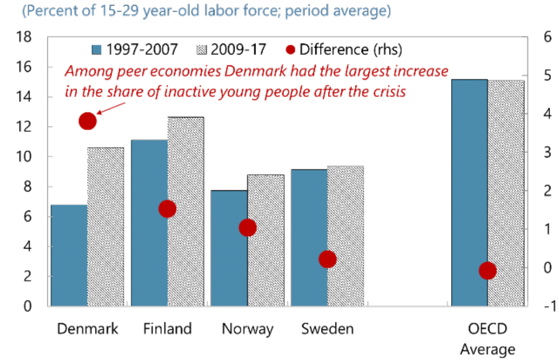

Sources: OECD Tax-Benefit model; and IMF staff calculations.

**Annual Hours Worked Per Worker**
(Units, 2017)




Source: OECD.

**Youth Not in Employment, Education or Training**
(Percent of 15-29 year-old labor force; period average)




Sources: OECD and IMF staff calculations.

38. **A comprehensive tax and benefit reform could increase labor supply.** Increasing reliance on in-work benefits and improving targeting to lower-income workers would help alleviate inactivity traps and improve youth employment. Reducing marginal tax rates for average income earners would increase hours worked. Staff analysis suggests that a reform of this type, even when implemented in a revenue-neutral way, could have a significant positive impact on employment rates, hours worked, and the level of output (Annex I).

39. **Policies to improve employment in knowledge-intensive sectors, better integrate migrants, and reduce the gender gap should be considered.** There is a clear scope to increase employment in knowledge-intensive sectors (KIS). However, labor market institutions should adapt to cope with transformation to KIS and to counter inequality growth (Annex III). Policies should continue to encourage education in fields of high demand, including technical and digital skills (*Technology Pact*), which would ensure that the right skills are in place and help workers face the future of work (*Disruption Council*). Staff welcomes the continued budgetary support for VET as it would support the effort to align skills to future labor demands as well as facilitate youth

employment. Staff recommends streamlining the accreditation of foreign degrees to raise the likelihood of migrants being employed. Lowering minimum remuneration requirements for residency permits via the pay limit scheme and clarifying conditions for continued residency for occupations on the "positive list" should help attract skilled foreign labor.[24] Staff welcomes the renewal of the IGU program. Efforts to improve integration of female refugees remains a priority. To close the gender gap, flexibility in the provision of childcare services should be increased and incentives for a more equal split of parental leave could be considered.

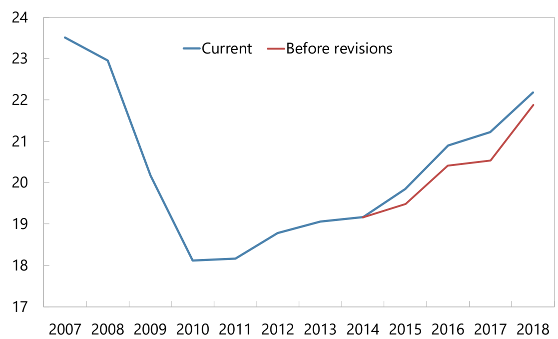
***Authorities' Views***

**40. Raising labor supply further remains a priority for the authorities.** There is recognition that labor supply could be further increased through tax reforms, notably by using targeted in-work benefits and reducing marginal tax rates. They consider that policies to encourage education in fields of high demand are important, especially in the face of automation. Authorities agree with the need to better integrate migrants and attract foreign labor. They generally consider policies to shrink the gender gap important, including for female refugees, but some pointed out the importance of political consensus to introduce additional measures.

## Reforms to Boost Investment and Productivity

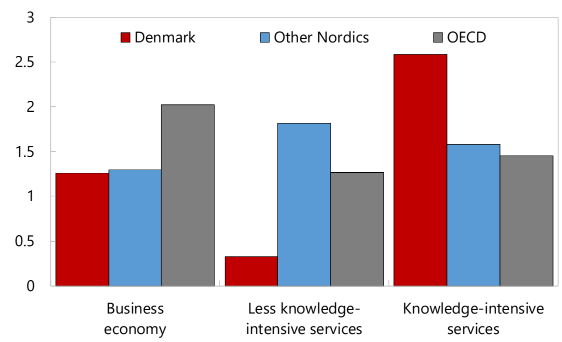
**41. Productivity growth remains weak.** As in many advanced economies, Denmark's overall labor productivity growth has been weak in recent years. This is in part due to weak investment after the crisis (SIP 2018); although recent revisions of national accounts lifted investment-to-GDP by 0.7 percentage point in 2017. Productivity growth was weak in less knowledge-intensive service industries such as trade, transport, food and accommodation, but stronger in knowledge-intensive services (Annex III).

**Denmark: Gross Fixed Capital Formation**
(Percent of GDP, current prices)




Sources: European Commission; Eurostat; and IMF staff calculations.

**Labor Productivity Growth, 2000-2015**
(Percent)



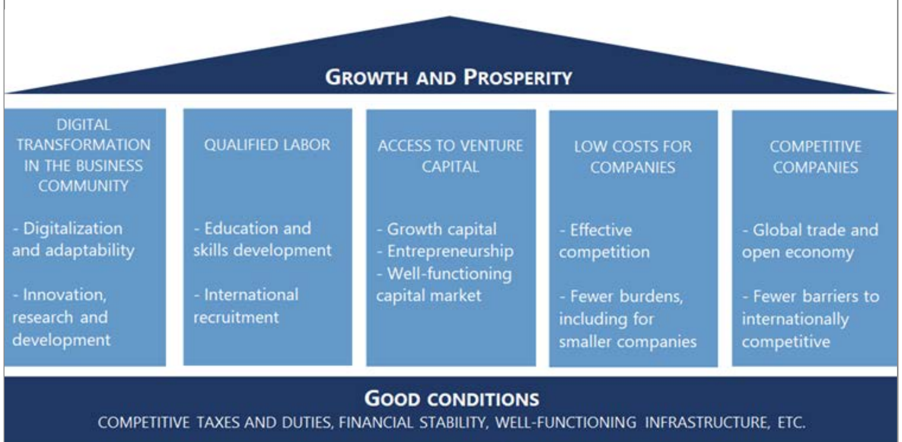

Source: OECD.

**42. Denmark has taken important steps to increase productivity growth and foster investment.** The government's business-oriented policy focuses on six areas including digitalization, qualified labor, venture capital, cost of doing business, competitiveness, and good conditions for investment (Ministry of Industry, Business and Financial Affairs 2018). The digital growth reform

[24] The "positive list" refers to a list of occupations in Denmark where there is a shortage of qualified labor.

package, introduced in early 2018, provides legislative support for digitalization. The launch of the Digital Hub Denmark, the Technology Pact, the Danish National Strategy for Artificial Intelligence, and expansion of public-private partnerships provide incentives for adopting new technologies, particularly in SMEs. Measures were also implemented to foster cyber security. Equity savings accounts to ease investments in stock markets as well as a tax deduction for households investing in unlisted SMEs were introduced. Additionally, the tax deduction for R&D expenditures will be gradually increased from 100 percent to 110 percent in 2026. The Danish Growth Fund was set up as a one-stop shop for access to finance entrepreneurs, while the Innovation Fund facilitates subsidies for innovation and R&D.

**Denmark's Business-Oriented Growth Policy**




Source: Danish Government "Report on Growth and Competitiveness 2018".

**43. But further measures can be taken.**

- ***Support broad-based innovation.*** Aggregate R&D spending is high but concentrated among a few large firms. Thus, R&D deductions could be tailored to incentivize a larger spectrum of firms, especially SMEs. The R&D super-deduction could be made more generous as currently only part of it is refundable. Collaboration between universities and businesses could be promoted further.[25]

- ***Improve the institutional framework for competition.*** Denmark's competition framework is generally in line with international best practice, but the structure for enforcement and determination is more complex than in other EU countries (OECD 2015).[26] While authorities are working on implementing the European Competition Network directive (ECN+)[27], they should aim for a simple and efficient framework that gives them greater power to use administrative

[25] Researchers could be incentivized to commercialize their work by reducing complex cooperation regulation and improving intellectual property rights.

[26] Due to Denmark's constitutional setup, authorities are not allowed to issue administrative fines. Competition authorities have powers to "cease and desist" and hand over to prosecutors, who can issue penalties.

[27] The ECN+ directive aims to make national competition authorities more effective enforcers and to ensure the proper functioning of the internal market (Directive (EU) 2019/1).

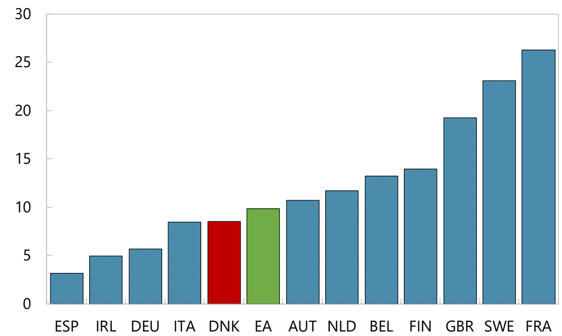
instruments.[28] Staff welcomes the agreement entered by the government in April 2018 designed to ensure fairer and more equal competition between public and private bodies.

- ***Foster the environment for high productivity sectors to expand.*** KIS exhibit high productivity growth; thus, expanding these sectors is important to raise productivity (Annex III). Policies to increase ICT investment and ensure that labor adapts to the future of work (Labor section) are needed so that high productivity-growth sectors continue expanding while mitigating potentially disruptive effects on workers.

**44. Improving access to finance and rebalancing taxation will increase investment:**

- ***Upgrade capital markets.*** While capital markets appear well developed, they are dominated by few large firms. The equity market for SMEs and the number of initial public offerings is relatively small in Denmark (Copenhagen Economics 2018). Better access to equity finance would improve funding options for new and smaller firms that might be subject to credit constraints due to lack of collateral. Reviewing regulation for pension funds to provide further incentives for investments in domestic equity markets while ensuring adequate risk practices should be considered. Ensure that adequate resources are available for vehicles like the Danish Growth Capital Funds, by which pension sector and public resources are invested in entrepreneurs and SMEs. Staff welcomes the introduction of the Growth Plan for Creative Business.[29]

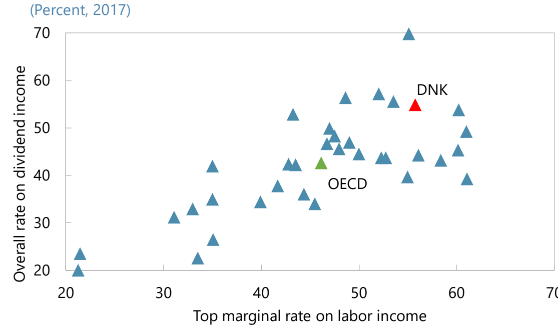
**Corporate Bond Market, 2017**
(Percent of GDP)




Source: OECD.

- ***Taxation.*** Investment by startups and high-technology firms would benefit from relaxing the cap on the use of carry-forward losses, as this limitation poses a challenge for cash-constrained startups which tend to be initially loss making. Reducing the taxation of dividends, while ensuring regulations are in place to minimize avoidance, would encourage equity investment. The introduction of an incremental ACE would reduce the debts bias and cost of capital. However, an assessment of implementation risks is needed (SIP 2018).

**Top Marginal Tax Rates**
(Percent, 2017)




Source: OECD Tax database.
Notes: The overall rate on dividend income includes the personal and corporate income taxes on distributed profits.

[28] IMF study shows that weaker competition or increased market power (as measured by markups over marginal cost) could weaken investment, deter innovation, reduce labor income shares, and make it more difficult for monetary policy to stabilize output (WEO 2019).

[29] This aims to ensure the regulation framework is adequate for new businesses.

***Authorities' Views***

45. **The authorities agree on the importance of boosting productivity.** They see the potential advantages of introducing an incremental ACE to reduce debt-bias but note the significant challenges associated with transitional arrangements and potential revenue losses in the long term. The authorities took note of recommendations to introduce further tax measures to promote R&D investment and benefit small and high-technology firms; but they indicated that welfare-enhancing effects of further subsidization remain unclear. They broadly agree that upgrading capital markets could improve access to equity finance for SMEs and that growth of knowledge-intensive services is an important contributor to continued productivity growth. Authorities agree with recommendations to streamline and strengthen the framework for competition, but raised the point that initiatives shall take into consideration other social objectives and legal constraints.

# STAFF APPRAISAL

46. **Growth remained solid in 2018, supported by domestic demand, with the economy operating above potential.** The external position was moderately stronger than the level consistent with medium-term fundamentals in 2018. The outlook is for continued strong growth but with downside risks. A sharper than expected slowdown in Denmark's main trading partners could slow export growth. High household debt amid elevated house valuations remains a key vulnerability. The ongoing money laundering case could further affect confidence in the financial sector and undermine financial stability. Policies should enhance macro-financial resilience and target higher potential growth.

47. **Denmark's public finances are sound with substantial fiscal space in the medium term.** The fiscal stance should remain neutral, while letting automatic stabilizers operate fully in case of shocks to aggregate demand. In the event of a severe downturn, additional temporary loosening should be considered, while remaining anchored to the medium-term objective. Efficiency-improving reforms that cover both revenues and expenditures could be implemented in a fiscally-neutral way or designed to provide stimulus if loosening is warranted.

48. **The fixed exchange rate policy has served Denmark well.** The policy provides a framework for low and stable inflation in Denmark.

49. **The banking system is profitable, liquid and solvent, but pockets of vulnerabilities remain.** Lending surveys suggest that some banks are relaxing credit standards for corporate loans. To strengthen financial resilience, a combination of micro- and macroprudential tools should be considered to increase capital buffers, in addition to the CCyB, if risks continue to build up. The decision on banking union participation should carefully assess costs and benefits.

50. **The authorities should build upon their recent efforts to strengthen cross-border AML/CFT supervision.** The priority next steps are to: (i) develop a comprehensive institutional risk assessment model; (ii) increase the depth of the DFSA's AML/CFT on-site inspections;

(iii) further expand its sanctioning powers, including to issue administrative fine notices; and (iv) strengthen regional and international cooperation.

**51. High household leverage amid elevated house valuations call for coordinated policy action.** Increased focus on income-based macroprudential instruments might prove more effective at reducing macro-financial vulnerabilities than current instruments that rely more on loan-to-value ratios. The authorities should seek to improve the efficacy of policy implementation, including through a review of the SRC's institutional arrangements. Mortgage interest deductibility should be reduced further than currently planned. Policies to promote housing supply should be considered.

**52. The labor market is strong, with pressures gradually building in some sectors of the economy.** Increasing benefits to low-income workers would help alleviate inactivity traps and promote youth employment. Reducing marginal tax rates for average income earners could increase hours worked. The authorities could also further incentivize upgrading of technical and digital skills, integrate migrants, and attract skilled foreign labor.

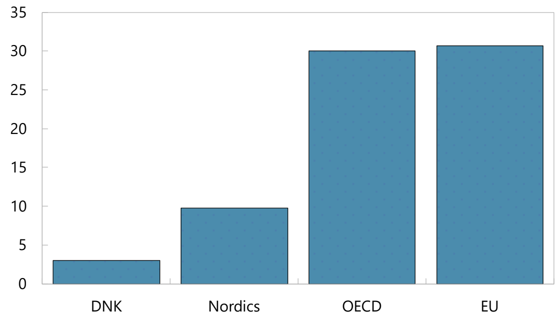
**53. Productivity growth remains weak, as in many advanced economies, partly because of lower investment rates following the crisis.** The authorities should support broad-based innovation, improve the institutional framework for competition and foster the environment for high-productivity sectors to expand. Addressing the debt bias and improving access to equity finance for SMEs would also promote investment and help reduce the current account surplus.

**54. It is recommended that the next Article IV consultation take place on the standard 12-month cycle.**

## Figure 1. Denmark: Context

*Perception-based indicators suggest Denmark's business climate is amongst the best in the world…*

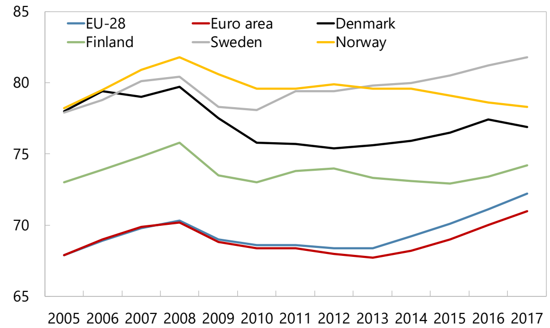
### Ease of Doing Business, 2019
(World Rankings)




Source: World Bank Doing Businesss 2019.
Note: Lower numbers mean greater ease of doing business.

*…amid high levels of employment.*

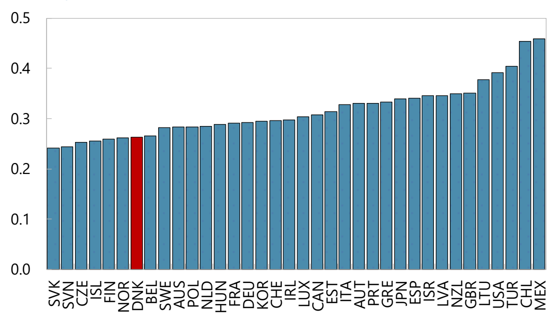
### Employment Rates
(Percent of population)




Source: Eurostat.

*Inequality is low by international standards…*

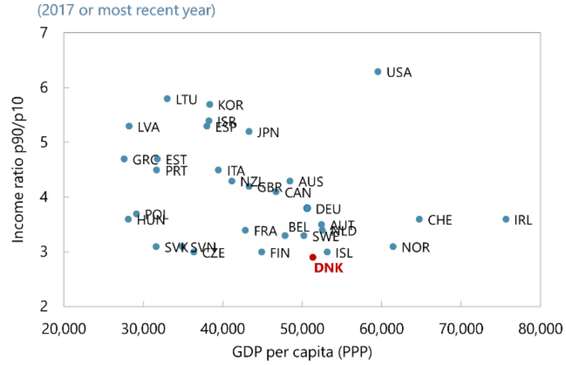
### Gini Coefficients
(Disposable income, 2016)




Source: OECD.
Note: Lower numbers mean less income inequality.

*… with high average income and low dispersion.*

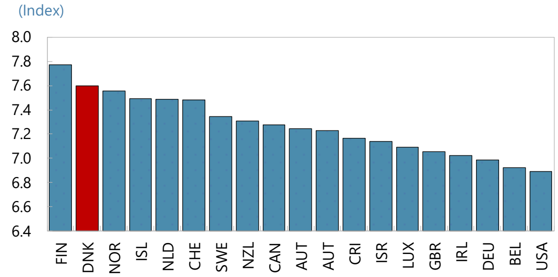
### Income Levels and Income Inequality
(2017 or most recent year)




Sources: OECD; World Bank.

*Measures of wellbeing suggest Danes are among the happiest people in the world.*

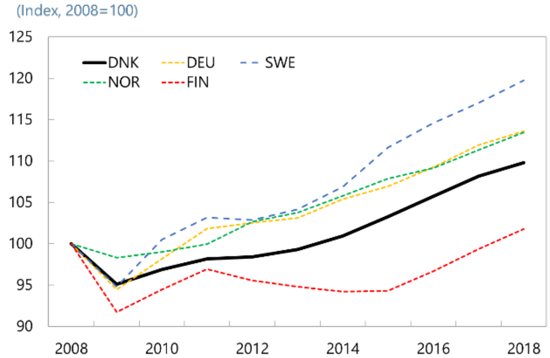
### Happiness Score
(Index)




Sources: World Happiness Report 2019, UN Sustainable Development Solutions Network.
Note: Higher numbers mean more happiness. Caution is needed in interpreting scores for any individual country as the quality of underlying data can vary.

*Although recently, Denmark's recovery from the crisis has trailed peers in the region.*

### Gross Domestic Product at Constant Prices
(Index, 2008=100)

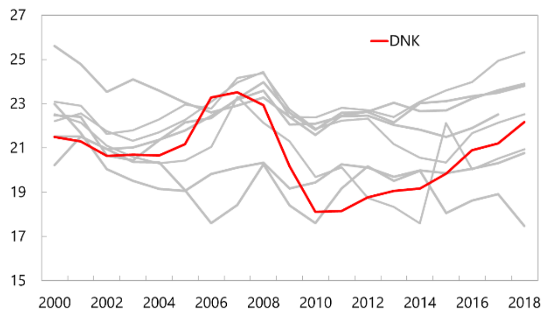



Sources: IMF Economic Outlook; and IMF staff calculations.

## Figure 2. Denmark: Recent Developments

*Investment growth has accelerated after lagging peers for some time following the crisis…*

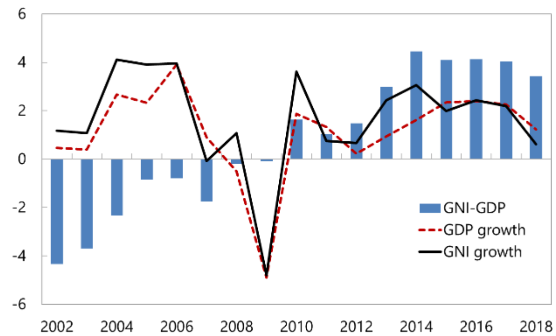
**Total Investment**
(Percent of GDP)




Note: EU peers are AUT, BEL, FIN, FRA, DEU, LUX, NLD and SWE.
Sources: Haver Analytics; and IMF staff calculations.

*…while gross national income has exceeded GDP in recent years.*

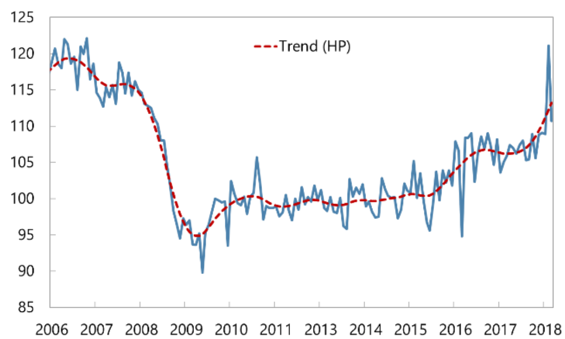
**Denmark: GDP and GNI**
(Percent)




Sources: Statistics Denmark; and IMF staff calculations.

*Industrial production remains healthy…*

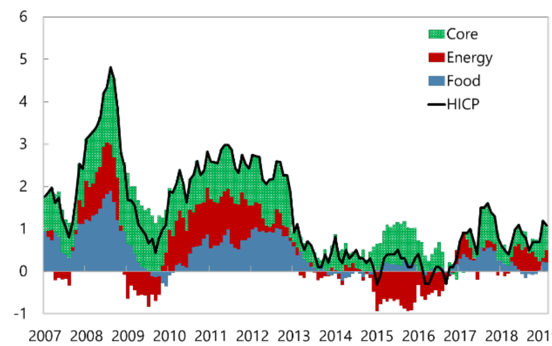
**Industrial Production Index**
(2015=100, SWDA)




Sources: Haver Analytics; and IMF staff calculations.

*… while inflation remains subdued.*

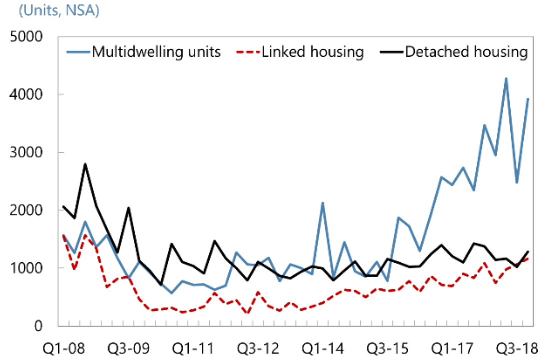
**Harmonized Consumer Price Inflation**
(Contribution to yoy percentage point change in inflation)




Sources: Haver Analytics; and IMF staff calculations.

*Recent increases in completions of multi-dwelling units…*

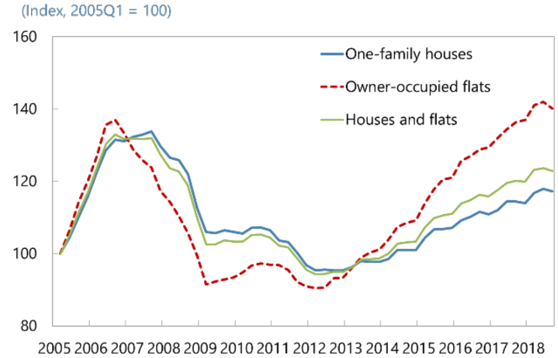
**Residential Construction Completions**
(Units, NSA)




Sources: Statistics Danmark.

*…have likely supported the softening in house prices.*

**Real House Prices**
(Index, 2005Q1 = 100)

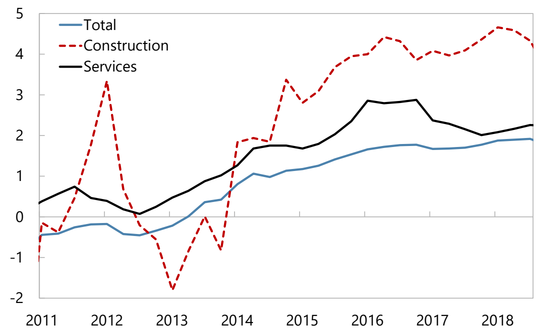



Sources: Statistics Denmark and Fund staff calculations.

## Figure 3. Denmark: Labor Market Developments

*Labor market gains continue, with the construction and and services sectors outpacing overall growth.*

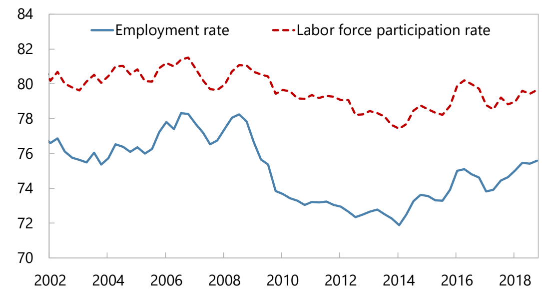
**Employment Growth**
(Yoy, percent, SA)




Sources: Statistics Denmark; and IMF staff calculations.

*Employment and participation rates have increased…*

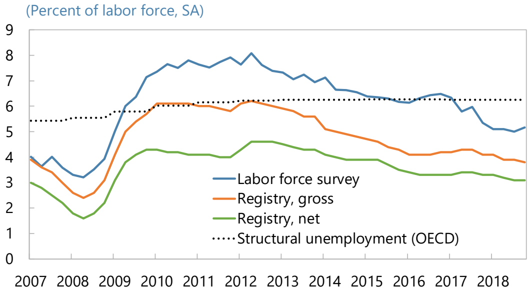
**Labor Market Rates**
(Percent of working age (15-64 years old) population, SA)




Sources: Statistics Denmark; and IMF staff calculations.
Note: Employment rate = Employed/working age population; Labor force participation rate = Labor force/working age population.

*…and unemployment rates have declined.*

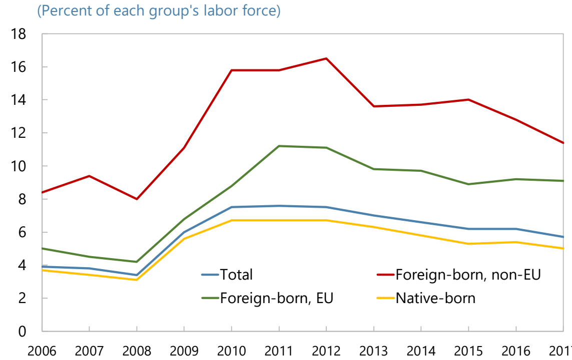
**Unemployment Rates 1/**
(Percent of labor force, SA)




Sources: Statistics Denmark; OECD; and IMF staff calculations.
1/ "Registry" refers to unemployed persons registered with the unemployment insurance funds and public job centers. Gross is the number of registered (net) unemployed plus activation program participants.

*However, unemployment rates among migrants remain higher than the economy-wide rate.*

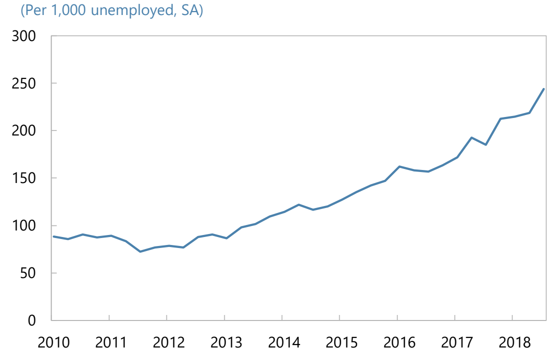
**Unemployment Rates by Country of Birth**
(Percent of each group's labor force)




Sources: Eurostat; and IMF staff calculations

*Vacancies have increased reflecting tight labor markets…*

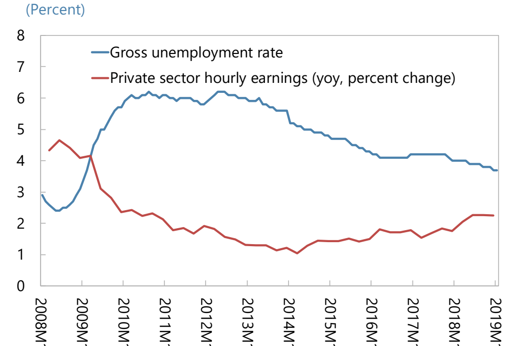
**Job Vacancies**
(Per 1,000 unemployed, SA)




Source: Statistics Denmark.

*…with a pick-up in wage growth.*

**Unemployment Rate and Private Sector Hourly Earnings**
(Percent)

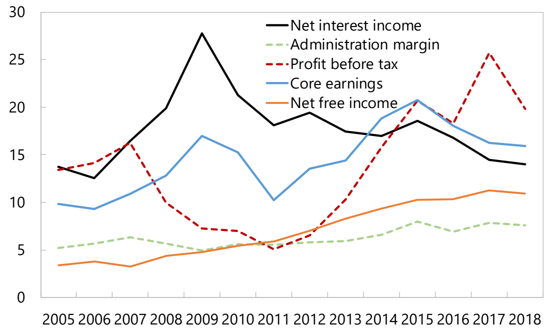



Sources: Statistics Denmark; and IMF staff calculations.

## Figure 4. Denmark: Recent Development in the Financial Sector

*Despite declining net interest margins, profits remain solid due to a rise in net fee income and income from administration margins.*

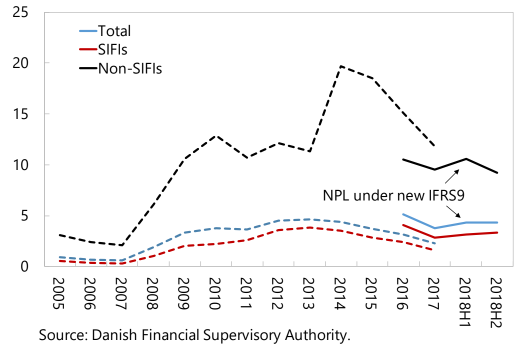
**Income of SIFI Credit Institutions**
(In billions of DKK)




Source: Danmarks Nationalbank.

*Small and middle-sized banks continue to show higher impaired loans than large banks though they are on a declining path.*

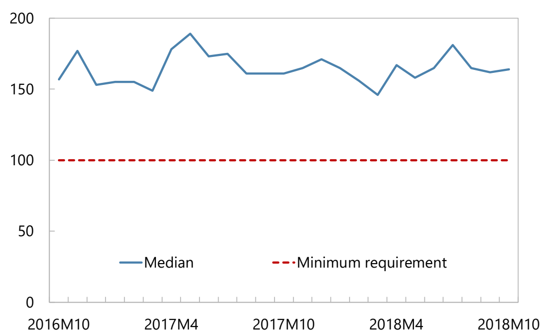
**Impaired Loans**
(Percent of total loans in group)




Source: Danish Financial Supervisory Authority.

*Banks have ample liquidity...*

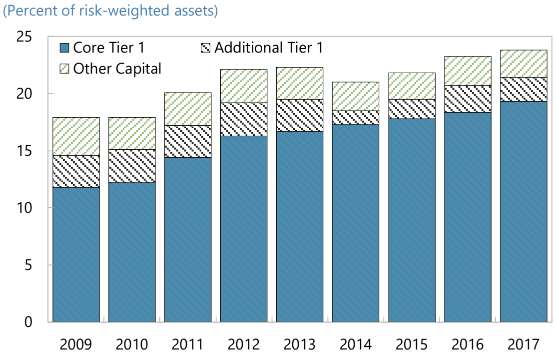
**Liquidity Coverage Ratio of SIFIs**
(Percent)




Source: Danmarks Nationalbank.

*... and strong capital positions...*

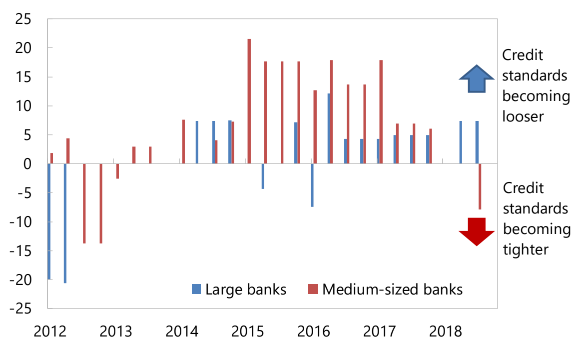
**Regulatory Capital of Credit Institutions**
(Percent of risk-weighted assets)




Source: Danish Financial Supervisory Authority.

*...but pockets of vulnerability remain as some banks have been relaxing credit standards for corporate lending.*

**Credit Standards For Corporate Customers**
(Index)

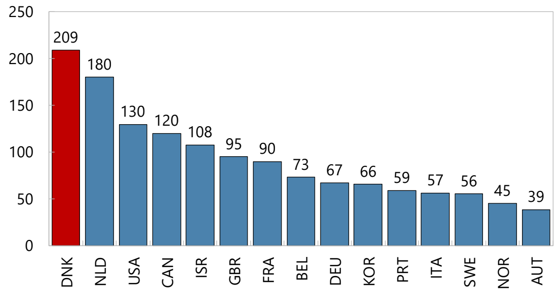



Source: Danmarks Nationalbank, Financial Stability Report, 2H2018.

## Figure 5. Denmark: Recent Development in the Housing Sector

*Large household savings and mandatory pension contributions have created a very large pension system…*

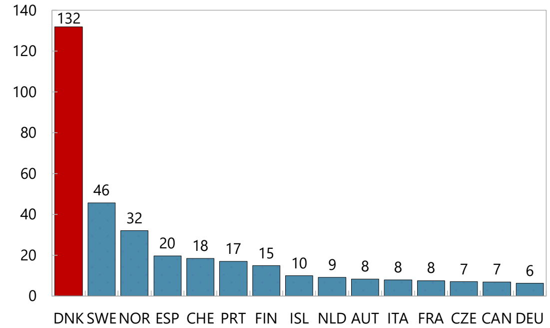
### Pension and Insurance Assets
(Percent of GDP; 2016 or latest)




Sources: OECD Financial Balance Sheets database; OECD Global Pension Statistics.
Note: Assets for funded and private pension arragements are shown for Denmark, Netherlands, the U.K. and Israel.

*…which have facilitated the development of the world largest mortgage covered bond market…*

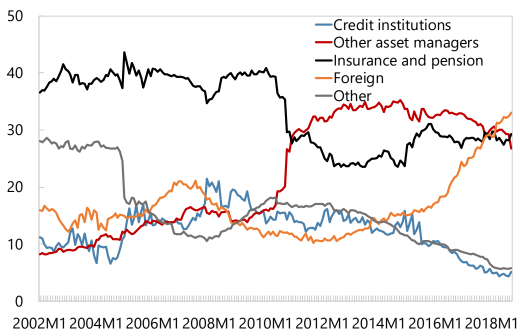
### Mortgage Covered Bond Markets
(Outstanding amount, 2016; percent of GDP)




Sources: European Covered Bond Council; and IMF WEO.

*…. with insurance and pension companies, and more recently foreign investors, amongst the largest holders of covered bonds…*

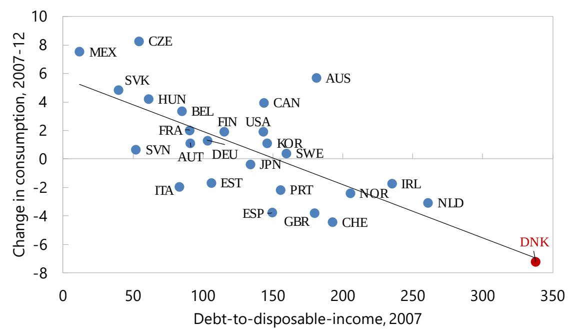
### Investors in Danish Covered Mortgage Bonds Over Time
(Percent)




Source: Danmarks Nationalbank.

*…. linking household consumption to real estate shocks.*

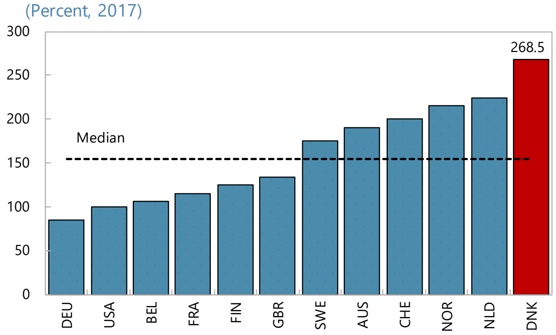
### Household Leverage and Consumption
Percent




Source: Riksbank Financial Stability Report (H1 2015).
Note: Consumption is real private consumption per working-age capita.

*Danish households' debt-to-income ratios are among the highest in advanced economies…*

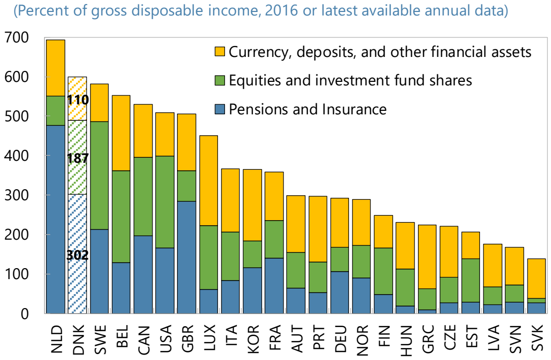
### Household and NPISH Outstanding Debt to Gross Disposable Income
(Percent, 2017)




Sources: Haver Analytics; and IMF staff calculations.

*… high liabilities are counterbalanced by large housing and pension assets.*

### Financial Assets
(Percent of gross disposable income, 2016 or latest available annual data)

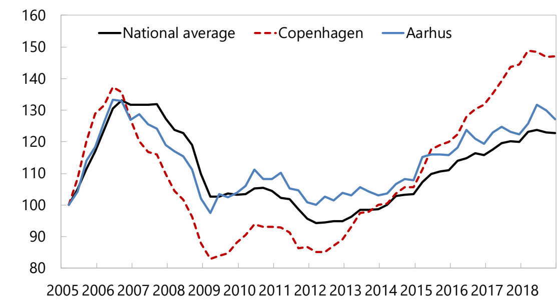



Sources: OECD; and Fund staff calculations.

## Figure 5. Denmark: Recent Development in the Housing Sector (Concluded)

*After an array of reforms, house prices appear to have softened but they remain high.*

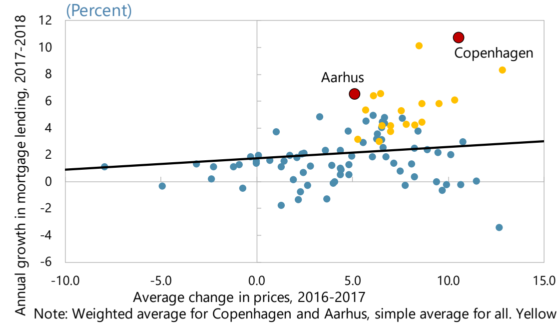
**Real Property Prices 1/**
(Index, 2005Q1 = 100)




Sources: Association of Danish Mortgage Banks; Statistics Denmark; and IMF staff calculations.
1/ Prices are deflated by CPI. National average and Copenhagen are the weighted averages of owner-occupied flats and one-family houses nationally and in Copenhagen, respectively.

*Households who have purchased in overvalued urban areas such as Copenhagen and Aarhus....*

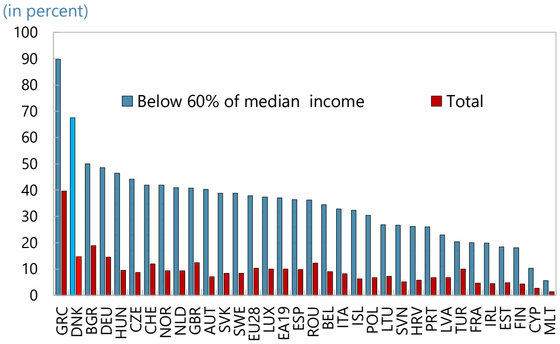
**Apartments and Houses**
(Percent)




Note: Weighted average for Copenhagen and Aarhus, simple average for all. Yellow dots denote Capital region.
Sources: Danmarks Nationalbank, Finance Denmark; and IMF staff calculations.

*.... as well as low income households, are particularly vulnerable to house price shocks.*

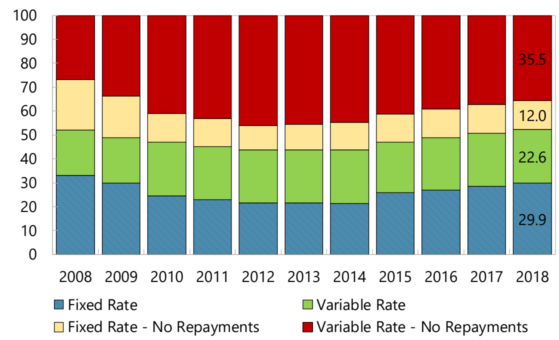
**Housing Cost Overburden by Income Group, 2017 1/**
(in percent)




1/ 2018 data for DNK, LVA and HUN; 2015 data for ISL.
Source: Eurostat.

*Risk are compounded by the high share of mortgages on variable terms which is over 50 percent.*

**Stock of Residential Mortgages by Type**
(Percent of Total)




Source: Danmarks Nationalbank.

*Highly indebted households are most vulnerable to house price falls.*

**Highly Indebted Households Are Vulnerable to House Price Falls**

20 percent drop in house prices →

Share of total debt, percent

| Loan-to-value | 0-200 | 200-400 | More than 400 |
|---|---|---|---|
| More than 100 | 7 | 18 | 10 |
| 50 - 100 | 14 | 26 | 12 |
| 0 - 50 | 8 | 4 | 2 |

Loan-to-income

Share of total debt, percent

| Loan-to-value | 0-200 | 200-400 | More than 400 |
|---|---|---|---|
| More than 100 | 11 | 30 | 14 |
| 50-100 | 12 | 16 | 8 |
| 0-50 | 5 | 2 | 1 |

Loan-to-income

Source: Danmarks National Bank.

## Table 1. Denmark: Selected Economic and Social Indicators, 2016–24

| | 2016 | 2017 | 2018 | 2019 proj. | 2020 proj. | 2021 proj. | 2022 proj. | 2023 proj. | 2024 proj. |
|---|---|---|---|---|---|---|---|---|---|
| **Supply and Demand (change in percent)** | | | | | | | | | |
| Real GDP | 2.4 | 2.3 | 1.4 | 1.7 | 1.9 | 1.7 | 1.6 | 1.5 | 1.5 |
| Final domestic demand | 2.7 | 2.3 | 2.5 | 2.1 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 |
| Private consumption | 2.1 | 2.1 | 2.3 | 2.5 | 2.4 | 2.3 | 2.2 | 2.2 | 2.1 |
| Public consumption | 0.2 | 0.7 | 0.8 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 |
| Gross fixed investment | 7.6 | 4.6 | 5.1 | 3.4 | 3.0 | 2.8 | 2.7 | 2.6 | 2.6 |
| Net exports 1/ | 0.1 | 0.2 | -1.1 | -0.1 | 0.1 | 0.0 | -0.1 | -0.2 | -0.2 |
| Gross national saving (percent of GDP) | 29.4 | 29.6 | 28.5 | 28.7 | 28.6 | 28.5 | 28.5 | 28.6 | 28.6 |
| Gross domestic investment (percent of GDP) | 21.4 | 21.6 | 22.7 | 23.0 | 23.2 | 23.4 | 23.6 | 23.8 | 24.0 |
| Potential output | 1.4 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 |
| Output gap (percent of potential output) | 0.5 | 1.1 | 0.9 | 0.8 | 1.0 | 1.0 | 0.9 | 0.7 | 0.5 |
| **Labor Market (change in percent)** 2/ | | | | | | | | | |
| Labor force | 3.2 | -1.0 | 0.9 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 |
| Employment | 3.2 | -0.5 | 1.7 | 0.6 | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 |
| Harmonized unemployment rate (percent) | 6.2 | 5.7 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.1 | 5.2 |
| **Prices and Costs (change in percent)** | | | | | | | | | |
| GDP deflator | 0.7 | 1.4 | 0.4 | 1.7 | 1.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| CPI (year average) | 0.0 | 1.1 | 0.7 | 1.3 | 1.5 | 1.8 | 2.0 | 2.0 | 2.0 |
| **Public Finance (percent of GDP)** 3/ | | | | | | | | | |
| Total revenues | 52.6 | 52.6 | 51.9 | 51.7 | 51.2 | 51.0 | 50.8 | 50.8 | 50.9 |
| Total expenditures | 52.7 | 51.2 | 51.4 | 51.6 | 51.2 | 51.2 | 51.0 | 50.9 | 50.8 |
| Overall balance | -0.1 | 1.4 | 0.5 | 0.2 | 0.0 | -0.1 | -0.2 | -0.1 | 0.1 |
| Primary balance 4/ | 0.4 | 1.6 | 0.4 | 0.0 | -0.4 | -0.4 | -0.5 | -0.4 | -0.1 |
| Cyclically-adjusted balance (percent of potential GDP) | -0.4 | 0.6 | -0.1 | -0.5 | -0.8 | -0.9 | -0.9 | -0.6 | -0.3 |
| Structural balance (percent of potential GDP) 5/ | -0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 |
| Gross debt | 37.2 | 35.5 | 34.3 | 33.0 | 31.9 | 33.9 | 35.9 | 37.6 | 38.2 |
| **Money and Interest Rates (percent)** | | | | | | | | | |
| Domestic credit growth (end of year) | 1.6 | 1.5 | 3.5 | ... | ... | ... | ... | ... | ... |
| M3 growth (end of year) | -3.9 | 3.0 | -2.9 | ... | ... | ... | ... | ... | ... |
| Short-term interbank interest rate (3 month) | -0.1 | -0.3 | -0.3 | ... | ... | ... | ... | ... | ... |
| Government bond yield (10 year) | 0.3 | 0.5 | 0.4 | ... | ... | ... | ... | ... | ... |
| **Balance of Payments (percent of GDP)** | | | | | | | | | |
| Exports of goods & services | 53.6 | 54.5 | 54.7 | 54.6 | 54.5 | 54.2 | 53.7 | 53.4 | 53.3 |
| Imports of goods & services | 46.9 | 47.4 | 49.6 | 49.9 | 50.1 | 49.9 | 49.6 | 49.4 | 49.4 |
| Trade balance, goods and services | 6.7 | 7.1 | 5.0 | 4.6 | 4.4 | 4.3 | 4.1 | 4.0 | 3.9 |
| Oil trade balance | -0.2 | -0.2 | -0.4 | -0.5 | -0.7 | -0.7 | -0.8 | -0.9 | -1.1 |
| Current account | 7.9 | 8.0 | 5.8 | 5.6 | 5.3 | 5.1 | 4.9 | 4.8 | 4.7 |
| International reserves, changes | 0.4 | 0.8 | -0.3 | ... | ... | ... | ... | ... | ... |
| **Exchange Rate** | | | | | | | | | |
| Average DKK per US$ rate | 6.7 | 6.6 | 6.3 | ... | ... | ... | ... | ... | ... |
| Nominal effective rate (2010=100, ULC based) | 97.6 | 98.7 | 100.2 | ... | ... | ... | ... | ... | ... |
| Real effective rate (2010=100, ULC based) | 94.9 | 97.1 | 99.4 | ... | ... | ... | ... | ... | ... |
| **Memorandum Items** | | | | | | | | | |
| Nominal GDP (Bln DKK) | 2100 | 2178 | 2218 | 2294 | 2377 | 2468 | 2565 | 2667 | 2771 |
| GDP (Bln USD) | 312 | 330 | 351 | ... | ... | ... | ... | ... | ... |
| GDP per capita (USD) | 54665 | 57380 | 60766 | ... | ... | ... | ... | ... | ... |

Sources: Danmarks Nationalbank, Eurostat, IMF *World Economic Outlook,* Statistics Denmark, and Fund staff calculations.

1/ Contribution to GDP growth.
2/ Based on Eurostat definition.
3/ General government.
4/ Overall balance net of interest.
5/ Cyclically-adjusted balance net of temporary fluctuations in some revenues (e.g., North Sea revenue, pension yield tax revenue) and one-offs.

## Table 2. Denmark: Balance of Payments, 2016–24

| | 2016 | 2017 | 2018 | 2019 proj. | 2020 proj. | 2021 proj. | 2022 proj. | 2023 proj. | 2024 proj. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | *Billions of DKK* | | | | |
| **Current Account** | 166.3 | 173.3 | 128.2 | 129.6 | 127.1 | 125.1 | 126.3 | 127.5 | 129.3 |
| Balance on Goods | 123.6 | 123.0 | 107.4 | 105.8 | 106.2 | 108.8 | 112.3 | 114.6 | 117.5 |
| Merchandise exports f.o.b. | 702.8 | 746.8 | 770.3 | 797.5 | 824.5 | 847.7 | 872.2 | 897.2 | 928.0 |
| Merchandise imports f.o.b. | 579.2 | 623.8 | 662.9 | 691.8 | 718.3 | 738.9 | 759.9 | 782.6 | 810.5 |
| Balance on Services | 17.9 | 31.5 | 4.3 | 0.9 | -0.5 | -3.4 | -6.5 | -8.4 | -10.4 |
| Exports of services, total | 422.8 | 441.2 | 442.6 | 454.6 | 471.6 | 488.8 | 506.5 | 527.5 | 549.3 |
| Imports of services, total | 404.9 | 409.7 | 438.3 | 453.8 | 472.1 | 492.2 | 513.0 | 535.9 | 559.7 |
| Balance on Income | 24.8 | 18.7 | 16.5 | 22.9 | 21.4 | 19.7 | 20.5 | 21.3 | 22.2 |
| **Capital and Financial Account** | 106.9 | 157.4 | 70.4 | 129.8 | 127.4 | 125.4 | 126.5 | 127.8 | 129.6 |
| Capital transfer, net | 0.2 | 1.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Financial Account | 106.7 | 156.4 | 70.3 | 129.7 | 127.3 | 125.2 | 126.4 | 127.6 | 129.5 |
| Direct investment, net | 68.5 | 35.6 | -31.4 | 23.2 | 26.1 | 26.2 | 28.2 | 15.7 | 29.8 |
| Abroad | 120.3 | 48.6 | 3.0 | 58.8 | 63.0 | 64.5 | 68.1 | 57.1 | 72.8 |
| In Denmark | 51.7 | 13.0 | 34.5 | 35.6 | 36.9 | 38.3 | 39.8 | 41.4 | 43.0 |
| Portfolio investment, net | -76.7 | 4.6 | 315.3 | -42.0 | -27.3 | 16.4 | 22.6 | 32.1 | 23.0 |
| Assets | 28.4 | 82.8 | 115.6 | 103.2 | 106.1 | 112.6 | 127.0 | 136.6 | 133.1 |
| Liabilities | 105.1 | 78.3 | -199.7 | 145.2 | 133.4 | 96.2 | 104.5 | 104.5 | 110.1 |
| Financial derivatives, net | -25.1 | -12.7 | -20.3 | -21.0 | -21.7 | -22.6 | -23.5 | -24.4 | -25.4 |
| Other investment, net | 131.1 | 111.7 | -186.3 | 169.5 | 150.2 | 105.2 | 99.1 | 104.2 | 102.0 |
| Reserve assets | 8.9 | 17.2 | -6.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Net errors and omissions** | 59.4 | 15.9 | 57.8 | -0.2 | -0.2 | -0.2 | -0.2 | -0.3 | -0.3 |
| | | | | | *Percent of GDP* | | | | |
| **Current Account** | 7.9 | 8.0 | 5.8 | 5.6 | 5.3 | 5.1 | 4.9 | 4.8 | 4.7 |
| Balance on Goods | 5.9 | 5.6 | 4.8 | 4.6 | 4.5 | 4.4 | 4.4 | 4.3 | 4.2 |
| Merchandise exports f.o.b. | 33.5 | 34.3 | 34.7 | 34.8 | 34.7 | 34.4 | 34.0 | 33.6 | 33.5 |
| Merchandise imports f.o.b. | 27.6 | 28.6 | 29.9 | 30.2 | 30.2 | 29.9 | 29.6 | 29.3 | 29.2 |
| Balance on Services | 0.9 | 1.4 | 0.2 | 0.0 | 0.0 | -0.1 | -0.3 | -0.3 | -0.4 |
| Exports of services, total | 20.1 | 20.3 | 20.0 | 19.8 | 19.8 | 19.8 | 19.7 | 19.8 | 19.8 |
| Imports of services, total | 19.3 | 18.8 | 19.8 | 19.8 | 19.9 | 19.9 | 20.0 | 20.1 | 20.2 |
| Balance on Income | 1.2 | 0.9 | 0.7 | 1.0 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |
| **Capital and Financial Account** | 5.1 | 7.2 | 3.2 | 5.7 | 5.4 | 5.1 | 4.9 | 4.8 | 4.7 |
| Capital transfer, net | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Financial Account | 5.1 | 7.2 | 3.2 | 5.7 | 5.4 | 5.1 | 4.9 | 4.8 | 4.7 |
| Direct investment, net | 3.3 | 1.6 | -1.4 | 1.0 | 1.1 | 1.1 | 1.1 | 0.6 | 1.1 |
| Abroad | 5.7 | 2.2 | 0.1 | 2.6 | 2.7 | 2.6 | 2.7 | 2.1 | 2.6 |
| In Denmark | 2.5 | 0.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| Portfolio investment, net | -3.7 | 0.2 | 14.2 | -1.8 | -1.1 | 0.7 | 0.9 | 1.2 | 0.8 |
| Assets | 1.4 | 3.8 | 5.2 | 4.5 | 4.5 | 4.6 | 5.0 | 5.1 | 4.8 |
| Liabilities | 5.0 | 3.6 | -9.0 | 6.3 | 5.6 | 3.9 | 4.1 | 3.9 | 4.0 |
| Financial derivatives, net | -1.2 | -0.6 | -0.9 | -0.9 | -0.9 | -0.9 | -0.9 | -0.9 | -0.9 |
| Other investment, net | 6.2 | 5.1 | -8.4 | 7.4 | 6.3 | 4.3 | 3.9 | 3.9 | 3.7 |
| Reserve assets | 0.4 | 0.8 | -0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Net errors and omissions** | 2.8 | 0.7 | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Memorandum items:* | | | | | | | | | |
| Net oil and oil-related exports | -0.2 | -0.2 | ... | ... | ... | ... | ... | ... | ... |
| Net sea transportation receipts | 1.5 | 2.2 | ... | ... | ... | ... | ... | ... | ... |
| Current Account net of items above | 6.6 | 6.0 | ... | ... | ... | ... | ... | ... | ... |
| Gross External Debt | 154.8 | 150.3 | ... | ... | ... | ... | ... | ... | ... |
| Gross Domestic Product | 2,100 | 2,178 | 2,218 | 2,294 | 2,377 | 2,468 | 2,565 | 2,667 | 2,771 |

Sources: National Bank of Denmark, Statistics Denmark, and Fund staff calculations.

## Table 3. Denmark: International Investment Position, 2011–18

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| | | | | ***Billions of DKK*** | | | | |
| **Assets** | 4,771 | 5,133 | 5,328 | 5,832 | 5,956 | 6,528 | 6,896 | 6,640 |
| Direct investment | 1,345 | 1,388 | 1,412 | 1,516 | 1,627 | 1,815 | 1,825 | 1,843 |
| Equity | 863 | 945 | 982 | 1,089 | 1,184 | 1,345 | 1,368 | 1,400 |
| Debt instruments | 482 | 443 | 430 | 427 | 443 | 470 | 456 | 443 |
| Portfolio investment | 1,786 | 2,086 | 2,206 | 2,643 | 2,704 | 2,935 | 3,097 | 3,117 |
| Equity | 625 | 749 | 920 | 1,061 | 1,180 | 1,315 | 1,521 | 1,530 |
| Investment fund shares | 116 | 166 | 197 | 264 | 271 | 317 | 353 | 353 |
| Debt securities | 1,045 | 1,171 | 1,088 | 1,319 | 1,253 | 1,303 | 1,223 | 1,234 |
| Fin. deriv. (other than reserves) | 120 | 131 | 69 | 100 | 68 | 40 | 60 | 27 |
| Other investment | 1,028 | 1,016 | 1,161 | 1,113 | 1,114 | 1,290 | 1,450 | 1,192 |
| Reserve assets | 492 | 512 | 480 | 460 | 442 | 449 | 465 | 461 |
| **Liabilities** | 4,258 | 4,448 | 4,608 | 4,974 | 5,275 | 5,382 | 5,689 | 5,238 |
| Direct investment | 811 | 826 | 806 | 987 | 1,015 | 1,176 | 1,180 | 1,190 |
| Equity | 508 | 518 | 513 | 655 | 663 | 813 | 838 | 865 |
| Debt instruments | 302 | 308 | 292 | 332 | 352 | 363 | 341 | 325 |
| Portfolio investment | 1,920 | 2,120 | 2,297 | 2,649 | 3,072 | 2,985 | 3,248 | 2,836 |
| Equity | 427 | 575 | 739 | 958 | 1,314 | 1,133 | 1,355 | 1,121 |
| Investment fund shares | 25 | 32 | 54 | 55 | 64 | 83 | 107 | 77 |
| Debt securities | 1,469 | 1,513 | 1,503 | 1,636 | 1,695 | 1,769 | 1,785 | 1,638 |
| Financial derivatives | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other investment | 1,527 | 1,501 | 1,506 | 1,338 | 1,188 | 1,221 | 1,261 | 1,212 |
| **Net Investment Position** | 513 | 686 | 720 | 858 | 680 | 1,146 | 1,208 | 1,403 |
| Direct Investment | 534 | 562 | 607 | 529 | 612 | 639 | 645 | 653 |
| Portfolio Investment | -134 | -34 | -91 | -5 | -368 | -50 | -150 | 282 |
| Other Investment | -499 | -485 | -345 | -225 | -73 | 68 | 189 | -20 |
| | | | | ***Percent of GDP*** | | | | |
| **Assets** | 258.3 | 270.9 | 276.1 | 294.4 | 292.5 | 310.8 | 316.6 | 299.3 |
| Direct investment | 72.8 | 73.2 | 73.2 | 76.5 | 79.9 | 86.4 | 83.8 | 83.1 |
| Equity | 46.7 | 49.9 | 50.9 | 55.0 | 58.1 | 64.0 | 62.8 | 63.1 |
| Debt instruments | 26.1 | 23.4 | 22.3 | 21.5 | 21.8 | 22.4 | 21.0 | 20.0 |
| Portfolio investment | 96.7 | 110.1 | 114.3 | 133.4 | 132.8 | 139.8 | 142.2 | 140.5 |
| Equity | 33.8 | 39.6 | 47.7 | 53.6 | 57.9 | 62.6 | 69.8 | 69.0 |
| Investment fund shares | 6.3 | 8.8 | 10.2 | 13.3 | 13.3 | 15.1 | 16.2 | 15.9 |
| Debt securities | 56.6 | 61.8 | 56.4 | 66.6 | 61.6 | 62.0 | 56.2 | 55.6 |
| Fin. deriv. (other than reserves) | 6.5 | 6.9 | 3.6 | 5.0 | 3.3 | 1.9 | 2.7 | 1.2 |
| Other investment | 55.7 | 53.6 | 60.2 | 56.2 | 54.7 | 61.4 | 66.6 | 53.8 |
| Reserve assets | 26.6 | 27.0 | 24.9 | 23.2 | 21.7 | 21.4 | 21.3 | 20.8 |
| **Liabilities** | 230.6 | 234.7 | 238.8 | 251.0 | 259.1 | 256.3 | 261.2 | 236.1 |
| Direct investment | 43.9 | 43.6 | 41.7 | 49.8 | 49.9 | 56.0 | 54.2 | 53.6 |
| Equity | 27.5 | 27.4 | 26.6 | 33.1 | 32.6 | 38.7 | 38.5 | 39.0 |
| Debt instruments | 16.4 | 16.3 | 15.2 | 16.7 | 17.3 | 17.3 | 15.7 | 14.6 |
| Portfolio investment | 104.0 | 111.9 | 119.0 | 133.7 | 150.9 | 142.1 | 149.1 | 127.8 |
| Equity | 23.1 | 30.3 | 38.3 | 48.4 | 64.5 | 53.9 | 62.2 | 50.5 |
| Investment fund shares | 1.4 | 1.7 | 2.8 | 2.8 | 3.1 | 4.0 | 4.9 | 3.5 |
| Debt securities | 79.5 | 79.9 | 77.9 | 82.6 | 83.2 | 84.2 | 82.0 | 73.9 |
| Financial derivatives | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other investment | 82.7 | 79.2 | 78.1 | 67.5 | 58.3 | 58.2 | 57.9 | 54.7 |
| **Net Investment Position** | 27.8 | 36.2 | 37.3 | 43.3 | 33.4 | 54.6 | 55.5 | 63.2 |
| Direct Investment | 28.9 | 29.6 | 31.4 | 26.7 | 30.0 | 30.4 | 29.6 | 29.4 |
| Portfolio Investment | -7.3 | -1.8 | -4.7 | -0.3 | -18.1 | -2.4 | -6.9 | 12.7 |
| Other Investment | -27.0 | -25.6 | -17.9 | -11.3 | -3.6 | 3.3 | 8.7 | -0.9 |

Sources: Haver Analytics, Statistics Denmark and Fund staff calculations.

## Table 4. Denmark: GFSM 2001 Statement of General Government Operations, 2016–24

(Billons of DKK)

| | 2016 | 2017 | 2018 | 2019 proj. | 2020 proj. | 2021 proj. | 2022 proj. | 2023 proj. | 2024 proj. |
|---|---|---|---|---|---|---|---|---|---|
| **General Government** | | | | | | | | | |
| Total Revenues | 1104.5 | 1145.8 | 1151.8 | 1186.6 | 1217.9 | 1259.0 | 1303.6 | 1355.0 | 1411.1 |
| Personal Income Taxes | 504.7 | 521.6 | 539.6 | 550.5 | 563.4 | 582.4 | 602.9 | 626.6 | 651.3 |
| Pension Return Taxes | 34.0 | 32.3 | 12.5 | 16.1 | 16.6 | 17.3 | 15.4 | 16.0 | 19.4 |
| Company Taxes | 60.4 | 71.9 | 65.2 | 67.4 | 69.9 | 72.5 | 75.4 | 78.4 | 81.5 |
| Taxes on Goods and Services | 300.8 | 308.8 | 316.8 | 327.6 | 339.5 | 350.4 | 359.2 | 373.3 | 388.0 |
| Social Contributions | 19.5 | 19.1 | 19.5 | 20.1 | 20.9 | 21.7 | 22.5 | 23.4 | 24.3 |
| Interest and Dividends | 17.3 | 19.3 | 26.5 | 27.4 | 28.4 | 32.1 | 33.4 | 37.3 | 38.8 |
| Other revenues | 167.9 | 172.9 | 171.7 | 177.4 | 179.3 | 182.7 | 194.9 | 199.9 | 207.8 |
| Total Expenditures | 1106.1 | 1114.3 | 1140.5 | 1183.1 | 1217.7 | 1262.2 | 1307.9 | 1357.2 | 1408.5 |
| Expense | 1029.1 | 1043.3 | 1067.1 | 1105.1 | 1136.8 | 1178.3 | 1218.1 | 1263.9 | 1311.6 |
| Public Consumption | 513.6 | 524.1 | 534.1 | 549.9 | 566.3 | 583.6 | 602.4 | 621.2 | 640.9 |
| Public Subsidies | 38.2 | 38.7 | 38.4 | 43.6 | 45.2 | 46.9 | 46.2 | 45.3 | 47.1 |
| Interest Expenditures | 28.1 | 23.3 | 24.2 | 22.9 | 19.0 | 24.7 | 25.7 | 29.3 | 33.3 |
| Social Benefits | 385.4 | 390.4 | 393.7 | 412.9 | 425.5 | 439.2 | 456.7 | 477.3 | 496.1 |
| Other Expenditures | 63.9 | 66.7 | 76.8 | 75.7 | 80.8 | 83.9 | 87.2 | 90.7 | 94.2 |
| Net Acquisition of Nonfinancial Assets | 76.9 | 71.0 | 73.4 | 78.0 | 80.8 | 83.9 | 89.8 | 93.3 | 97.0 |
| Gross operating balance | 75.4 | 102.5 | 84.7 | 81.6 | 81.1 | 80.6 | 85.5 | 91.1 | 99.5 |
| Net lending/borrowing | -1.5 | 31.6 | 11.3 | 3.6 | 0.3 | -3.3 | -4.3 | -2.3 | 2.5 |
| Net financial transactions | -1.5 | 31.6 | 11.3 | .. | .. | .. | .. | .. | .. |
| Net acquisition of financial assets | -26.6 | 30.1 | -2.6 | .. | .. | .. | .. | .. | .. |
| Currency and deposits | -41.5 | 24.1 | -22.3 | .. | .. | .. | .. | .. | .. |
| Securities other than shares | -5.2 | -0.4 | 24.8 | .. | .. | .. | .. | .. | .. |
| Loans | 0.9 | -0.9 | 16.4 | .. | .. | .. | .. | .. | .. |
| Shares and other equity | -6.3 | 5.6 | 3.9 | .. | .. | .. | .. | .. | .. |
| Insurance technical reserves | -0.1 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Financial derivatives and employee stock options | -2.3 | -2.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Other financial assets | 27.9 | 3.7 | -25.3 | .. | .. | .. | .. | .. | .. |
| Net incurrence of liabilities | -25.1 | -1.5 | -13.9 | .. | .. | .. | .. | .. | .. |
| Currency and deposits | -0.1 | -4.1 | 0.0 | .. | .. | .. | .. | .. | .. |
| Securities other than shares | -25.8 | 0.3 | -24.1 | .. | .. | .. | .. | .. | .. |
| Loans | 2.5 | -7.8 | 6.8 | .. | .. | .. | .. | .. | .. |
| Shares and Other Equity | 0.0 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Insurance Technical Reserves | 0.0 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Other liabilities | -1.7 | 10.2 | 3.5 | .. | .. | .. | .. | .. | .. |

Sources: Statistics Denmark and Fund staff calculations.

## Table 5. Denmark: GFSM 2001 Statement of General Government Operations, 2016–24
(Percent of GDP)

| | 2016 | 2017 | 2018 | 2019 proj. | 2020 proj. | 2021 proj. | 2022 proj. | 2023 proj. | 2024 proj. |
|---|---|---|---|---|---|---|---|---|---|
| **General Government** | | | | | | | | | |
| Total Revenues | 52.6 | 52.6 | 51.9 | 51.7 | 51.2 | 51.0 | 50.8 | 50.8 | 50.9 |
| Personal Income Taxes | 24.0 | 23.9 | 24.3 | 24.0 | 23.7 | 23.6 | 23.5 | 23.5 | 23.5 |
| Pension Return Taxes | 1.6 | 1.5 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.7 |
| Company Taxes | 2.9 | 3.3 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| Taxes on Goods and Services | 14.3 | 14.2 | 14.3 | 14.3 | 14.3 | 14.2 | 14.0 | 14.0 | 14.0 |
| Social Contributions | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Interest and Dividends | 0.8 | 0.9 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 |
| Other revenues | 8.0 | 7.9 | 7.7 | 7.7 | 7.5 | 7.4 | 7.6 | 7.5 | 7.5 |
| Total Expenditures | 52.7 | 51.2 | 51.4 | 51.6 | 51.2 | 51.2 | 51.0 | 50.9 | 50.8 |
| Expense | 49.0 | 47.9 | 48.1 | 48.2 | 47.8 | 47.8 | 47.5 | 47.4 | 47.3 |
| Public Consumption | 24.5 | 24.1 | 24.1 | 24.0 | 23.8 | 23.7 | 23.5 | 23.3 | 23.1 |
| Public Subsidies | 1.8 | 1.8 | 1.7 | 1.9 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 |
| Interest Expenditures | 1.3 | 1.1 | 1.1 | 1.0 | 0.8 | 1.0 | 1.0 | 1.1 | 1.2 |
| Social Benefits | 18.3 | 17.9 | 17.7 | 18.0 | 17.9 | 17.8 | 17.8 | 17.9 | 17.9 |
| Other Expenditures | 3.0 | 3.1 | 3.5 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| Net Acquisition of Nonfinancial Assets | 3.7 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.5 | 3.5 | 3.5 |
| Gross operating balance | 3.6 | 4.7 | 3.8 | 3.6 | 3.4 | 3.3 | 3.3 | 3.4 | 3.6 |
| Net lending/borrowing | -0.1 | 1.4 | 0.5 | 0.2 | 0.0 | -0.1 | -0.2 | -0.1 | 0.1 |
| Net financial transactions | -0.1 | 1.4 | 0.5 | .. | .. | .. | .. | .. | .. |
| Net acquisition of financial assets | -1.3 | 1.4 | -0.1 | .. | .. | .. | .. | .. | .. |
| Currency and deposits | -2.0 | 1.1 | -1.0 | .. | .. | .. | .. | .. | .. |
| Securities other than shares | -0.2 | 0.0 | 1.1 | .. | .. | .. | .. | .. | .. |
| Loans | 0.0 | 0.0 | 0.7 | .. | .. | .. | .. | .. | .. |
| Shares and other equity | -0.3 | 0.3 | 0.2 | .. | .. | .. | .. | .. | .. |
| Insurance technical reserves | 0.0 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Financial derivatives and employee stock options | -0.1 | -0.1 | 0.0 | .. | .. | .. | .. | .. | .. |
| Other financial assets | 1.3 | 0.2 | -1.1 | .. | .. | .. | .. | .. | .. |
| Net incurrence of liabilities | -1.2 | -0.1 | -0.6 | .. | .. | .. | .. | .. | .. |
| Currency and deposits | 0.0 | -0.2 | 0.0 | .. | .. | .. | .. | .. | .. |
| Securities other than shares | -1.2 | 0.0 | -1.1 | .. | .. | .. | .. | .. | .. |
| Loans | 0.1 | -0.4 | 0.3 | .. | .. | .. | .. | .. | .. |
| Shares and Other Equity | 0.0 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Insurance Technical Reserves | 0.0 | 0.0 | 0.0 | .. | .. | .. | .. | .. | .. |
| Other liabilities | -0.1 | 0.5 | 0.2 | .. | .. | .. | .. | .. | .. |
| **Memorandum items** | | | | | | | | | |
| Primary Balance 1/ | 0.4 | 1.6 | 0.4 | 0.0 | -0.4 | -0.4 | -0.5 | -0.4 | -0.1 |
| Structural Balance 2/ | -0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 |
| One-off Measures 2/ 3/ | -0.2 | 0.4 | -0.2 | -0.5 | -0.7 | -0.9 | -0.8 | -0.6 | -0.2 |
| Cyclically Adjusted Balance 2/ | -0.4 | 0.6 | -0.1 | -0.5 | -0.8 | -0.9 | -0.9 | -0.6 | -0.3 |
| Gross Debt | 37.2 | 35.5 | 34.3 | 33.0 | 31.9 | 33.9 | 35.9 | 37.6 | 38.2 |
| Gross Domestic Product (Bln. Kroner) | 2,100 | 2,178 | 2,218 | 2,294 | 2,377 | 2,468 | 2,565 | 2,667 | 2,771 |

Sources: Statistics Denmark and Fund staff calculations.

1/ Overall balance net of interest.

2/ In percent of potential GDP.

3/ One-off items relate to vehicle registration tax, pension yield tax, North Sea oil and gas revenue, net interest payments, and other special items.

## Table 6. Denmark: Public Sector Balance Sheet, 2011–17

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|
| | | | | *Billions of DKK* | | | |
| **Assets** | 1,997 | 1,956 | 1,959 | 2,034 | 1,977 | 2,032 | 2,118 |
| Financial assets | 1,089 | 1,024 | 1,015 | 1,074 | 993 | 1,009 | 1,053 |
| Monetary gold and SDR | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Currency and deposits | 283 | 220 | 218 | 272 | 228 | 187 | 211 |
| Securities other than shares | 135 | 116 | 102 | 67 | 68 | 63 | 61 |
| Loans | 154 | 164 | 176 | 180 | 184 | 185 | 183 |
| Shares and other equity | 412 | 415 | 416 | 425 | 420 | 466 | 487 |
| Insurance technical reserves | 1 | 1 | 2 | 1 | 2 | 1 | 1 |
| Financial derivatives and employee stock options | 12 | 11 | 6 | 5 | 5 | 2 | 1 |
| Other financial assets | 92 | 97 | 95 | 125 | 87 | 104 | 108 |
| Capital stock net of depreciation | 907 | 932 | 944 | 959 | 984 | 1,023 | 1,065 |
| **Liabilities** | 1,110 | 1,149 | 1,095 | 1,172 | 1,088 | 1,080 | 1,064 |
| Financial liabilities | 1,110 | 1,149 | 1,095 | 1,172 | 1,088 | 1,080 | 1,064 |
| Monetary gold and SDR | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Currency and deposits | 15 | 15 | 15 | 23 | 24 | 24 | 20 |
| Securities other than shares | 805 | 837 | 764 | 831 | 737 | 728 | 713 |
| Loans | 149 | 154 | 163 | 165 | 170 | 172 | 164 |
| Other financial assets | 141 | 143 | 152 | 153 | 157 | 156 | 168 |
| **Net worth** | 887 | 807 | 864 | 862 | 889 | 952 | 1,053 |
| **Financial net worth** | -21 | -125 | -80 | -98 | -95 | -71 | -12 |
| | | | | *Percent of GDP* | | | |
| **Assets** | 108.1 | 103.2 | 101.5 | 102.6 | 97.1 | 96.7 | 97.2 |
| Financial assets | 59.0 | 54.0 | 52.6 | 54.2 | 48.8 | 48.0 | 48.3 |
| Monetary gold and SDR | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Currency and deposits | 15.3 | 11.6 | 11.3 | 13.7 | 11.2 | 8.9 | 9.7 |
| Securities other than shares | 7.3 | 6.1 | 5.3 | 3.4 | 3.4 | 3.0 | 2.8 |
| Loans | 8.3 | 8.7 | 9.1 | 9.1 | 9.0 | 8.8 | 8.4 |
| Shares and other equity | 22.3 | 21.9 | 21.5 | 21.4 | 20.6 | 22.2 | 22.4 |
| Insurance technical reserves | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Financial derivatives and employee stock options | 0.7 | 0.6 | 0.3 | 0.2 | 0.2 | 0.1 | 0.0 |
| Other financial assets | 5.0 | 5.1 | 4.9 | 6.3 | 4.3 | 5.0 | 4.9 |
| Capital stock net of depreciation | 49.1 | 49.2 | 48.9 | 48.4 | 48.3 | 48.7 | 48.9 |
| **Liabilities** | 60.1 | 60.6 | 56.7 | 59.1 | 53.4 | 51.4 | 48.9 |
| Financial liabilities | 60.1 | 60.6 | 56.7 | 59.1 | 53.4 | 51.4 | 48.9 |
| Monetary gold and SDR | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Currency and deposits | 0.8 | 0.8 | 0.8 | 1.2 | 1.2 | 1.1 | 0.9 |
| Securities other than shares | 43.6 | 44.2 | 39.6 | 41.9 | 36.2 | 34.7 | 32.7 |
| Loans | 8.1 | 8.1 | 8.5 | 8.3 | 8.3 | 8.2 | 7.5 |
| Other financial assets | 7.6 | 7.5 | 7.9 | 7.7 | 7.7 | 7.4 | 7.7 |
| **Net worth** | 48.0 | 42.6 | 44.8 | 43.5 | 43.6 | 45.3 | 48.4 |
| **Financial net worth** | -1.1 | -6.6 | -4.1 | -4.9 | -4.7 | -3.4 | -0.5 |
| *Memorandum items:* | | | | | | | |
| Nominal GDP (in billions of DKK) | 1,847 | 1,895 | 1,930 | 1,981 | 2,036 | 2,100 | 2,178 |

Sources: Eurostat, Statistics Denmark and Fund staff calculations.

## Table 7. Denmark: Financial System Indicators, 2011–18 1/

(Percent)

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| **Deposit-taking institutions: Total** | | | | | | | | |
| Regulatory capital to risk-weighted assets | 20.1 | 22.1 | 22.3 | 21.0 | 21.8 | 23.2 | 23.8 | 23.3 |
| Regulatory Tier I capital to risk-weighted assets | 17.2 | 19.2 | 19.5 | 18.5 | 19.5 | 20.7 | 21.4 | 21.5 |
| Core / Common Equity Tier 1 capital to risk-weighted assets | 14.4 | 16.3 | 16.7 | 17.3 | 17.8 | 18.3 | 19.3 | 19.0 |
| Nonperforming loans net of provisions to capital | 22.0 | 22.9 | 22.4 | 22.0 | 17.8 | 14.2 | 11.0 | |
| Nonperforming loans net of provisions to capital (new IFRS9) | | | | | | | 14.4 | 20.7 |
| Bank provisions to Nonperforming loans | 50.2 | 50.8 | 51.0 | 50.3 | 50.5 | 51.0 | 54.3 | |
| Bank provisions to Nonperforming loans (new IFRS9) | | | | | | | 46.9 | 36.2 |
| Nonperforming loans to total gross loans | 7.9 | 8.3 | 8.7 | 8.2 | 6.9 | 5.3 | 4.3 | |
| Nonperforming loans to total gross loans (new IFRS9) | | | | | | | 4.9 | 4.7 |
| Sectoral distribution of loans to total loans, of which | | | | | | | | |
| Nonfinancial corporation | 43.5 | 39.1 | 37.0 | 37.3 | 39.5 | 39.4 | 41.2 | 41.6 |
| Households (including individual firms) | 32.5 | 33.1 | 32.0 | 32.5 | 32.8 | 34.2 | 33.4 | 31.0 |
| ROA (aggregated data on a parent-company basis) 2/ | 0.1 | 0.2 | 0.4 | 0.4 | 0.8 | 1.0 | 1.2 | 0.9 |
| ROA (main groups on a consolidated basis) 3/ | 0.1 | 0.2 | 0.4 | 0.3 | 0.5 | 0.7 | 0.7 | 0.6 |
| ROE (aggregated data on a parent-company basis) 2/ | 1.3 | 2.7 | 5.7 | 5.6 | 9.1 | 14.1 | 14.2 | 10.2 |
| ROE (main groups on a consolidated basis) 3/ | 2.1 | 3.4 | 6.9 | 6.4 | 10.2 | 13.2 | 14.0 | 10.2 |
| Interest margin to gross income | 73.4 | 67.0 | 64.2 | 60.0 | 54.4 | 50.8 | 46.9 | 50.0 |
| Noninterest expenses to gross income | 43.8 | 44.9 | 47.2 | 55.5 | 55.2 | 49.4 | 46.7 | 52.5 |
| Liquid assets to total assets | 23.6 | 27.0 | 30.9 | 27.3 | 31.4 | 32.8 | 34.4 | |
| Liquid assets to total assets (new IFRS9) | | | | | | | 22.2 | 19.9 |
| Liquid assets to short-term liabilities | 37.3 | 45.4 | 49.8 | 42.0 | 50.3 | 51.9 | 54.8 | |
| Liquid assets to short-term liabilities (new IFRS9) | | | | | | | 28.5 | 24.7 |
| Foreign currency position | 2.8 | 1.4 | 1.2 | 1.7 | 1.5 | 1.5 | 1.6 | 1.4 |

Source: Danish Financial Supervisory Authority.

1/ These may be grouped in different peer groups based on control, business lines, or group structure.

2/ All credit institutions' aggregated data on a parent-company basis.

3/ Consolidated data for the five main banking groups (IFRS).

# Annex I. Tax and Benefit Reform: Reassessing the Equity-Efficiency Tradeoff

*The Danish social welfare model has produced impressive results, supporting high income levels alongside low inequality. However, potential disincentives from high taxes could weigh on labor supply and the state's capacity to finance high levels of spending and social protection. Possible gains from reform in terms of income levels and equity are significant despite Denmark's current sound policies. Reducing participation tax rates through targeted in-work benefits would increase employment rates and support low-income workers. Lower marginal tax rates for median workers and above could substantially increase overall labor supply, overall hours worked and average income per capita compared to current levels.*

**1. The Danish social model has served the country well, having supported high income levels alongside low inequality.** The model is characterized by high taxes and public service provision, a competitive business environment, flexible labor markets and a generous social safety net. While the current tax and benefit system offers enviable levels of social protection, this potentially comes at a cost as high tax rates can dampen labor supply incentives, productivity and growth. The tradeoff between equity and efficiency could be improved through comprehensive tax and benefit reform and produce even stronger outcomes for Denmark's already impressive model.

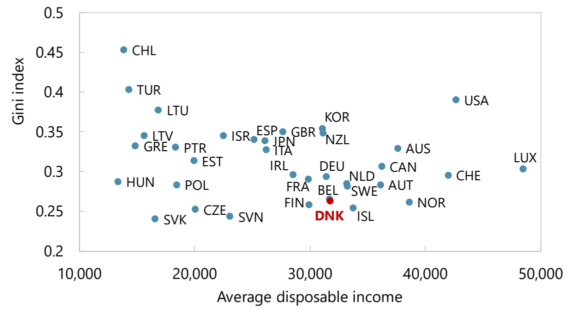
**2. Potential gains from a tax and benefit reform are significant despite Denmark's current sound policies.** Channeling relatively more resources to low-wage workers through a targeted in-work benefit could improve incentives to take up employment. Lower participation tax rates and higher employment rates would boost incomes and lessen the need for low-income transfers. Reducing marginal tax rates for median income earners and above could boost labor supply and increase overall per capita incomes. Crucially, the proposed reform scenarios take into account Denmark's strong preference for equity, which is inferred directly from existing tax rates. Results for revenue neutral reforms suggest employment rates could be increased by up to 3 percentage points, while overall hours worked could increase by up to 3.5 percent and average income per capita by 3 percent compared to current levels.

**3. This microsimulation exercise is based on the Mirrlees framework.** In a seminal contribution, Mirrlees derived the conditions under which a tax reform can achieve the optimal tradeoff between efficiency and equity.[1] The framework provides guidance on how to incorporate social preferences over income inequality, features of the income distribution and responsiveness of the tax base to changes in tax rates to formulate optimal reforms (see Piketty and Saez 2013 for a recent review and introduction). The approach can be readily calibrated to country-specific circumstances to derive recommendations to improve social welfare, while minimizing the distortions induced by high marginal and participation tax rates.

[1] Mirrlees, James A., 1971. "An Exploration in the Theory of Optimum Income Taxation," *Review of Economic Studies*, 38(2), 175–208.

**4. Denmark has achieved an enviable tradeoff between efficiency and equity.** While a few countries boast higher income levels (Text Figure 1), only Norway—an economy with sizeable natural resource wealth—and Iceland have achieved this while maintaining similarly low income inequality (IMF 2016). Substantial public spending on education, health and social protection has ensured Danish workers are highly skilled and relatively well positioned to adapt to a changing world from globalization and automation (Garcia-Escribano and Liu 2017; OECD 2016).

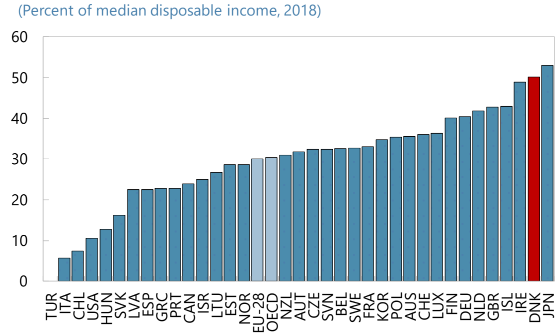
**Text Figure 1. Income Levels and Income Inequality**
(2016 or most recent year)




Sources: OECD:
Notes: Average disposable income is in PPP terms. Gini index is for disposable income after taxes and transfers.

**5. Low inequality is supported by generous transfers to low-income households.** A helpful way to summarize these transfers is to compare the basic income level to which all citizens are entitled to when permanently out of work. The guaranteed minimum income (GMI) includes cash benefits and housing assistance assuming no earnings for either parent.[2] Denmark ranks second among OECD countries, trailing only Japan in terms of average GMI levels. For 2018, illustrative calculations show a representative family could be expected to receive the equivalent of around 50 percent of the median disposable income in the total population (Text Figure 2). Targeting and delivery of these benefits is also highly effective. Denmark has the lowest poverty rate among all OECD countries at 5.5 percent, compared to an average of 12 percent.

**Text Figure 2. Guaranteed Minimum Benefits**
(Percent of median disposable income, 2018)




Sources: OECD Tax-Benefit model; IMF staff calculations.
Note: Average taken over family type. Includes housing benefits.

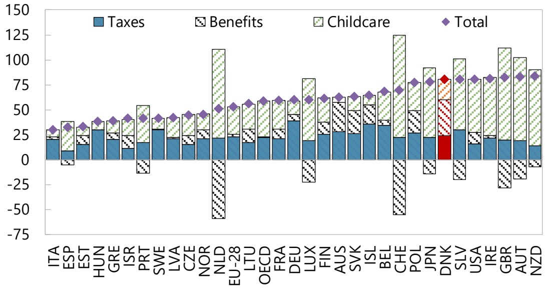
**6. A high GMI ensures strong income redistribution but its financing requires elevated tax rates.** Participation tax rates (PTR) affect labor supply along the extensive margin by determining how much net incomes change upon entering employment. A high PTR means workers: (i) lose a larger portion of low-income transfers; (ii) must pay more income tax; and (iii) must incur childcare costs in the case of parents. Denmark's average PTR for workers taking up a job paying 67 percent of the average wage is not quite as high as in other countries (Browne and Neumann 2017). Childcare costs in particular are low (Text Figure 3a). However, the loss of generous cash benefits significantly reduces the net return of work, likely keeping some individuals out of the labor force. Higher marginal tax rates can reduce labor supply along the intensive margin, since the net return of working an additional hour or moving to a better-paying job might not be worth it for some workers. Denmark has one of the highest top marginal tax rates among advanced economies and it applies to a large

[2] Calculations do not include unemployment benefits as the focus of the analysis is on the decision to join the labor force. Benefit levels are simple averages across the usual family types presented by the OECD, which include single and married, with and without 2 children (OECD 2018).

share of workers (Text Figure 3b). The top personal income tax rate of 56 percent applies to incomes in excess of 1.3 times the average wage, comparable only to Sweden. Many factors influence aggregate hours worked, including wealth and preferences over leisure, but the elevated top rate could partly explain why Denmark's average hours per worker is low by international comparison, around 10 percent below the average among advanced European economies (see also Kleven 2014).

**Text Figure 3a. Participation Tax Rates**

(67 Percent Average Wage, Percent, 2018)

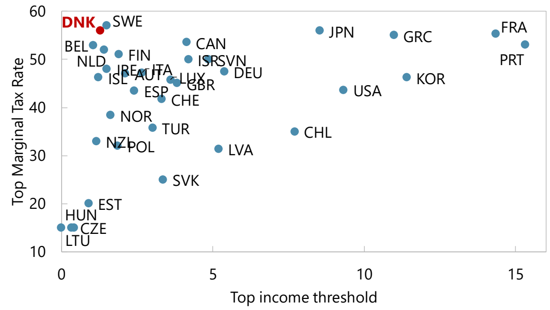



Sources: OECD Tax-Benefit Model

Notes: The participation tax rate is the share of net earnings lost due to higher taxes, lower benefits and childcare costs when a jobless person starts working.

**b. Top Tax Rates and Income Thresholds**

(Percent, 2018)




Sources: OECD Tax Database.

Notes: The top income threshold is expressed as a multiple of the national average wage.

7. **The tradeoff between equity and efficiency in Denmark could be improved.** To assess this tradeoff, we use a microsimulation approach to determine whether a reform of the tax and benefit system could improve labor supply incentives while collecting the same amount of revenues, net of low-income transfers. Crucially, such a reform must preserve a level of redistribution that is consistent with Denmark's social values as reflected in current policies. Specifically, the analysis relies on:

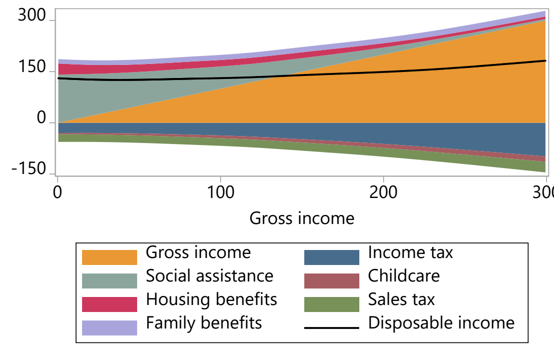
- Household survey data and published education and labor force statistics to determine the distribution of individual and household incomes, employment rates and family structures.
- Parameters of the current tax and benefit system, including the personal income tax, social contributions, social and housing benefits, family allowances and childcare subsidies. These are calculated using the OECD Tax-Benefit model (OECD 2019).
- Parameters capturing the responsiveness of incomes to changes in tax rates, which are calibrated using recent estimates for Denmark.[3]

8. **Transfers in Denmark support disposable incomes at the bottom of the distribution.** For individuals with zero or very low earnings, social assistance, housing, and family benefits ensure

[3] We set the hours (intensive) elasticity at 0.10 and the average participation (extensive) elasticity at 0.20. Bingley (2018) provides a review of recent empirical studies for Denmark.

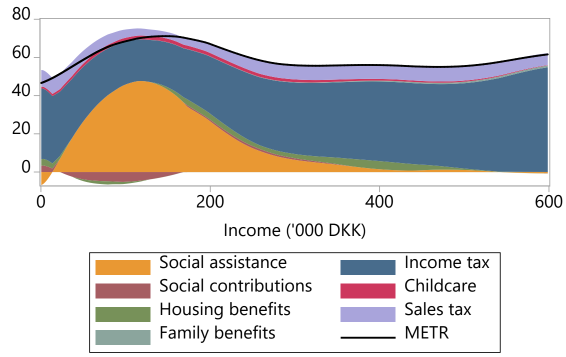
an average disposable income of around 130,000 DKK (net of income and sales tax), equivalent to 49 percent of the median disposable income (Text Figure 4). As gross earnings increase, social assistance and housing benefits are phased-out and income tax liabilities along with childcare costs (due to lower income-tested subsidies) increase. The break-even gross income level is around 135,000 DKK. Importantly, there are no in-work tax credits in Denmark (Text Table 1), so that disposable income levels in and out of work are virtually identical at the low-end of the distribution. Given there are usually fixed costs to entering employment, this puts low-income workers at a disadvantage compared to individuals who remain outside the labor force.

**Text Figure 4. Disposable Income Decomposition**
('000 DKK)




**9. Taxes and benefits can also be examined in terms of their rate of change as earnings increase.** Marginal changes are important to understand since the marginal effective tax rate (METR)—the change in disposable income from small changes in gross income—is central in determining aggregate labor supply in the economy. The different components of disposable income also affect the METR. Despite having a progressive personal income tax, METRs have an inverted U-shape in Denmark (Text Figure 5). The phasing-out of social assistance benefits contributes significantly to lowering the return to additional work until 500,000 DKK. The peak marginal rate of 45 percent means that social assistance is reduced by 0.45 krone for every additional krone earned. Overall METRs go from 46 percent on the first krone earned, peak at 71 percent for gross incomes around 150,000 DKK and then decrease to 55 percent for middle income earners. Beyond the average earner, a higher income tax rate eventually pushes the top METR to 64 percent.[4]

**Text Figure 5. Marginal Effective Tax Rates**
(Percent)

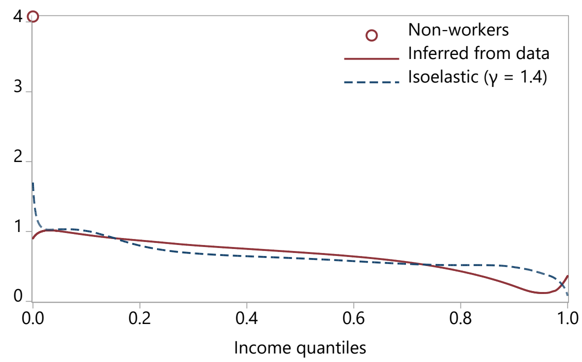



**10. The implicit value society assigns to individuals' marginal consumption can be inferred from the current tax and benefit system.** PTRs and METRs at every income level provide information on how much each additional unit of consumption is valued by policy makers (Bourguignon and Spadaro 2012; Jacobs, Jongen and Zoutman, 2017). For Denmark, these estimated social marginal welfare weights are generally decreasing with income (Text Figure 6), meaning that society values the marginal consumption of the less well-off relatively more than higher incomes. There is a stark contrast however between the welfare weights assigned to

[4] The METR includes consumption taxes. We use the ratio of indirect tax revenues to GDP, which was 20 percent in 2018.

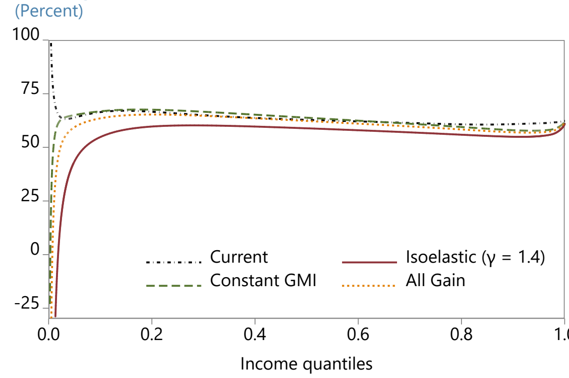
individuals outside the labor force and to low-income workers. The absence of in-work benefits in particular means that the financial return to joining the labor force for those with low earnings potential is small. This translates into high participation tax rates and correspondingly low implied social welfare weights. At the other end of the distribution, social welfare weights are rising for those near the very top of the income distribution. This implies that an increase in the consumption of these very high-income individuals is valued more highly than those with lower incomes. The reform proposals detailed below seek to address these apparent inconsistencies in estimated social welfare weights. An *isoelastic* social welfare function can provide a useful benchmark. We fit such a function to the data and find an estimated Constant Relative Inequality Aversion (CRIA) parameter of 1.4. This means society values the additional consumption of someone at the 10$^{th}$ percentile of the income distribution 8.3 times more than one at the 90$^{th}$ percentile.[5]

**Text Figure 6. Social Marginal Welfare Weights**
(Index)




**11. Reducing participation tax rates could improve the equity-efficiency tradeoff by increasing incentives to work.** In the reform scenarios considered, the benefits to low-income workers would be substantially increased. The current system entails a small penalty of approximately 2 percent of median income from entering employment (Text Table I.1). This is the result mainly of having to pay for some childcare costs and from lower means-tested housing benefits. In contrast, a comprehensive tax and benefit reform would introduce an in-work benefit that could reach the equivalent of 10 percent of the median income. This significantly improves incentives to take up work through a reduction in PTRs (Text Figure 7). PTRs could also be reduced through lowering welfare benefits for individuals outside the labor force. In the *Isoelastic* reform scenario, the GMI level would decrease by 10 percent.[6] The in-work benefit should be well targeted and phased out at a steep rate. This means that the METR for the bottom percentile could reach up to 80 percent (Text Table 1). This higher

**Text Figure 7. Participation Tax Rates**
(Percent)




[5] A CRIA parameter of 1.4 means society values the additional consumption of two individuals according to their relative income levels as $\left(\frac{y_{p10}}{y_{p90}}\right)^{-\gamma} = \left(\frac{665{,}000}{147{,}000}\right)^{1.4} = 8.3$.

[6] This can be achieved for example by indexing welfare benefits to consumer prices to maintain purchasing power instead of nominal wages as is currently the case. Under baseline projections, such indexing would achieve the targeted GMI level after 10 years.

phase-out rate ensures that the in-work benefit for low-wage earners can be maximized while still being targeted to those that are most in need to keep fiscal costs in check.

**Text Table 1. Tax and Benefit Parameters: Current and Proposed Reforms**

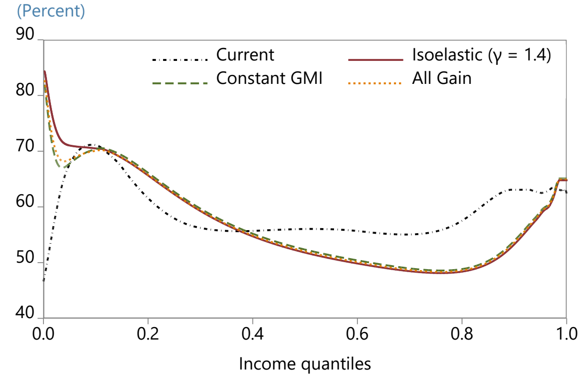
| | Current | Isoelastic | Const GMI | All gain |
|---|---|---|---|---|
| Guaranteed Minimum Income | 124,811 | 112,330 | 124,811 | 124,811 |
| (percent median income) | 49 | 43 | 50 | 48 |
| In-work tax credit | -5,805 | 27,193 | 5,166 | 11,153 |
| (percent median income) | -2 | 10 | 2 | 4 |
| Marginal tax rate (1st percentile) | 51 | 80 | 76 | 77 |
| Marginal tax rate (median) | 56 | 52 | 52 | 52 |
| Top marginal tax rate | 63 | 65 | 65 | 65 |

Notes: *Current* uses the current tax and benefit system. *Isoelastic* implements the optimal reform using isoelastic social welfare weights with $\gamma = 1.4$. *Const GMI* holds the GMI level constant, but otherwise optimizes using the same weights as in *Isoelastic*. *All gain* varies net revenues so that everyone benefits from the optimal reform, holding GMI level constant.

**12. Optimal tax and benefit reforms could reduce METRs for median income earners and above to promote labor supply.** The optimal METRs for higher income earners will depend on the social marginal welfare weights assigned to them. However, there appears to be scope to reduce tax rates across a wide range of assumptions. In all three reform scenarios considered, the METR for the median worker would be reduced from 56 to 52 percent. METRs would bottom out at 48 percent for workers at the 80th percentile of the wage distribution (Text Figure 8). The largest difference in METRs under reform would be for workers at the 85th percentile, with marginal rates declining from 62 to 51 percent. Lower METRs would decrease taxes collected on upper middle-class workers but would also promote labor supply and lead to an increase in taxes collected through behavioral responses. Under the scenarios considered, the top marginal tax rate would increase slightly from the current level.

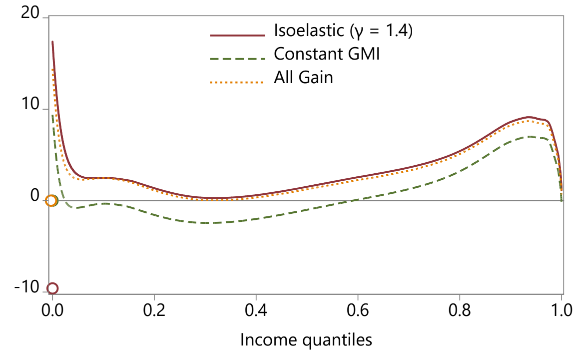
**Text Figure 8. Marginal Effective Tax Rates**

(Percent)




**13. The distribution of gains differs across reform scenarios but can be quite large.** In the *Isoelastic* and *All Gain* reforms, the bottom 30 percent of workers see large net income gains (Text Figure 9). On average, these gains are around 5 to 6 percent of current income but can reach 17 percent for workers at the lower end of the earnings distribution. There would be no net income gains for workers around the median earner, but those at the upper end of the distribution could also benefit substantially, up to 9 percent net income gains for those at the 90$^{th}$ percentile of the distribution. Individuals outside the labor force—around 10 percent of the adult population[7]—would see a decline of 10 percent of net benefits under the *Isoelastic* reform scenario, while they would see no change in benefits under the *All Gain* reform. The other reform scenario that would keep both net revenues and the GMI level constant would yield a different pattern of winners and losers. Workers in the first percentile would gain around 10 percent in net incomes, while workers between the second and 60th percentiles would experience net income losses of 0.8 percent on average. Above the 60th percentile, the average net income gain would be around 4 percent, peaking at 7 percent for workers around the 95th percentile.

**Text Figure 9. Net Income Changes from Reform**
(Percent)




**14. The overall economic gains from reform could be substantial despite being revenue-neutral in two of the cases considered.** In the *Isoelastic* reform, aggregate labor supply increases by 3.5 percent and the employment rate goes from 90 percent to 93 percent (Text Table 2). Total labor income increases by 3 percent, while income inequality rises marginally to 0.21, from 0.20. By design, the reform is revenue-neutral. The alternative scenario that keeps the level of GMI constant sees lower labor supply gains and total incomes increase by 0.8 percent. The reform also has a larger impact on inequality, which increases to 0.22. The *All Gain* scenario relaxes the revenue neutrality requirement for the tax and benefit reform. Ensuring everyone gains from the reform lowers net revenues as a share of total wages, from 29 percent to 28 percent. Total labor income and hours worked both increase by 1.5 percent.[8] The employment rate grows by close to 1 percent, reaching 91 percent of the total adult population.

**Text Table 2. Economic Impact of the Proposed Reforms**

| | Current | Isoelastic | Const GMI | All Gain |
|---|---|---|---|---|
| Net revenues (percent of total wages) | 29.0 | 29.0 | 29.0 | 28.0 |
| Total wages change (percent) | - | 3.0 | 0.8 | 1.5 |
| Total hours change (percent) | - | 3.5 | 0.5 | 1.5 |
| Labor force participation rate | 90.0 | 92.7 | 90.0 | 90.9 |
| Disposable Gini index | 0.203 | 0.212 | 0.216 | 0.212 |

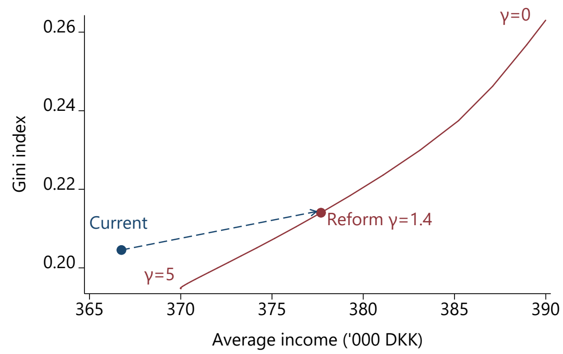
Notes: *Current* uses the current tax and benefit system. *Isoelastic* implements the optimal reform using isoelastic social welfare weights with $\gamma = 1.4$. *Const GMI* holds the GMI level constant and optimizes over the rest of the tax schedule using the same weights as *Isoelastic*. *All Gain* varies net revenues so that everyone benefits from the optimal reform, holding the GMI level constant. Changes in total wages and hours are calculated relative to the current system.

[7] This figure excludes students, retirees and individuals with disabilities.

[8] The effect on revenues and incomes implies a fiscal revenue multiplier of 1.6.

**15. Different combinations of average income levels and inequality are possible given Denmark's revenue requirements and resource constraint.** Current income inequality as measured by the Gini index appears to be close to the lowest desirable levels that can be achieved through tax and benefit reform alone (Text Figure 10). Assuming a degree of inequality aversion of 5—substantially higher than the estimated CRIA parameter of 1.4—the optimal reform would result in an increase in average incomes of 0.9 percent and a slight decrease in the Gini index from 0.203 to 0.195. On the other hand, increasing average income levels could be socially desirable, despite being accompanied by higher inequality. Under the *Isoelastic* reform scenario with $\gamma = 1.4$, the average income would increase from 367,000 DKK to 378,000 DKK and the Gini index would go from 0.203 to 0.212, a change that would still keep Denmark's income inequality below that of Sweden. With even more tolerance for inequality, average income gains could exceed 6 percent, with the average disposable income reaching 390,000 DKK. However, inequality aversion is likely to be substantially higher than zero, so that the resulting increase in inequality could be deemed too costly for Danish society. Overall, it appears that there is scope for Denmark to move closer to the equity-efficiency frontier through tax and benefit reform.

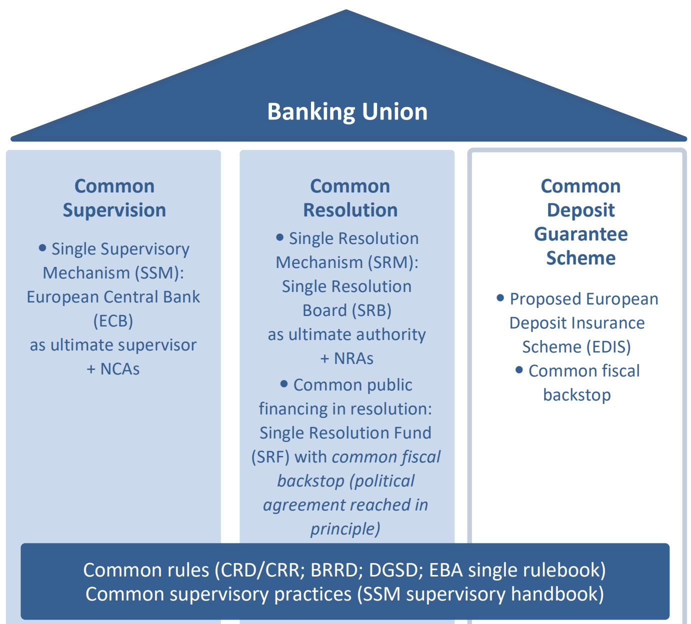
**Text Figure 10. Efficiency-Equity Frontier**
(From tax-benefit reform)



# Annex II. Considerations in Denmark's Banking Union Opt-In Decision

*This annex outlines IMF staff analysis on Denmark's decision on participation in the European Union's (EU) banking union (BU), aiming to identify the most salient considerations given Danish circumstances. A 2015 report on BU opt-in found that participation would be in the Danish interest, but that further clarification on some items and experience was needed before coming to a final decision. Motivated by the changing European political and financial landscape and the greater experience of the BU institutions, the Danish government set up a committee in July 2017 to report back by fall 2019 with a view towards making a final decision.[1] This annex does not undertake a quantitative assessment of the relative costs and benefits, nor make any specific recommendation. To participate in the BU from outside the euro area will ultimately be a political decision, reflecting the authorities' judgment on its consequences for Denmark, including its financial stability and position within the EU.*

### Text Figure 1. European Union's Banking Union Architecture




Notes: As of May 2019. Hollow pillar indicates that it is not yet in place nor agreed. Some of the common rules are codified in EU laws as indicated (Capital Requirements Directive package and Capital Requirements Regulation = CRD/CRR; Bank Recovery and Resolution Directive = BRRD; Deposit Guarantee Scheme Directive = DGSD). NCA = national competent authority; NRA = national resolution authority; EBA = European Banking Authority.

### *Background on the Banking Union and Denmark*

1. **The EU's BU was established to reverse the financial fragmentation and weaken the adverse bank-sovereign risk feedback loops that emerged among euro area (EA) member states in the wake of the 2011–12 sovereign debt crisis.**[2] With an intertwined financial system and common currency, integrated banking system oversight and support are essential to the proper functioning and stability

[1] Notable developments in the interim from spring 2015 to summer 2017 included the United Kingdom's vote to leave the European Union (EU), increased interest in Denmark for financial activities, and the decision by some EU banks outside the banking union to relocate to the banking union. These are leading some EU member states to (re-)examine banking union participation. The DN has come out in favor of Denmark participating in the banking union. It argued that BU participation would enhance the supervision of cross-border banks and ensure the consistency and quality of supervision. See DN (2014) and DN (2017) for further details on their assessment.

[2] For earlier discussions on improving the functioning of the EU's internal market through strengthened supervisory cooperation and harmonization, see the Lamfalussy Report (2001) and the subsequent EU Council (2002) statement on extending the process to all financial services, including banking.

of the unified market in banking and financial services. The BU architecture involves three pillars (Text Figure 1): common supervision, common resolution, and a common deposit guarantee scheme with a common fiscal backstop. With the start of operations of the Single Supervisory Mechanism (SSM) under the aegis of the European Central Bank (ECB) in November 2014 and of the Single Resolution Board (SRB) in January 2015 to oversee the Single Resolution Mechanism (SRM), the BU's common supervision and resolution pillars are now largely in place, while a common deposit insurance scheme has been proposed but not adopted.[3] It is a requirement that EU member states in the monetary union participate in the BU. All other EU member states have the option to join the BU.[4]

2. **An April 2015 Danish government report on BU participation concluded that it would be in the Danish interest, but that there were some areas that required clarification and experience in order to assess more fully** (Denmark Ministry of Industry, Business, and Financial Affairs 2015).[5] The report enumerated several benefits of participation, including: helping to ensure Danish interests were adequately represented in EU decision-making on financial services; access to greater resources for resolution financing; and improved longer-term integration with the Single Market. Financial supervision in Denmark was acknowledged to be well-functioning, but it was viewed at the time that supervision and resolution under the BU would also work well. However, the report noted that it would take some time to see how the BU worked in practice, as many elements were untested, and that greater clarity would also be needed on how the BU would affect supervisory and resolution practices given Danish specificities. The treatment of Denmark's specialized mortgage credit institutions, how Greenland and the Faroe Islands would fit into the new structure (as they are outside the EU but within the Kingdom of Denmark), and the lack of voting representation on the ECB's Governing Council for supervisory decisions (particularly macroprudential decisions) were flagged as issues requiring greater clarity before any decision could be made. The Danish government committee established in July 2017 to re-examine BU participation is expected to deliver its report in fall 2019, taking account of the latest developments.

***Banking Union Opt-In Considerations for Denmark***

3. **Banking union participation would transfer ultimate oversight of bank supervision to the European Central Bank (ECB) and resolution to the Single Resolution Board (SRB; an**

[3] Amongst others, see IMF (2013), IMF (2018a), IMF (2018b), and European Council (2019) for greater details on the banking union, its motivation, structure, and history. There is currently no agreed timeline for common deposit insurance. The European Commission put forward a proposal for the establishment of a European Deposit Insurance Scheme (EDIS) alongside a package of banking sector risk reduction measures in November 2015. However, an agreement has not yet been reached and prospects are uncertain. Moreover, as currently envisaged, there is no common fiscal backstop for EDIS.

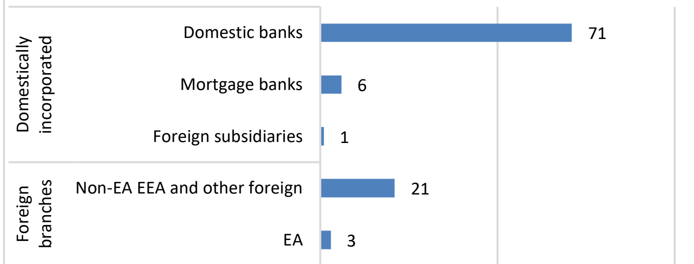
[4] See IMF (2015) for a general discussion of the pros and cons of banking union opt-in prior to euro adoption.

[5] Other non-euro area (EA) EU member states are also currently considering banking union membership, including Bulgaria and Sweden.

**independent European agency), changing the structure of bank supervision and resolution in Denmark.**[6] The ECB in its supervisory role would become direct supervisor of significant credit institutions (SIs; large banks), with supervision of less significant institutions (LSIs) remaining the purview of the Danish Financial Supervisory Authority (DFSA).[7] At the same time, resolution planning and execution for SIs and cross-border banks would be undertaken by the SRB, with LSIs again remaining the responsibility of the Finansiel Stabilitet. The ECB and SRB would have oversight over the functioning of the overall system with a view to ensuring that the supervision and resolution of LSIs was effective. For the ECB as supervisor and the SRB, a key objective is maintaining the effective functioning and integrity of the banking union. However, they are also obliged to follow national law implementations of EU Directives and any legally allowed national options and discretions in the exercise of their competencies under EU law.

**Text Figure 2. Danish Banks: Legal Organization and Ownership**

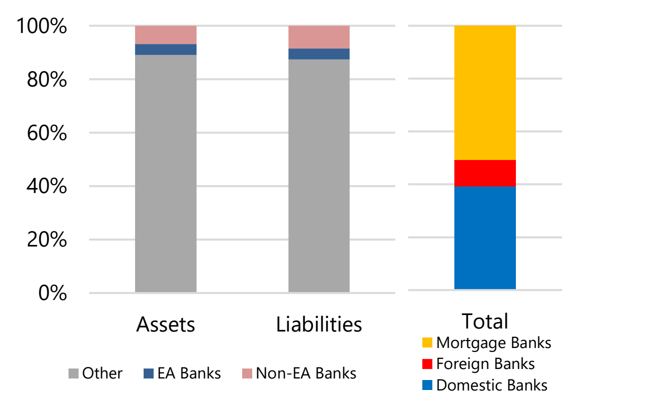
(number of entities, end 2017)




Sources: DFSA Banking Key Performance Indicators, ECB Financial Structure Indicators, ECB Payments Statistics, and IMF staff calculations.
Notes: Domestic banks are deposit-taking credit institutions. Mortgage banks are mortgage credit institutions, which are specialized in mortgage financing and do not take deposits. Foreign subsidiaries are foreign-owned and parented, deposit-taking credit institutions incorporated in Denmark. Foreign branches are branches of foreign banks incorporated outside of Denmark. EA = euro area; EEA = European Economic Area. These numbers do not reflect changes in banks' legal structures or locations since end 2017.

**Text Figure 3. Danish Banking System Balance Sheet**

(2017:M12)




Source: StatBank, Statistics Denmark; BIS Locational Banking Statistics; and IMF staff calculations.
Notes: Banking system data are presented on an unconsolidated basis. The euro area and non-euro area bank counterparty positions are calculated from the sums of the bilateral positions versus the reporting countries of the BIS locational banking statistics. Domestic banks are deposit-taking, domestically owned credit institutions. Mortgage banks are domestic mortgage credit institutions. Foreign banks are foreign-owned credit institutions (either subsidiaries or branches). Total banking sector size is about 350 percent of nominal GDP or about 7.7 trillion DKK. These numbers do not reflect changes in banks' legal structures or locations since end 2017.

[6] For a non-EA member state, banking union participation is formalized through a cooperation agreement between the banking union institutions (the ECB and SRB) and national competent and resolution authorities. Directions from the BU institutions would be delegated to the national authorities under the agreement.

[7] See ECB (2019) for the determination of significant institutions within the banking union. Note that the ECB and SRB have the right to bring any bank incorporated within the banking union under their direct supervisory or resolution authority.

**4. Joining the banking union would have wide-reaching impacts on the structure and practice of bank supervision and resolution in Denmark.** Among the most relevant changes for Denmark would be:

- ***Home/host issues vis-à-vis other banking union members mitigated.*** By unifying supervision and resolution across banking union member, the possible home/host divergence of interests that can arise with branches and banking groups operating cross-border within the banking union would be reduced. In principle, this would eliminate ringfencing of capital and liquidity according to national borders within the banking union, although in practice there remains a substantial amount of ringfencing, as national authorities make use of legally allowed options and discretions (ECB 2017; IMF 2018). Denmark does not currently have many foreign banks or branches with EA parents operating domestically (Text Figure 2, as of end 2017). Foreign banks account for about 10 percent of the Danish total banking system balance sheet. About 4 percent of Denmark's overall banking system balance sheet have EA bank counterparties, while non-EA, foreign bank counterparties account for about 8 percent (Text Figure 3, as of end 2017).
- ***Reduced likelihood for perceived or actual conflicts of interest in supervision or resolution.*** For an SI, a joint supervisory team (JST) and an internal resolution teams (IRT) would be constituted by the ECB and SRB respectively, with each typically led by a non-national with nationals on the team.
- ***More extensive supervisory resources and experience with the oversight of large banks.*** The ECB and SRB are responsible for the supervision and resolution of 8 globally, systemically important banks (G-SIBs), almost one-third of the global total, as well as most domestically, systemically important banks (D-SIBs) in the banking union.[8] Were Denmark to join, then the ECB and SRB would take over the direct oversight of the largest three banks.
- ***Access to the resources of the Single Resolution Fund (SRF).*** The SRB has the option to utilize the SRF (financed by the banking industry across banking union member states) in bank resolution if it is deemed to be in the public interest. In steady-state, the SRF will be over 15 percent of Denmark's nominal GDP, providing a potentially substantial buffer against the resolution of a large Danish bank requiring public funds.[9] The December 2018 political agreement for a common fiscal backstop to the SRF reinforces this buffer.[10]

[8] The G-SIB designation is made by the Financial Stability Board (see FSB 2018). See IMF (2018a) for further details on the supervisory quality and resources.

[9] The steady-state target of the SRF is 1 percent of covered deposits in the banking union, which currently would translate into about €56 billion. Use of the SRF in the resolution of a bank by the SRB may only occur after at least 8 percent of the bank's total liabilities (including own funds) are bailed in. Moreover, the contribution from the SRF may not exceed 5 percent of the bank's total liabilities. See SRB (2019).

[10] See EU (2018) for the terms of reference for the SRF common fiscal backstop, including the modalities for non-EA members of the banking union to contribute to the common fiscal backstop. The political agreement by the Eurogroup was for the backstop to be introduced at the latest by the end of the SRF transition period (end 2023), but potentially earlier provided there has been sufficient progress on risk reduction by banking union member states (to be reassessed in 2020).

- ***Additional channels for macroprudential policy tightening.*** Banking union participating member states need to provide sufficient notice to the ECB if they aim to deploy macroprudential policies.[11] Moreover, the ECB has "top-up" powers over some macroprudential instruments as part of its supervisory powers, meaning that it may impose stricter requirements for capital buffers than those selected by national authorities. In cases where the national authorities are sluggish to act against macrofinancial risks, this could provide a helpful check.

- ***Supervisory decision-making process.*** To be legally binding, supervisory decisions made by the ECB's Supervisory Board (SB) must be adopted by the ECB Governing Council (GC). Non-EA EU member states participating in the banking union are represented in the SB but not the GC, which only includes EA members. In practice, draft decisions submitted by the SB have so far been adopted by the GC *pro forma* under a non-objection procedure (see ECB 2018, ECB 2019a, and ECB 2019b for details and discussion of the procedure). Recognizing that non-EA members would not have representation on the GC, safeguards are available in the decision-making process.[12] If a non-EA member disagrees with a draft supervisory decision of the SB or to an objection by the GC to a draft supervisory decision, the non-EA member has the option to indicate their "reasoned disagreement" and ask for the withdrawal of the decision or objection. If no compromise can be found and the non-EA member indicates that it will not be bound by the decision, this can result in the suspension or termination of the member state's participation in the banking union. Although the system is generally felt to have worked, there have not yet been any non-EA members of the banking union.[13]

- ***Resolution decision-making.*** In resolution decisions, Denmark would be represented the same as other banking union members under the SRM. For any failing or likely-to-fail bank, the SRB assesses if it is in the public interest to resolve the bank or to wind it up under national insolvency procedures.[14]

**5. There are also three key areas specific to the Danish banking system which may require further clarity:**

- ***Treatment of Mortgage Credit Institutions (MCIs).*** The Danish model of mortgage finance via specialized, non-deposit taking credit institutions that match individual mortgages to marketable funding liabilities is unique in Europe.[15] As such, MCIs do not suffer from market funding risk in the same way that a traditional, deposit-taking bank may. Consequently, the

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[11] See Article 5 of the SSM Regulation (EU 2013) and Box 4 of IMF (2015) for further details.

[12] See Article 7 of the SSM Regulation (EU 2013).

[13] See the SSM Annual Report (2018) for information on the number of supervisory decisions made each year. ECB (2019) indicates that there has never been an objection raised by the GC since the inception of the SSM.

[14] The criteria for a public interest determination are described in the SRM Regulation (EU 2014). See also IMF (2018c) for further discussion of the public interest determination within the BU.

[15] By law, the MCI business model follows the balance principle, matching mortgage assets to funding liabilities with a parallel structure (see DFSA 2018a).

supervisory treatment of MCIs has typically been different than that for deposit-taking banks.[16] MCIs account for over half of the banking system balance sheet and are the primary source of real estate and housing finance in Denmark. The system is generally thought to have served Denmark well.[17] Prior to any decision on banking union opt-in, the authorities and the sector should detail the specific issues of supervisory and resolution treatment on which they would request greater clarity from the BU institutions. It may be that further assurances are required to confirm the extent to which the current system could continue.

- ***Resolution of small to medium-sized banks.*** Unlike national supervisors in many banking union member states, the DFSA applies minimum requirements for own funds and eligible liabilities (MREL) to small and medium-sized banks under the presumption that they will be resolved using the tools of the Bank Recovery and Resolution Directive (BRRD) after applying the public interest tests, rather than wound down through national insolvency procedures.[18] This includes the possible use of public funds in the recapitalization of distressed small and medium-sized banks. It is unclear if this interpretation and application of the BRRD would continue under the SRB. If not, it may be that some alternative arrangement (for example, adding the resolution of small and medium-sized banks to national insolvency procedures) could enable the continuation of this practice.
- ***Treatment of Greenland and the Faroe Islands.*** Supervision and resolution of the four, small banks in the countries of Greenland and the Faroe Islands are currently the responsibility of the DFSA. However, although the countries are part of the Kingdom of Denmark, they are not part of the EU and hence are not technically able to participate in the banking union. How their situation may be accommodated (for example, leaving their supervision and resolution the sole responsibility of the DFSA with access to Danish resolution funds and deposit insurance) while allowing the rest of Denmark to join the banking union is uncertain.

**6. The BU's future prospects also must be taken into account in any decision.** As noted earlier, the third pillar of common deposit insurance—a critical risk sharing component for banking union—is still missing. The EC (2017) has noted that further progress on risk sharing must go hand-in-hand with risk reduction by national banking systems, highlighting in particular the high levels of non-performing loans (NPLs) in some member countries. The December 2018 Euro Summit urged the adoption of the banking package (adopted in April 2019) and the NPL prudential package, which incorporate several risk reduction measures. The Eurogroup (2018) is expecting reports on a

[16] MCIs are specifically exempt from the minimum requirements for own funds and eligible liabilities (MREL) under Article 45 of the BRRD (EU 2014b). However, the DFSA has set a debt buffer for MCIs as a class at a target of 2 percent of their unweighted loans by 2020. For banks and banking groups, the MREL target for banks is set at 8 percent by 2022. See DFSA (2018b) for further detail.

[17] See Berg, Nielsen and Vickery (2018) for a discussion of the performance of the Danish mortgage bank model in comparison to the United States model of agency securitization of mortgages. They note that the Danish mortgage markets remained stable and solvent during the 2007-09 global financial crisis, despite a large fall in house prices.

[18] See DFSA (2017).

roadmap for political negotiations on EDIS (the third pillar) and on the current set-up for liquidity provision in resolution by June 2019.

**7. Finally, although anti-money laundering and combating the financing of terrorism (AML/CFT)-related concerns have been cited in the Danish debate about the banking union, AML/CFT supervision remains a national obligation at the current time, even for banking union members.** Host country authorities are responsible for monitoring and enforcing compliance with AML/CFT requirements on the part of financial institutions, whether national or cross-border, operating within their territories. Home country authorities are responsible for the oversight of group-wide AML/CFT policies and procedures. Even from within the banking union, the Danish authorities would continue to oversee banks and branches operating domestically for compliance with their AML/CFT-related obligations and would also be responsible for monitoring and ensuring the implementation of group-wide AML policies on the part of Danish banks with foreign branches. The latter responsibility is carried out in cooperation and coordination with the host country supervisors. There are discussions ongoing at the EU level regarding possible options for further centralization of AML/CFT oversight.[19] See the selected issues paper for further discussion of these issues.

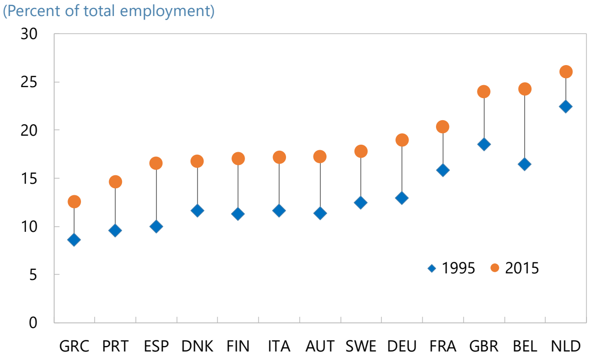
[19] See the recent EU Council (2018) statement on an EU AML/CFT action plan.

# Annex III. The Expansion of Knowledge-Intensive Services, Income Inequality, and Labor Market Institutions

*There is scope to expand employment in knowledge-intensive services in Denmark, which would boost productivity and enhance growth prospects. While increases in employment in these services tend to be associated with worsening income inequality, Denmark's strong labor market institutions seem to have mitigated such adverse effects so far. Safeguarding and adapting labor market institutions is paramount if Denmark is to reap the gains of expanding the knowledge sector while avoiding adverse effects on inequality.*

1. **There is scope to increase the share of employment in knowledge-intensive services and boost ICT investment.** Denmark has seen its employment share in knowledge-intensive services (KIS) rise from 12 percent to 17 percent since the mid-1990s (see Text Figure 1).[1] However, the expansion of knowledge employment was smaller in Denmark than in many countries and their employment share in 2015 was well below the leading European countries (Belgium and the Netherlands). Moreover, ICT investment (as share of gross value added) in the knowledge-intensive services sector in Denmark has been on a downward trend since the early 2000s (Text Figure 2). In fact, Denmark's ICT investment in these high growth service sectors (as well as the economy as a whole) was lower than many advanced economies in 2014 (Text Figure 3). Denmark should aim to close these gaps by increasing employment in KIS and ICT investment which would boost its productivity and growth prospects. Alongside being ICT-intensive, KIS also exhibit high productivity growth and are increasingly traded internationally (Hope and Martelli 2019; OECD 2019).[2] Investment in ICT has been found to be positively associated with firm productivity and a more dynamic business environment in Denmark (OECD 2019; Box 1.5).

**Text Figure 1. Employment In Knowledge-Intensive Services**
(Percent of total employment)

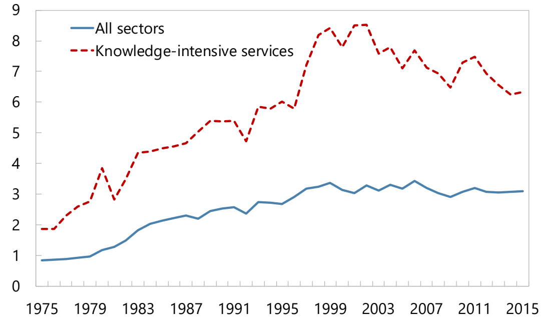



Sources: EU KLEMS (2017); IMF staff and authors' calculations.

[1] Knowledge-intensive services comprise finance and insurance, information and communications, and business services. ICT capital made a particularly large contribution to value added growth in these sectors across the EU12 between 2001 and 2015. ICT investment includes investment in computing equipment, communications equipment, and computer software and databases.

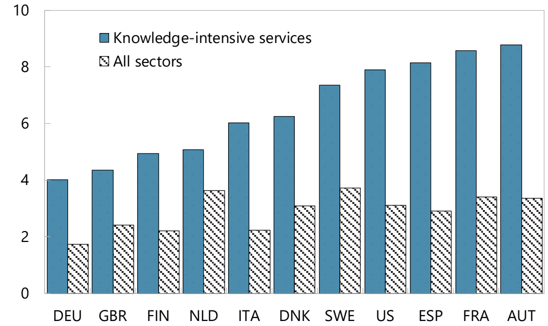
[2] Hope, David and Angelo Martelli. 2019. "The Transition to the Knowledge Economy, Labor Market Institutions, and Income Inequality in Advanced Democracies." *World Politics, 71*(2), 236–288.

**Text Figure 2. ICT Investment**
(Percent of gross value added)




Sources: EU KLEMS (2017); IMF staff and authors' calculations.

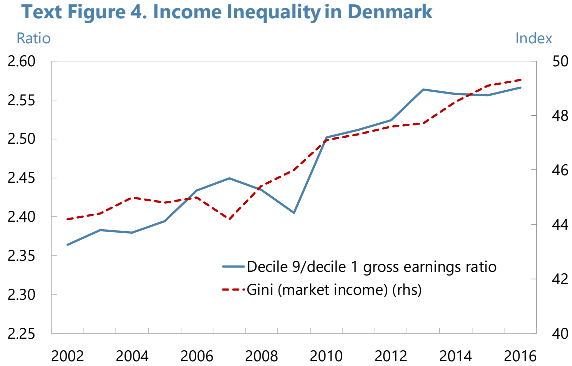
**Text Figure 3. ICT Investment, 2014**
(Percent of gross value added)




Sources: EU KLEMS (2017); IMF staff and authors' calculations.

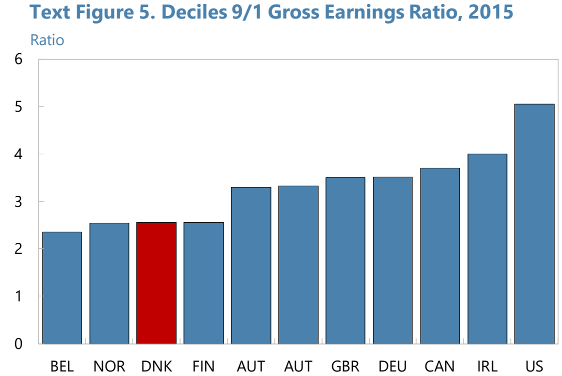
**2. Empirical evidence suggests that expanding the knowledge economy tends to be associated with worsening income inequality.** The period from the mid-1990s saw a ubiquitous expansion of the KIS in the advanced economies. Hope and Martelli (2019) carry out a panel data econometric study covering 18 OECD countries and find that increases in knowledge employment tend to be positively associated with increases in income inequality. The recent data on income inequality in Denmark is consistent with these findings as well. Measures of inequality in Denmark—such as the decile 9/decile 1 gross earnings ratio and the Gini coefficient—increased substantially between 2002 and 2016 (Text Figure 4).[3] Despite this upward trend in income inequality, Denmark still has one of the lowest income inequality among the OECD countries—the dispersion of earnings in Denmark in 2015 was similar to that in the other Nordic countries and Belgium, and considerably lower than that in the Anglo-Saxon countries (Text Figure 5).

**Text Figure 4. Income Inequality in Denmark**




Sources: OECD Labor Force Statistics; Solt, Frederick (2016).

**Text Figure 5. Deciles 9/1 Gross Earnings Ratio, 2015**




Source: OECD Labour Force Statistics.

**3. Safeguarding and adapting labor market institutions is essential to mitigating the inequality-worsening effects of expanding knowledge employment.** The Danish labor market has often been lauded for its *Flexicurity* employment model, enabling employers to hire and fire relatively easily, while guaranteeing workers wage solidarity and retraining options in the case of job loss. Employment protection legislation (EPL) for regular contracts has remained fairly stable over

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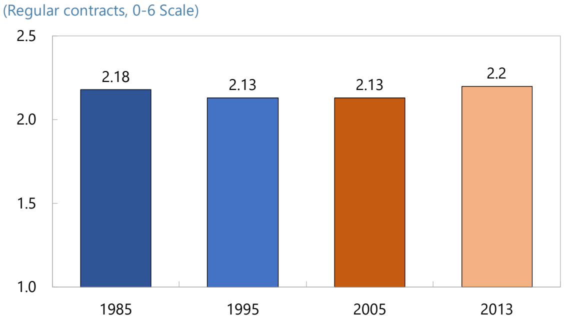
[3] Solt, Frederick. 2016. "The Standardized World Income Inequality Database." Social Science Quarterly 97(5):1267–1281.

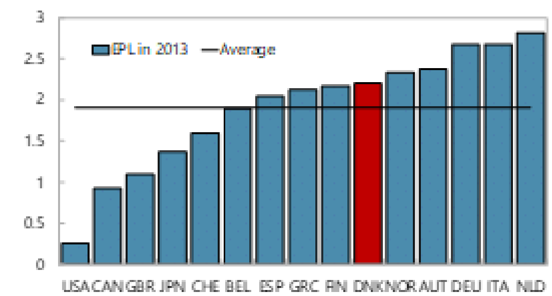
the last three decades, with a slight increase since the global financial crisis (Text Figure 6a). Denmark's level of EPL is similar to or lower than most of the other continental European and Nordic countries, but is still considerably higher than the Anglo-Saxon countries (Text Figure 6b).[4] Regarding the degree of wage coordination, Denmark continues to exhibit a fairly coordinated wage-setting system, which is in line with the rest of the Nordic countries (Text Figure 7).[5] Trade union density in Denmark declined between 1985 and 2015 (Text Figure 8a). But this period also saw a weakening of trade unions in nearly all the OECD countries, and union membership remained substantially higher in Denmark in relative terms (Text Figure 8b). Along with the maintenance of high collective bargaining coverage (Text Figure 9), this highlights the pivotal role still played by trade unions in the Danish system of industrial relations.[6]

**Text Figure 6.a. Employment Protection Legislation: Denmark**
(Regular contracts, 0-6 Scale)



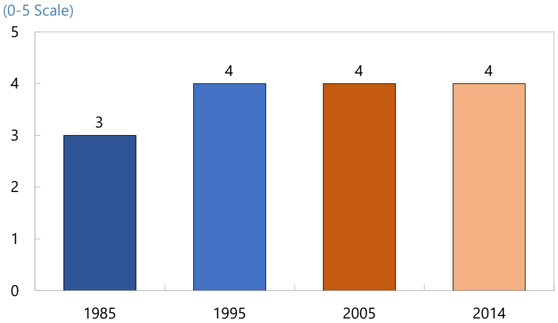

Note: Employment protection legislation measures the procedures and costs involved in dismissing individuals, ranging from 0 (not strict) to 6 (very strict).
Source: OECD Labour Force Statistics.

**Text Figure 6.b. Employment Protection Legislation: Cross Country**
(Regular contracts, 0-6 scale)



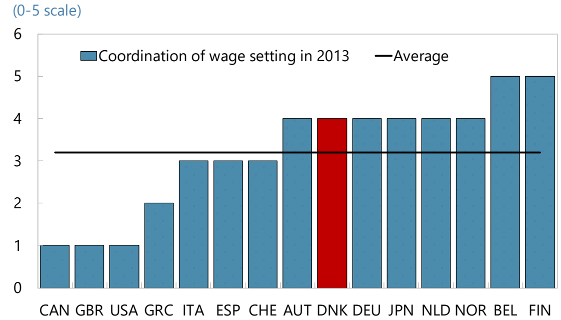

Note: Employment protection legislation (EPL) is on 0-6 scale and is for individual and collective dismissals (regular contracts).
Source: OECD Labor Force Statistics.

**Text Figure 7.a. Coordination of Wage-setting: Denmark**
(0-5 Scale)




Note: Coordination of wage-setting measures the degree of coordination, ranging from firm level bargaining (1) to fully centralized bargaining (5).
Source: J. Visser, ICTWSS Database version 5.1.

**Text Figure 7.b. Coordination of Wage-setting: Cross Country**
(0-5 scale)




Note: Coordination of wage-setting measures the degree of coordination, ranging from firm level barging (1) to fully centralized bargaging (5).
Source: J. Visser, ICTWSS database. Version 5.1.

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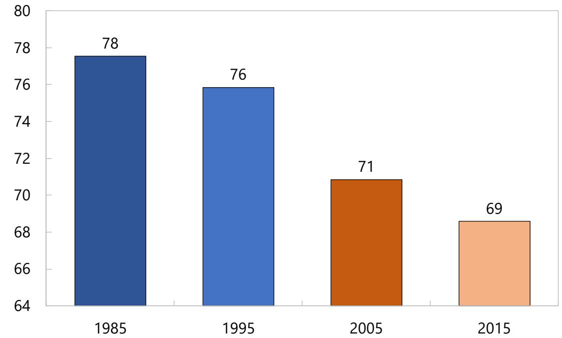
[4] It is important to note that employment protection refers to only one dimension of the complex set of factors that influence labor market flexibility.

[5] OECD and J. Visser, ICTWSS Data base. version 5.1. Amsterdam: Amsterdam Institute for Advanced Labor Studies (AIAS), University of Amsterdam. September 2016. Caution is needed in interpreting scores for individual countries given subtle differences in the nature and measurement of wage setting across countries.

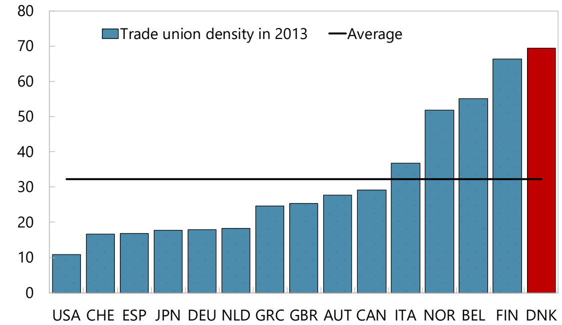
[6] Caution is needed in interpreting scores for individual countries given subtle differences in the nature and measurement of collective bargaining across countries.

**Text Figure 8.a. Trade Union Density: Denmark**
(Percent)



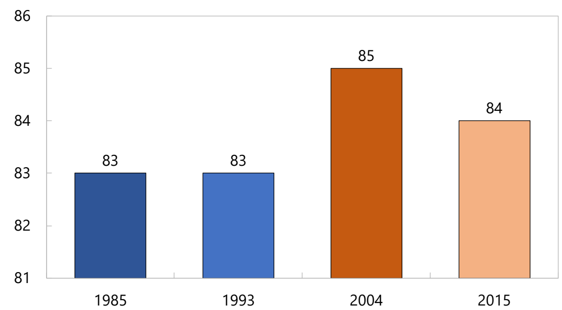

Source: OECD and J. Visser, ICTWSS Database.

**Text Figure 8.b. Trade Union Density: Cross Country**
(Percent)



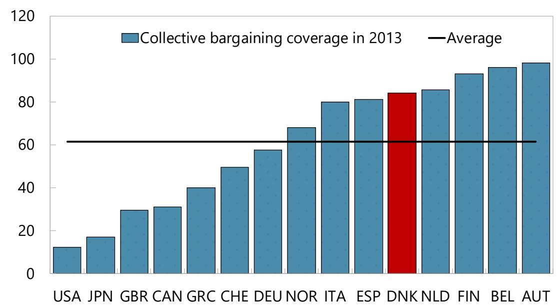

Sources: OECD and J. Visser, ICTWSS database.

**Text Figure 9.a. Collective Bargaining Coverage: Denmark**
(Percent)




Note: Collective bargaining coverage rate is the ratio of employees covered by collective agreements, divided by all wage earners with right to bargaining.
Source: OECD and J. Visser, ICTWSS Database.

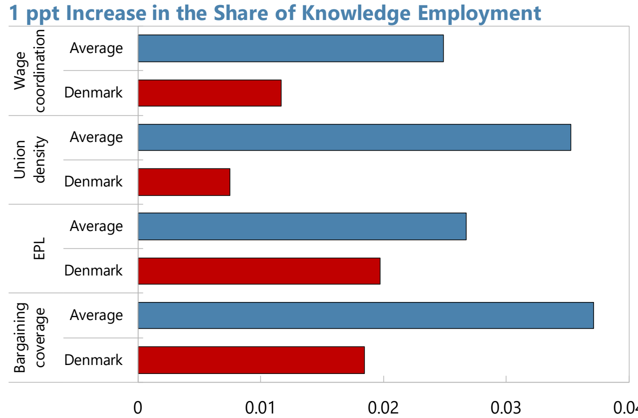
**Text Figure 9.b. Collective Bargaining Coverage: Cross Country**
(Percent)




Note: Collective bargaining coverage rate is the ratio of employees covered by collective agreements, devided by all wage earners with right to bargaining.
Sources: OECD and J. Visser, ICTWSS database.

4. **The presence of strong labor market institutions helps to mitigate the adverse effects that expansion of knowledge-intensive services has on income inequality.** In other words, industrial relations systems can still act an important guarantor of wage solidarity across the labor force in the knowledge economy. Denmark still possesses strong labor market institutions, which seem to have dampened the rise in income inequality seen in recent decades. Using the empirical analysis in [Hope and Martelli (2019)](), one can trace the effects of an increase in knowledge employment on income inequality conditional on the level of labor market institutions. Text Figure 10 shows the estimated effects on income inequality (measured by the 90/10 wage ratio) conditional on the

**Text Figure 10. Estimated Effect on the 90/10 Wage Ratio of 1 ppt Increase in the Share of Knowledge Employment**




Sources: Hope and Martelli (2019); IMF staff and authors' calculations.

level of Denmark's labor market institutions.[7] As the figure suggests, the expansion of knowledge-intensive services in Denmark only has modest effects on income inequality. On the other hand, the estimated effects for an "average" economy in the sample are much larger, which illustrates the mitigating effects Denmark's strong labor market institutions had on income inequality.

**5. Safeguarding and adapting labor market institutions is paramount if Denmark is to reap the gains of expanding the knowledge sector while avoiding adverse effects on income inequality.** Despite their successes, labor market institutions in Denmark will need to continue to adapt if they are to meet the challenges of the knowledge economy. In this vein, there are several potential steps that could be taken to ensure that Denmark's labor market institutions continue to play an important role in wage solidarity in the knowledge economy, such as:[8]

- Ensuring that labor market institutions are extended to cover workers in new, knowledge-intensive industries, especially in those industries where employment is more flexible and precarious than it is in the traditional blue-collar industries that form the backbone of the Danish industrial relations system.

- Pushing for closer cooperation between companies, social partners, and the government to ensure that new forms of employment in knowledge-intensive industries are guaranteed conditions and security similar to those of workers covered by collectively bargained agreements.

- Protecting and adapting the flexicurity model to the knowledge economy, by maintaining the current modest level of employment protection for permanent workers alongside harmonizing the rules on unemployment benefits to ensure that security is also provided for the growing number of workers with non-standard employment relationships (e.g. the self-employed, the atypically employed).

[7] We use 2013 numbers for this exercise since it is the latest year for which comparable data is available for all the four labor market institutions. The sample comprises Austria, Belgium, Canada, Denmark, Finland, Germany, Greece, Italy, Japan, Netherlands, Norway, Spain, Switzerland, the United Kingdom, and the United States.

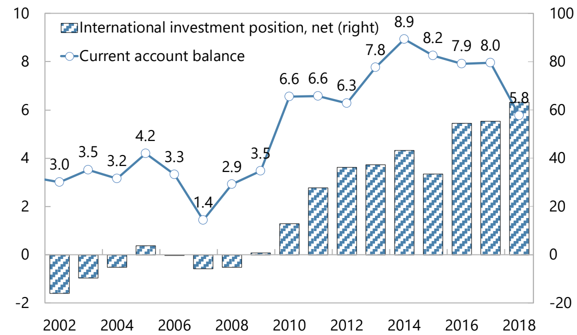
[8] These steps are broadly in line with the recommendations of the recent Danish Government report *Prepared for the Future of Work* (2019).

# Annex IV. External Balance Assessment

*The current account surplus has come down in 2018 amid a decline in net exports of goods and services and reflecting a decrease in savings and a significant rise in investment. The surplus remains high and is mainly driven by offshore activity of Danish multinational corporations and investment income. Staff assesses the external position to be moderately stronger than implied by medium-term fundamentals. While the External Balance Assessment model does not identify policies that explain most of the excess surplus, structural polices aimed at raising investment, including through a gradual improvement in capital markets, would help reduce the surplus.*

**1. Denmark's external position has come down but remains large in comparison to pre-crisis levels.** The current account (CA) surplus in 2018 was 5.8 percent of GDP, significantly lower than the 8.0 percent of GDP in 2017 and its post-crisis average of 7.5 percent. The large increase in the external balance since 2009 has resulted in accumulation of foreign assets of 299 percent of GDP in 2018, via direct and portfolio investment by firms, pension funds, and households. This has increased the net international investment position (NIIP) to 63.2 percent of GDP in 2018, in part due to a large rise in asset prices.[1]

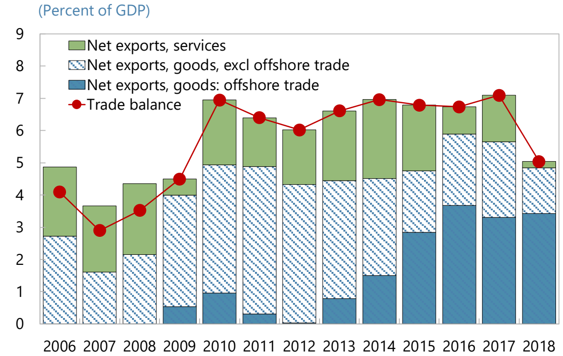
**Text Figure 1: Danish External Position**
(Percent of GDP)




Source: Statistics Denmark.

**2. Offshore trade and investment income from abroad are significant drivers of the current account.** Danish net exports of goods make up most of the trade balance (4.8 out of 5.0 percent of GDP in 2018). Importantly, in the last decade, an increasing share of exports is produced outside Denmark (3.4 percent of GDP in 2018 from less than 1 percent ten years ago). This can be explained by the growing integration of Danish firms in global value chains and the activities of large Danish multinational corporations in merchanting and processing trades.[2] The large international investment position also generates considerable income

**Text Figure 2. Trade Balance**
(Percent of GDP)




Sources: Statstics Denmark; and IMF staff calculations.

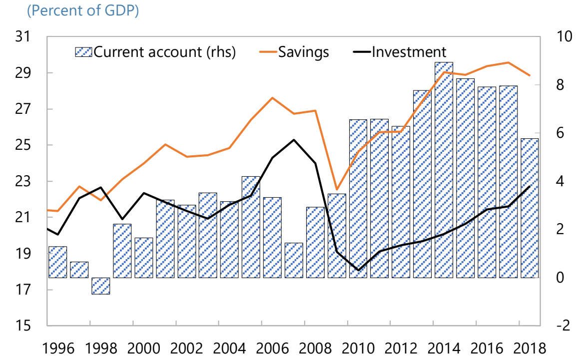
[1] Central bank analysis also finds that about 50 percent (some DKK 3 trillion) of Danes' foreign assets are interest-rate or equity-price sensitive in 2016, up from 41 percent in 2005 (DN 2018).

[2] Merchanting trade refers to Danish firms' purchases and resales of goods abroad without processing, which may cover intercompany transactions such as sales of goods between parent and subsidiary firms. Processing trade is similar to merchanting, but goods are procured and processed abroad before being sold. See Annex II of the Denmark 2017 Article IV staff report for more information.

from abroad, as Danish residents have invested significantly in foreign assets which yield more than foreigners' holdings of Danish assets.

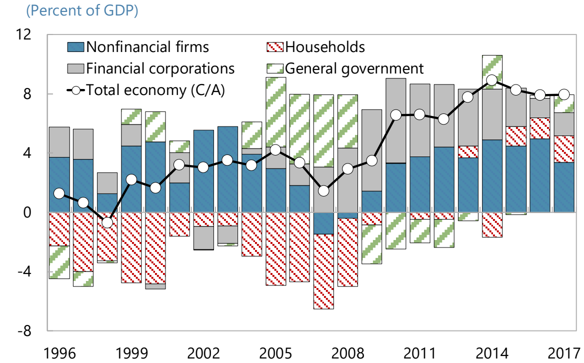
**3. In line with the declining CA, investments have picked up substantially while savings have declined in 2018.** Investments rose to 22.7 percent of GDP (increasing by 1.1 percentage points from 2017) and savings declined to 28.8 percent of GDP (decreasing 0.7 percentage point from 2017). While private sector firms have the highest proportion of net savings, their contributions decreased in 2017. Following the global financial crisis, savings and investment declined considerably, but savings recovered more quickly. Nonfinancial firms reduced their investment and sought to repair their balance sheets by deleveraging. Following a large housing price decline, households sought to repay part of their large debt and increase their savings in the process.[3] Investment recovered more slowly after the crisis. This resulted in a sizeable increase of the net lending position (savings minus investment) of nonfinancial firms. This partially explained the increase in the current account surplus, along with the increased need of banks to shore up capital by retained earnings (i.e., savings).

**Text Figure 3. External Balance, Savings and Investment**
(Percent of GDP)




Sources: Statistics Denmark; and IMF staff calculations.

**Text Figure 4. Saving - Investment Balances by Sector**
(Percent of GDP)




Sources: Statistics Denmark; and Fund staff calculations.

**4. Staff assesses the current account to be moderately stronger than the level consistent with medium-term fundamentals, but this assessment is subject to important uncertainties.** The IMF's External Balance Assessment model estimates the cyclically-adjusted current account position at 6.0 percent of GDP for 2018, and a current account norm of 4.3 percent of GDP. Considering these factors, staff assesses the current account gap at around 1.7 percent, which indicates that the external position is moderately stronger than the level consistent with medium-term fundamentals. Due to the decline in the CA, the assessment has changed compared to last year when Denmark's current account was assessed to be stronger than the level implied by medium-term fundamentals. This estimate, however, remains subject to considerable uncertainties as it does not account for Denmark-specific factors that would affect the gap:

[3] The delineation of household and corporate savings in Denmark can be difficult as many households choose to save via their ownerships of corporate entities, partly due to a preferential tax treatment. Chapter 1 of Denmark 2017 Article IV, Selected Issues, provides more information.

- **Denmark's large pension contributions** arising from the ongoing transition to the fully-funded retirement system, which funds generous pension incomes (with replacement rates among the highest in the OECD), create significant structural savings. The effect of higher mandatory individual savings on the national savings rate is subject to some debate. Some research suggests that higher mandated pension savings need not lead to higher national savings because of substitution effects and borrowing considerations by households (Samwick 2000). However, earlier research by the Danish Economic Council (2008) suggests that, in practice, mandatory pension contributions are not fully offset by increases in borrowing or decreased savings elsewhere (see also DN 2015).

- **Measurement issues related to merchanting and offshore processing trade need also be considered,** given their dominant role in Denmark's trade balance. Data limitations and lack of disclosures by multinational corporations for their pricing practices for R&D costs and other non-standard activities complicate the estimation of their effect on the current account. Analysis by DN (Jorgensen 2018) suggests that offshore trading activities may lead to a slight overestimation of the current account surplus.

**5. While the External Balance Assessment model does not identify policies that explain most of the excess surplus,** structural polices aimed at raising investment, including through a gradual improvement in capital markets, would help reduce the surplus.

**Text Table 1. External Balance Assessment, 2019[1/]**

| Methodology | Current account gap (percent of GDP) | REER gap (percent) |
|---|---|---|
| Current account analysis | 1.7 | - |
| Index REER analysis | - | 10.6 |
| Level REER analysis | - | 12.0 |

Source: IMF External Sector Report; and Fund staff calculations.

1/ Minus signs for the REER gaps indicate undervaluation.

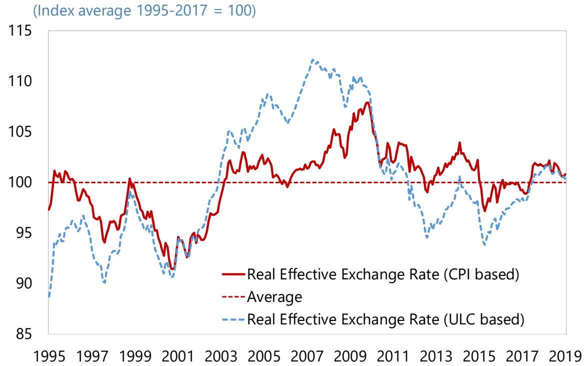
**6. REER models and competitiveness indicators suggest different exchange rate assessments,** pointing to the difficulties associated to arriving at an overall external assessment.

- The level real effective exchange rate (REER) model estimates that the krone is overvalued by about 12 percent. The index REER model estimates that the krone is overvalued by about 10.6 percent. Moreover, the REER indices based on inflation and unit labor costs have hovered around their 20-year average levels in recent periods, having recovered from recent periods of undervaluation.

- Competitiveness indicators do not suggest significant misalignment of the exchange rate. Denmark's unit labor cost has risen faster than in its major competitors, such as the Euro area for the past two decades. Nevertheless, an increase in Denmark's terms of trade over the same period partly offsets the increase in unit labor cost, reflecting the improvement of Danish export prices arising in high-value industries such as pharmaceuticals.

**Text Figure 5. Real Effective Exchange Rate, 1995 - 2019**

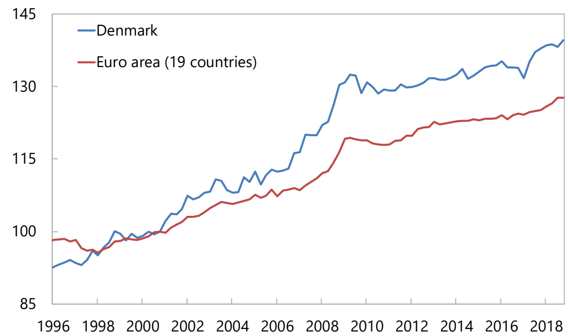
(Index average 1995-2017 = 100)




Source: IMF.

**Text Figure 6. Unit Labor Cost**

(Index, 2000=100; based on hours worked)




Sources: Eurostat; and IMF staff calculations.

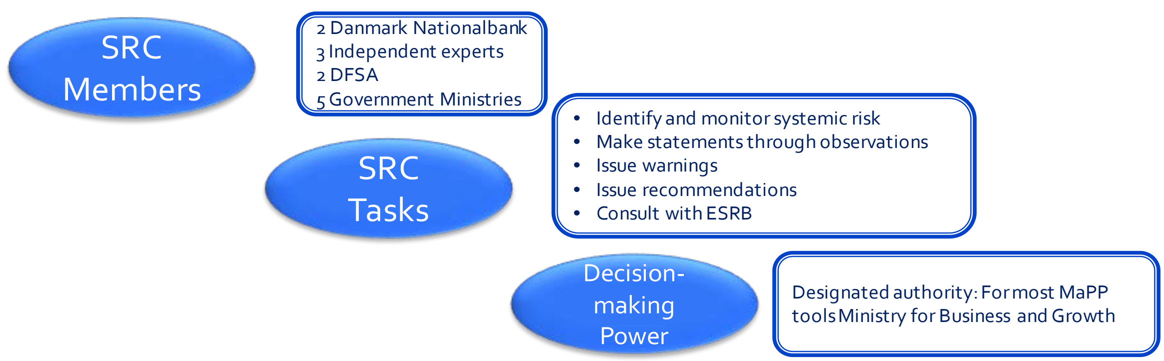
- A recent study by the DN shows that changes in the exchange rate have only a modest impact on the current account (DN 2019).

# Annex V. Improving the Macroprudential Framework in Denmark

*The process followed by the Systemic Risk Council to arrive at a recommendation can take too long, potentially hindering macroprudential policy implementation. A review of the efficacy of macroprudential policy implementation is therefore encouraged, including actions to strengthening confidence in policies, communication, and institutional arrangements.*

1. **The Systemic Risk Council is a pillar in the institutional framework for macroprudential policy implementation in Denmark.** The Systemic Risk Council (SRC) brings together representatives from the DN, the DFSA, relevant government ministries and independent experts. The chairman of the DN Board of Governors heads the SRC and the central bank hosts the secretariat, in which the DFSA and other ministers represented in the SRC participate. The SRC tasks are to identify and monitor systemic financial risks, to issue observations, warnings, and recommendations to the DFSA and the government. The decision-making power on most macroprudential instruments currently available lies with the Minister of Industry, Business and Financial Affairs (MIBFA), appointed as the designated macroprudential authority. The SRC has important strengths, including: sound transparency and accountability arrangements such as the "comply or explain rule" and "the abstention rule" for government representatives and the DFSA on recommendations to government.[1]

**Text Figure 1. The Danish Systemic Risk Council**

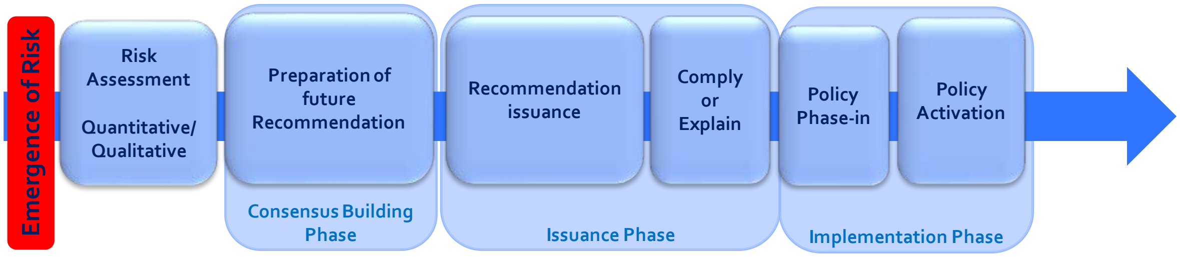



2. **The process for policy implementation in Denmark is similar to other countries.** This can be characterized in three phases, including a "risk assessment," an "issuance" and an "implementation" phase. Denmark seems to be in an advantageous situation in many aspects, including the risk assessment phase, given the technical capacity of authorities, data availability and quality. The issuance and implementation phases seem to be working adequately. Once a

[1] There is a high degree of transparency in the communication of the SRC. The SRC publishes observations, warnings and recommendations. However, on the grounds of, for example, financial stability, the SRC may decide that a warning or recommendation is confidential and shall not be made public. In addition, to inform the general public of its activities the SRC sends out a press release after each meeting with reference to the discussions and the content (FSAP Technical Note 2014).

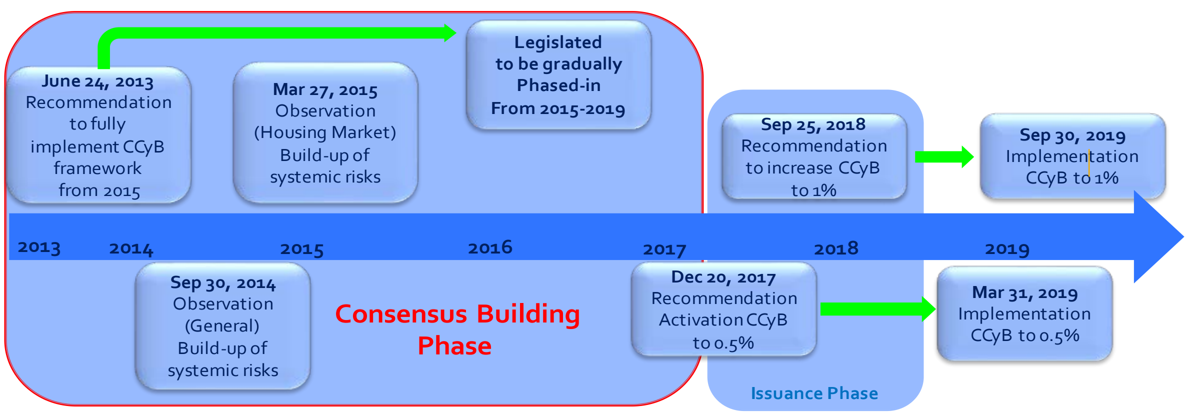
recommendation by the SRC is made, the MIBFA has three months to comply or explain and there seems to be adequate transparency in the implementation phase.

### Text Figure 2. The Process for MaPP Implementation in Denmark



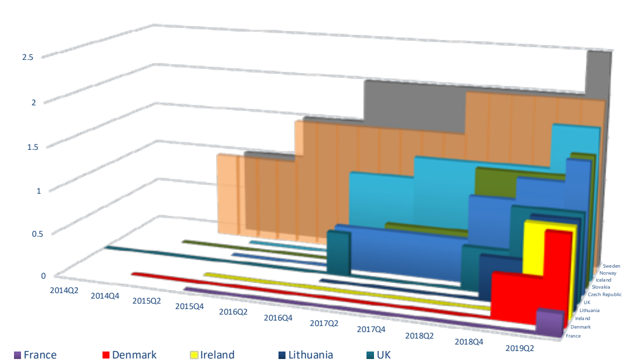

3. **However, the consensus building phase seems to have taken too long in some cases.** From published statements of the SRC meetings, it can be seen that observations mentioning "the build-up of systemic risk" started on September 2014; however, the recommendation to activate the Counter Cyclical Capital Buffer (CCyB) to 0.5 percent was done on December 2017. Thus, it appears that the "consensus building phase" to build up political consensus on the need to increase the CCyB, so the SRC could make a recommendation, took over three years.

### Text Figure 3. Consensus Building Phase




4. **It is also important to note that countries in the region started increasing the CCyB a few years earlier than Denmark.** While obviously, financial cycles and methodologies to estimate the CCyB are different across countries, it is a fact that the economies and banking sectors across countries in the region are highly interconnected. Hence, shocks experienced in other countries might impact negatively the Danish economy, Danish banks operating in the Nordic region and foreign banks operating in Denmark.

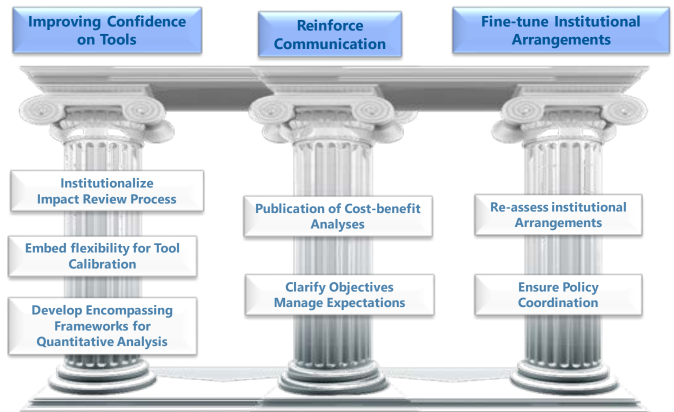
### Text Figure 4. Countercyclical Buffer Rates in Other Countries (Percent)




Sources: European Systemic Risk Board's website and websites of national macroprudential authorities.

**5. A strategy to improve the efficacy of policy implementation is encouraged.** Danish authorities have been highly proactive in the implementation of policies targeting financial stability. These include complementary policies targeting households and financial intermediaries in the form of macro- and microprudential policies (SIP 2018), supervisory guidance for MCIs and banks, and a reform of property taxation (IMF 2017). While the system seems to be working adequately, experience from other countries indicates that efficacy in policy implementation can be further improved by proactively targeting actions to reinforce confidence in tools, reinforce communication and fine-tuning institutional arrangements.[2]

**Text Figure 5. Strategy to Improve the Political Procedure**




**6. Improving confidence in tools.** Lessons from other countries indicate that this can be achieved by:

- ***Institutionalizing the review process***, thus, the SRC continuously assesses the effectiveness of implemented tools (performance vs. objectives). This would reduce uncertainty and mitigate against potential inaction bias.

- ***Characterizing risk factors and mapping them to policy tools***. Systemic risk amplification can be caused by various risk factors, including leverage, liquidity mismatch, maturity mismatch, mis-pricing of risk and interconnectedness in different sectors—financial, corporate, household, public. Hence, targeting adequate tools to address specific factors in specific sectors is important to ensure efficacy and transparency of policy actions.

- ***Embedding flexibility for tool calibration,*** by building a degree of flexibility into the design of tools to achieve financial stability goals while minimizing negative distributional/welfare externalities. For example, in Ireland, the political acceptance of borrower-based measures improved after first-time home buyers, who were proven to have a lower default frequency, received less stringent limits based on the evidence of their lower default frequency (see Central Bank of Ireland 2016).

[2] The functioning of the SRC was assessed in 2017 (MIBFA 2017). The outcome of the assessment indicates "it is the overall assessment that the Council is well-functioning and that it is a strength that authorities responsible for ensuring financial stability and for regulating the financial sector discusses financial issues in a forum where the financial system is monitored systematically."

- ***Developing "encompassing frameworks" for quantitative analysis***, which are frameworks to integrate in a structured manner suite of models and data to reduce risks of model and data error and produce a more comprehensive understanding than a single path analysis can deliver. For example, it would be useful to develop macroprudential stress tests to check the adequacy of buffer calibration, given the high integration of the banking sectors in the Nordics. These tests aim to quantify the losses due to systemic effects, i.e. losses due to contagion effects (due to direct or indirect interconnectedness) and due to the feedback mechanisms between the financial sector and the macroeconomy (IMF Working Paper 2018).

**7. Reinforcing communication.** Steps followed by other countries include:

- ***Communicating cost and benefit analyses*** of proposed and implemented tools fosters understanding of policy trade-offs.[3]

- ***Clarifying objectives to manage expectations***. It is of high relevance to continuously remind the objectives of MaPP to avoid mis-judgements on their effectiveness or impact and limit push-back from lenders, borrowers, or politicians.

**8. Fine-tuning institutional arrangements.** Two aspects seem relevant:

- ***Assessing their adequacy***. As indicated by the FSAP 2014, given that the decision-making power lies with the government (as opposed to an institution with operational independence), there is a greater risk that political considerations could delay necessary macroprudential action (Nier and others 2011).[4] There seems to be some evidence of such risk, given the length of "consensus building process" needed for SRC to make a recommendation on the CCyB. An additional point is related to the balance of legal powers for policy implementation. While in Denmark, the MIBFA has to comply or explain after a recommendation is made by the SRC, experience from other countries indicates that improvements in timeliness can be achieved by assigning independent authorities a macroprudential mandate which includes legal powers to implement macroprudential policy with corresponding transparency and follow-up accountability requirements (UK's Financial Policy Committee Powers). Thus, following up on the FSAP 2014, the authorities are encouraged to assess the effectiveness of the current system, including the appointment of the government as the designated macroprudential authority.

- ***Developing arrangements to ease policy coordination***. Addressing macro-financial vulnerabilities requires deployment of coordinated policies. Thus, it is of relevance to ensure that institutional arrangements allow for proper coordination across policies, including tax and housing supply (Section B).

[3] Reserve Bank of New Zealand publishes regulatory impact assessments of policy tools. The UK FPC is required to communicate the costs and benefits from the deployment of MaPP tools.

[4] Denmark is one of only few countries in Europe where the designated authority is the government.

# Annex VI. Debt Sustainability Analysis

## Denmark Public Sector Debt Sustainability Analysis (DSA) - Baseline Scenario

(in percent of GDP unless otherwise indicated)

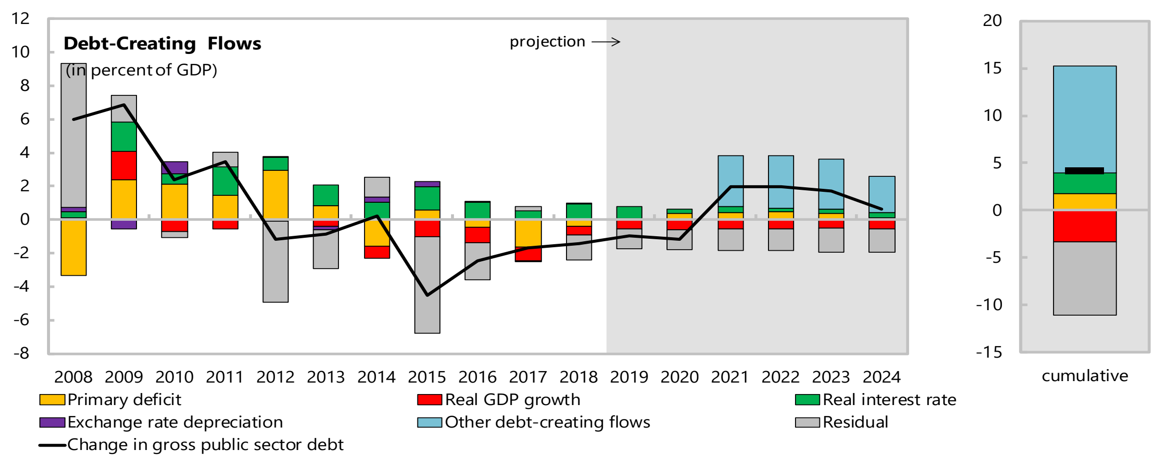
### Debt, Economic and Market Indicators [1/]

| | Actual | | | Projections | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2008-2016 [2/] | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Nominal gross public debt | 41.4 | 35.6 | 34.1 | 33.2 | 32.0 | 34.0 | 35.9 | 37.7 | 38.3 |
| Public gross financing needs | 6.7 | 3.9 | 4.9 | 5.3 | 5.5 | 5.9 | 6.5 | 6.7 | 6.7 |
| Net public debt | 15.2 | 14.7 | 13.6 | 13.3 | 12.8 | 12.5 | 12.2 | 11.8 | 11.2 |
| Real GDP growth (in percent) | 0.6 | 2.3 | 1.4 | 1.7 | 1.9 | 1.7 | 1.6 | 1.5 | 1.5 |
| Inflation (GDP deflator, in percent) | 1.6 | 1.4 | 0.4 | 1.6 | 1.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| Nominal GDP growth (in percent) | 2.2 | 3.7 | 1.8 | 3.3 | 3.7 | 3.8 | 4.0 | 4.0 | 3.9 |
| Effective interest rate (in percent) [4/] | 4.3 | 3.0 | 3.1 | 3.9 | 2.5 | 3.2 | 3.1 | 3.2 | 3.3 |

| As of March 22, 2019 | | |
|---|---|---|
| Sovereign Spreads | | |
| EMBIG (bp) 3/ | 8 | |
| 5Y CDS (bp) | 12 | |
| Ratings | Foreign | Local |
| Moody's | Aaa | Aaa |
| S&Ps | AAA | AAA |
| Fitch | AAA | AAA |

### Contribution to Changes in Public Debt

| | Actual | | | Projections | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2008-2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | cumulative | debt-stabilizing primary balance [9/] |
| Change in gross public sector debt | 1.1 | -1.7 | -1.4 | -1.0 | -1.2 | 2.0 | 2.0 | 1.7 | 0.6 | 4.1 | |
| Identified debt-creating flows | 1.5 | -1.9 | 0.0 | 0.2 | 0.0 | 3.3 | 3.3 | 3.1 | 2.0 | 11.9 | |
| Primary deficit | 0.5 | -1.6 | -0.4 | 0.1 | 0.4 | 0.4 | 0.5 | 0.4 | 0.1 | 1.8 | 1.9 |
| Primary (noninterest) revenue and grants | 52.9 | 51.7 | 50.7 | 50.5 | 50.0 | 49.7 | 49.5 | 49.4 | 49.5 | 298.7 | |
| Primary (noninterest) expenditure | 53.5 | 50.1 | 50.3 | 50.6 | 50.4 | 50.2 | 50.0 | 49.8 | 49.6 | 300.5 | |
| Automatic debt dynamics [5/] | 0.9 | -0.3 | 0.4 | 0.2 | -0.4 | -0.2 | -0.3 | -0.3 | -0.2 | -1.2 | |
| Interest rate/growth differential [6/] | 0.8 | -0.3 | 0.4 | 0.2 | -0.4 | -0.2 | -0.3 | -0.3 | -0.2 | -1.2 | |
| Of which: real interest rate | 1.1 | 0.6 | 0.9 | 0.7 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 2.1 | |
| Of which: real GDP growth | -0.3 | -0.8 | -0.5 | -0.6 | -0.6 | -0.5 | -0.5 | -0.5 | -0.5 | -3.3 | |
| Exchange rate depreciation [7/] | 0.1 | -0.1 | 0.0 | … | … | … | … | … | … | … | |
| Other identified debt-creating flows | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 3.1 | 3.0 | 2.2 | 11.3 | |
| 0 (negative) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Contingent liabilities | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Social housing bonds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 3.1 | 3.0 | 2.2 | 11.3 | |
| Residual, including asset changes [8/] | -0.4 | 0.3 | -1.5 | -1.2 | -1.2 | -1.3 | -1.3 | -1.4 | -1.4 | -7.8 | |




Source: IMF staff calculations.

1/ Public sector is defined as general government.

2/ Based on available data.

3/ Long-term bond spread over German bonds.

4/ Defined as interest payments divided by debt stock (excluding guarantees) at the end of previous year.

5/ Derived as $[(r - \pi(1+g) - g + ae(1+r)]/(1+g+\pi+g\pi))$ times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

6/ The real interest rate contribution is derived from the numerator in footnote 5 as $r - \pi(1+g)$ and the real growth contribution as $-g$.

7/ The exchange rate contribution is derived from the numerator in footnote 5 as $ae(1+r)$.

8/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

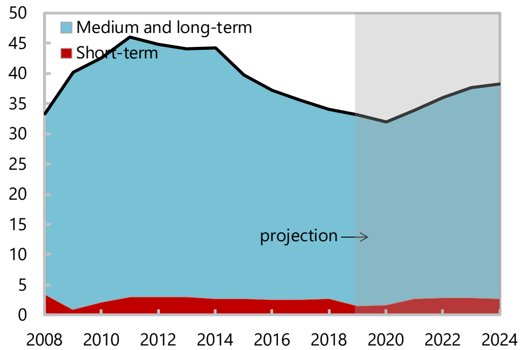
9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

## Denmark Public DSA - Composition of Public Debt and Alternative Scenarios

### Composition of Public Debt

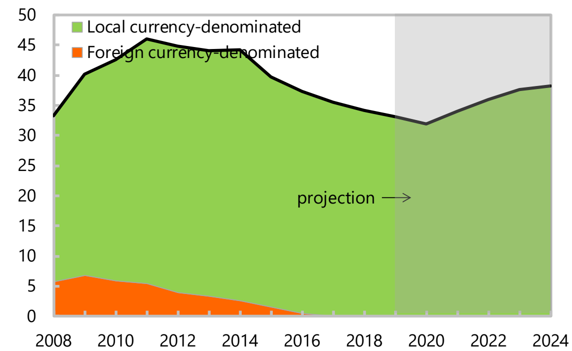
**By Maturity**

(in percent of GDP)




**By Currency**

(in percent of GDP)

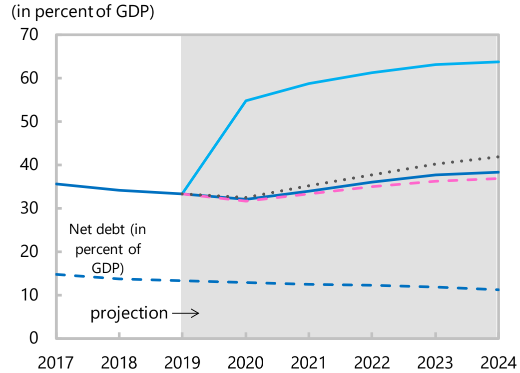



### Alternative Scenarios

Baseline
Historical
Constant Primary Balance
Contingent Liability Shock

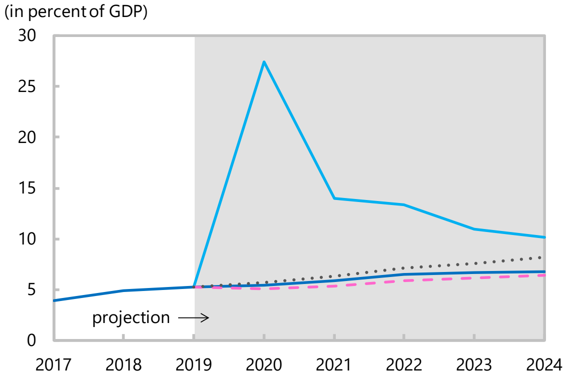
**Gross Nominal Public Debt**

(in percent of GDP)




**Public Gross Financing Needs**

(in percent of GDP)




### Underlying Assumptions

(in percent)

| **Baseline Scenario** | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Real GDP growth | 1.7 | 1.9 | 1.7 | 1.6 | 1.5 | 1.5 |
| Inflation | 1.6 | 1.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| Primary Balance | -0.1 | -0.4 | -0.4 | -0.5 | -0.4 | -0.1 |
| Effective interest rate | 3.9 | 2.5 | 3.2 | 3.1 | 3.2 | 3.3 |
| **Constant Primary Balance Scenario** | | | | | | |
| Real GDP growth | 1.7 | 1.9 | 1.7 | 1.6 | 1.5 | 1.5 |
| Inflation | 1.6 | 1.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| Primary Balance | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 |
| Effective interest rate | 3.9 | 2.5 | 3.3 | 3.1 | 3.2 | 3.4 |

| **Historical Scenario** | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Real GDP growth | 1.7 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Inflation | 1.6 | 1.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| Primary Balance | -0.1 | -0.6 | -0.6 | -0.6 | -0.6 | -0.6 |
| Effective interest rate | 3.9 | 2.5 | 3.5 | 3.6 | 3.9 | 4.2 |
| **Contingent Liability Shock** | | | | | | |
| Real GDP growth | 1.7 | -0.3 | -0.4 | 1.6 | 1.5 | 1.5 |
| Inflation | 1.6 | 1.2 | 1.5 | 2.3 | 2.4 | 2.4 |
| Primary Balance | -0.1 | -22.1 | -0.4 | -0.5 | -0.4 | -0.1 |
| Effective interest rate | 3.9 | 2.9 | 4.5 | 3.9 | 3.6 | 3.7 |

Source: IMF staff calculations.

# Annex VII. Risk Assessment Matrix[1]

(Potential Deviations from Baseline)

| Source of Risks and Relative Likelihood<br>(High, medium, or low) | Expected Impact if Risk is Realized<br>(High, medium, or low) | Policy Response |
|---|---|---|
| High<br>**1. Rising protectionism and retreat from multilateralism.** Escalating trade actions threatens the global trade system. | High<br>Rising trade tensions would have a negative impact on Denmark, being a small globally-integrated open economy with positive trade balance. A disorderly Brexit could cause market disruption with negative spillovers. | Contingent temporary fiscal loosening, while remaining anchored to the medium-term objective. Proceed with structural reforms to increase labor supply and reform product markets. |
| High<br>**2. Weaker-than-expected global growth.** Reflecting vulnerabilities in Euro Area, U.S. or China. Unsustainable macroeconomic policies or uncoordinated Brexit could be contributing factors. | Medium<br>Denmark's exports are tightly linked to the euro area markets, other Nordic countries, the U.S, and China. Slower growth in those economies for an extended period would weaken exports eventually impacting domestic demand and growth. | Allow automatic stabilizers to operate. If necessary, loosen fiscal policy while remaining anchored to the medium-term objective. Move ahead with structural reforms to increase labor supply and reform product markets. |
| Medium<br>**3. Failure to address macro-financial risks.** These include high household leverage amid elevated house valuations, the ongoing money laundering case, and close interlinkages across the Nordic financial system. | High<br>A housing boom/bust cycle would affect highly-indebted households, with severe knock-on effects on the broader economy. The ongoing money laundering case could further impact confidence in the financial sector. A marked reversal of high house prices in the Nordic region would adversely affect financial conditions, given close linkages of the regional banking system. | Continue vigilant financial surveillance and make use of available tools to discourage further build-up of housing debt. Address bottlenecks in rental market and zoning policies, especially in urban areas. Continue implementation of regulatory agenda to bolster banks' buffers. After the shock, support liquidity as needed. |
| Medium<br>**4. Tightening of domestic capacity constraints.** These could intensify wage pressures, potentially weakening competitiveness and medium-term growth prospects. | Medium<br>Labor shortages and capacity constraints could weigh on growth, accelerate wage and price inflation. | Tighten fiscal policy. Move ahead with structural reforms to increase labor supply and integration of migrants into the labor force. |
| Medium<br>**5. Sharp tightening of global financial conditions.** Could be triggered by a sharp increase in U.S. interest rates (prompted by higher-than-expected inflation) or a rise in risk premia | High<br>The prolonged period of low interest rates and stretched asset valuations could be disrupted by an abrupt change in risk appetite. Higher interest rates and tighter financial conditions would weigh on households and undermine consumption. | Reduce vulnerabilities of household and financial sectors by expanding macroprudential toolkit, with particular attention to lower-income groups. |

[1] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly. "Short term" and "medium term" are meant to indicate that the risk could materialize within one year and three years, respectively.

# Annex VIII. Authorities' Response to Past IMF Policy Recommendations

| Past Policy Recommendations | Authorities' Actions |
|---|---|
| **Fiscal Policy:** Draw on fiscal space to support growth-enhancing reforms, while remaining anchored to the medium-term objective. Incentivize private investment through corporate tax reforms. Increase public spending to improve broadband access in rural areas, strengthen digital skills, and upgrade public and transport infrastructure to boost productivity. Provide incentives to switch from social benefits to employment to support labor supply. | Structural reforms were supported by a loosening of the deficit in 2018. Public investment increased by 3.4 percent in 2018 and budget plans have prioritized a lift of public investment over the medium-term. Introduction of an allowance for corporate equity (ACE) is currently being considered by the government. A tax reform in February 2018 introduced a targeted earned income tax credit to low-income households. |
| **Housing Market:** Further tighten existing macroprudential measures to protect households form house price declines and higher interest rates, reduce further mortgage interest deductibility, lower rent controls and relax zoning restrictions to increase supply. | Loan-to-value limit remained at 95 percent. Mortgage interest deductibility has not been decreased further. Rent controls and zoning restrictions have not been addressed. |
| **Financial Sector:** Finalize the upgrade of the regulatory framework on NSFR and resolution planning for MCI's, strengthen the operational independence of the FSA and ensure adequate resources. Continue developing key indicators to assess systemic risk, possibly including macroprudential stress tests. If risks continue to rise, additional increases of the countercyclical buffer (CCyB) maybe warranted. | Resolution planning for MCI's has been finalized and their covered bonds will be treated as stable funding for the forthcoming NSFR. The budget of the FSA has been increased but remains subject to government discretion. Authorities continue to work on enhancing systemic risk indicators (including macroprudential stress tests). Early 2019, the SRC recommended to increase the CCyB to 1.5 |
| **Structural Reforms:** Higher labor participation could be achieved by reducing duration of student grants and unemployment benefits, and by intensifying integration programs for migrants. Deregulation in retail, taxi, and utility sectors would boost competition. Capital income tax reforms in the areas of dividend taxation, losses carried forward, R&D deductions, and business asset taxation would support investment. An allowance for corporate equity (ACE) would reduce disincentives to invest. | The taxi act has been revised but falls shorts on enabling competition through disruptive companies. A tax deduction was introduced for households investing in unlisted SMEs and R&D deductions will be gradually increased from 100 percent to 110 percent by 2026. Student grant and unemployment benefits continue to be generous. ACE has not been implemented either. However, it is under consideration. |

INTERNATIONAL MONETARY FUND

# DENMARK

## STAFF REPORT FOR THE 2019 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

June 6, 2019

Prepared by European Department (In Consultation with Other Departments)

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# FUND RELATIONS

As of April 30, 2019

**Membership Status:** Joined: March 30, 1946; Article VIII.

| **General Resources Account:** | **SDR Million** | **Percent Quota** |
|---|---|---|
| Quota | 3,439.40 | 100.00 |
| Fund holdings of currency (Exchange Rate) | 3,083.90 | 89.66 |
| Reserve Tranche Position | 355.51 | 10.34 |
| Lending to the Fund | | |
| New Arrangements to Borrow | 123.80 | |

| **SDR Department:** | **SDR Million** | **Percent Allocation** |
|---|---|---|
| Net cumulative allocation | 1,531.47 | 100.00 |
| Holdings | 1,421.61 | 92.83 |

**Outstanding Purchases and Loans:** None

**Latest Financial Arrangements:** None

**Projected Payments to Fund**[1]
**(SDR Million; based on existing use of resources and present holdings of SDRs):**

| | Forthcoming | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | 2023 |
| Principal | ... | ... | ... | ... | ... |
| Charges/Interest | 0.94 | 1.28 | 1.28 | 1.28 | 1.28 |
| **Total** | 0.94 | 1.28 | 1.28 | 1.28 | 1.28 |

[1] When a member has overdue financial obligations outstanding for more than three months, the amount of such arrears will be shown in this section.

**Exchange Arrangements:** Denmark participates in the European Exchange Rate Mechanism II (ERMII) with a central rate at DKr 746.038 per 100 euro. The standard width of the fluctuation band in ERM II is +/-15 percent. However, due to its high degree of convergence, Denmark has entered into an agreement with the European Central Bank (ECB) and the euro area member states on a narrower fluctuation band of +/- 2.25 percent. This means that the krone can only fluctuate between DKr 762.824 per 100 euro and DKr 729.252 per 100 euro.

Denmark has accepted the obligations of Article VIII, Sections 2(a), 3, and 4 and maintains an exchange system free of restrictions on payments and transfers for current international transactions, apart from those imposed solely for the preservation of national or international security, as notified to the Fund by the National Bank of Denmark in accordance with Executive Board Decision No. 144-(52/51).

**Article IV Consultation:** The last Article IV consultation was concluded by the Executive Board on June 20, 2018. The staff report (IMF Country Report No. 18/177) was published with Press Release No. 18/249 (June 21, 2018).

**Outreach:** The team met with representatives of the private sector, academics, labor and financial institutions.

**Press conference:** The mission held a press conference after the concluding meeting on May 13, 2019.

**Publication:** The staff report will be published.

**Technical Assistance:** None.

**Resident Representative:** None.

# STATISTICAL ISSUES

**Data Provision** is adequate for surveillance. The country has a full range of statistical publications, many of which are on the internet. The quality and timeliness of the economic database are generally very good. The country subscribes to the Fund's Special Data Dissemination Standard Plus. Metadata are posted on the Dissemination Standards Bulletin Board.

**National Accounts:** Denmark adopted the *European System of Accounts 2010 (ESA 2010)* in September 2014. Parallel to the transition to the new international guidelines, a revision of data and methods has been carried out as well, improving the quality of the statistics. Historical data were revised going back to the initial year of 1966.

**Government Finance Statistics:** Starting from September 2014, government finance statistics data is based on the *ESA 2010* methodology, which includes revisions of the general government deficit and debt levels from 1995 onwards. Revised data series was published in October 2014.

**External Statistics:** Starting in 2014, external sector statistics are compiled according to the *Balance of Payments and International Investment Position Manual, sixth edition (BPM6)* and in accordance with legal requirements of the ECB and Eurostat.

**Monetary and Financial Statistics:** Monetary data reported for International Financial Statistics are based on the European Central Bank's (ECB) framework for collecting, compiling, and reporting monetary data. The data are reported to STA through the ECB and largely accords to the *Monetary and Financial Statistics Manual and Compilation Guide (MFSMCG).* Data for Other Financial Corporations are currently not available.

**Financial Sector Surveillance**: Danmarks Nationalbank reports quarterly financial soundness indicators (FSIs) to the Fund, which are published on the IMF's FSI website. All core FSIs for deposit takers are reported on a quarterly basis. Many of the encouraged FSIs for deposit-takers and other sectors are provided.

Denmark reports some data and indicators of the Financial Access Survey (FAS), including the two indicators adopted by the UN to monitor Target 8.10 of the Sustainable Development Goals (SDGs).

**Table 1. Denmark: Common Indicators Required for Surveillance**
(As of May 17, 2019)

| | Date of latest observation | | Date received | Frequency of Data[7] | Frequency of Reporting[7] | Frequency of Publication[7] |
|---|---|---|---|---|---|---|
| Exchange Rates | 5/19 | | 5/19 | D | D | D |
| International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1] | 4/19 | | 5/19 | M | M | M |
| Reserve/Base Money | 4/19 | | 5/19 | M | M | M |
| Broad Money | 4/19 | | 5/19 | M | M | M |
| Central Bank Balance Sheet | 4/19 | | 5/19 | M | M | M |
| Consolidated Balance Sheet of the Banking System | 3/19 | | 5/19 | M | M | M |
| Interest Rates[2] | 5/19 | | 5/19 | D | D | D |
| Consumer Price Index | 4/19 | | 5/19 | M | M | M |
| Revenue, Expenditure, Balance and Composition of Financing[3]—General Government[4] | 2018 | | 2019 | A | A | A |
| Revenue, Expenditure, Balance, and Composition of Financing[3]—Central Government | Q42018 | | 4/2019 | Q | Q | Q |
| Stocks of Central Government and Central Government-Guaranteed Debt[5] | 2018 | | 2019 | A | A | A |
| External Current Account Balance[8] | 3/19 | | 4/19 | M | M | M |
| Exports and Imports of Goods and Services | 3/19 | | 4/19 | M | M | M |
| GDP/GNP | Q4 2018 | | 3/19 | Q | Q | Q |
| Gross External Debt | 12/18 | | 4/19 | Q | Q | Q |
| International Investment Position[6,8] | Q42018 | | 4/19 | Q | Q | Q |

1/ Any reserve assets that are pledged or otherwise encumbered should be specified separately. Also, data should comprise short-term liabilities linked to a foreign currency but settled by other means as well as the notional values of financial derivatives to pay and to receive foreign currency, including those linked to a foreign currency but settled by other means.
2/ Both market-based and officially-determined, including discount rates, money market rates, rates on treasury bills, notes and bonds.
3/ Foreign, domestic bank, and domestic nonbank financing.
4/ The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.
5/ Including currency and maturity composition.
6/ Includes external gross financial asset and liability positions vis-à-vis nonresidents.
7/ Daily (D), weekly (W), monthly (M), quarterly (Q), annual (A), irregular (I); and not available (NA).
8/Starting with data for 2014, external sector statistics are compiled according to the sixth edition of the *Balance of Payments and International Investment Position Manual* (*BPM6*) and in accordance with legal requirements of the ECB and Eurostat.

**Statement by the Staff Representative on Denmark**
**June 21, 2019**

This statement provides information that has become available since the issuance of the staff report. The information does not alter the thrust of the staff appraisal.

Parliamentary elections were held in Denmark on June 5, 2019, leading to a likely change in government. Ms. Mette Frederiksen, the leader of the main opposition party, the Social Democrats, has been appointed to lead the negotiations to form a new government. While in preparation of the Staff Report for the 2019 Article IV Consultation, staff held discussions with the outgoing government; at this stage, the information that has become available does not alter the thrust of the staff appraisal.

**Statement by Mr. Ostros, Executive Director,**
**and Mr. Gade, Advisor on Denmark**
**June 21, 2019**

On June 5, general elections took place in Denmark, resulting in a new parliamentary majority. Government formation negotiations are ongoing, and a new government's policy views are forthcoming. On behalf of the outgoing caretaker government and other Danish authorities, we would like to thank staff for candid and constructive policy discussions during the Article IV mission held in May. The authorities appreciate staff's high-quality report and analytical work on relevant issues.

## Outlook and risks

The Danish economy has been growing robustly for the past four years, where growth in GDP has averaged more than two percent per year. Employment has increased continuously since 2013 and has reached a high level. There is a solid foundation for the expansion to continue in 2019 and 2020, where domestic demand is expected to be the main growth driver.

Risks to the outlook are mainly to the downside. There is uncertainty surrounding the strength of the global economy, which is exacerbated by the ongoing trade conflict between the United States and China. At the same time, the future relations between the United Kingdom and the EU after Brexit are still unclear. A no-deal Brexit would affect the Danish economy more strongly than most other European countries.

The Danish economy is operating above normal capacity utilization. Monetary policy in the euro area remains extraordinarily expansionary and is expected to remain so for some time. This underscores the important role of other policies in supporting economic stability.

## Public Finances

For more than two decades, Danish fiscal policy has been conducted within a forward-looking medium-term fiscal framework. The associated plans contain operational targets for the medium-term structural fiscal balance and play an important role in ensuring long-term fiscal sustainability. The most recent update of the 2025-plan aims at structural fiscal balance in 2025.

For 2018 the structural fiscal balance is estimated to have been in balance at 0.0 percent of GDP. The structural fiscal balance includes an estimated structural contribution from the non-permanent North Sea revenues of 0.3 per cent of GDP in 2018.

The Budget Law was introduced in 2012 and took effect from the fiscal year of 2014. A key feature is expenditure ceilings, which set legally binding limits for expenditures in central government, municipalities, and regions respectively. The expenditure ceilings have, to date, put an end to the recurrent expenditure slippages, which were the Achilles heel of Danish fiscal outcomes for much of the 1990s and 2000s. The Budget Law also implements the European Fiscal Compact in Danish law, including a structural deficit limit of 0.5 percent of GDP, but also allowing for some flexibility in exceptional circumstances such as, e.g., a severe economic downturn.

The Budget Law will be evaluated in the parliamentary session that starts after the summer on the basis of, inter alia, comprehensive analyses of the experience with the Budget Law so far.

**Structural policies**

Wide-ranging reforms - of retirement and early retirement rules, the labor market, and taxes - have contributed significantly to the growing labor supply in recent years and will continue to do so in the coming years. This has mitigated the build-up of capacity pressures in the economy.

Whereas the isolated impact of fiscal policy initiatives from 2014 to 2018 has been broadly neutral for demand, the strengthening of the supply-side through reforms has helped to accommodate the growing demand and dampen the gradual build-up of capacity pressures.

Overall, the combined impact of fiscal and structural policies from 2014 to 2018 is estimated to have dampened capacity pressures to the tune of 0.8 per cent of GDP – helping to ensure that the estimated output gap is only moderately positive at around 1 percent currently.

**Financial sector issues**

The outgoing government and a broad majority in the Danish Parliament has been committed to strengthen the fight against money laundering and terror financing. The AML/CFT framework must be effective and the sanctions severe.

On March 27, 2019, a broad majority of the parties in the Danish Parliament agreed on a new political agreement, which contains 16 initiatives to strengthening the AML/CFT regulation and expanding the Danish Financial Supervisory Authority's (FSA) sanctioning powers.

With the March agreement, the FSA will have additional tools for control and intervention, among other things be able to levy administrative fine notices for non-compliance with the AML/CFT obligations. In addition, the FSA has had its budgetary resources increased significantly. The agreement's thrust is to make sure that there are tougher consequences when bank management fails its responsibility, and to ensure that the authorities have the resources and means to achieve an AML/CFT supervision in the European elite.

This agreement further builds on a political agreement from September 2018, in which a broad majority of parties in the Parliament agreed that Denmark, within the framework of the Danish EU opt-outs, will actively participate in the upcoming and ongoing international work (at EU level and at Nordic/Baltic level) to strengthen and increase cross-border cooperation in the fight against money laundering and terror financing.

As regards considerations on Danish participation in the Banking Union, a designated government committee was established in July 2017. The committee is expected to conclude its work with a final report to the Government in fall 2019.

**Monetary policy**

The authorities welcome staff's assessment that Danmarks Nationalbank should remain ready to defend the peg. Maintaining the peg to the euro is the exclusive policy objective and hence, monetary policy rates are adjusted solely to keep the krone stable against the euro. Other considerations - such as cyclical developments in Denmark - are not taken into account when setting monetary policy rates.

**External Sector Assessment**

The authorities agree that the current account surplus is high, although the surplus declined notably in 2018. A current account surplus is not a policy objective per se, but the result of individual decisions by households and corporations. The surplus partially reflects a high private sector savings surplus in Denmark through the build-up of labor market pensions. For many years, Denmark has had a focus on preparing for future demographic changes due to an aging population. To some extent, the surplus may also reflect deleveraging among households with high levels of debt. Finally, public finances are designed to be sustainable in the long run.