IMF Country Report No. 18/177

DENMARK

2018 ARTICLE IV CONSULTATION—PRESS RELEASE AND STAFF REPORT

June 2018

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 2018 Article IV consultation with Denmark, the following documents have been released and are included in this package:

- A **Press Release**.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on lapse of time basis following discussions that ended on May 16, 2018, 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 1, 2018.
- An **Informational Annex** prepared by the IMF staff.

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

Selected Issues

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

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INTERNATIONAL MONETARY FUND

COMMUNICATIONS DEPARTMENT

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June 21, 2018

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Washington, D.C. 20431 USA

IMF Executive Board Concludes 2018 Article IV Consultation with Denmark

On June 20, 2018 the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation with Denmark,[1] and considered and endorsed the staff appraisal without meeting.[2]

The Danish economy continues to enjoy solid growth and the output gap has seemingly closed for the first time since the global financial crisis. Unemployment is low and close to its estimated structural level with signs of labor shortages and capacity constraints in some sectors. Inflation remains subdued. Property prices in urban areas are rising swiftly and household debt remains elevated despite recent deleveraging. The increasingly binding constraints highlight Denmark's reduced growth potential, reflecting structurally weak productivity growth and the post-crisis investment slowdown. The banking system remains sound and profitable.

The outlook is for continued robust growth, which is projected to exceed its trend in the near-term, reaching 2.0 percent in 2018 and 1.9 in 2019. Activity is expected to be driven by strong and balanced private demand. Consumption and investment will be stimulated by low interest rates, employment gains and higher asset prices. Investment will also be supported by the need to offset domestic capacity constraints. Exports are projected to remain robust due to favorable external growth, while imports are expected be backed by stronger consumption. Inflation should gradually rise, as capacity pressures intensify in the near term.

The risks around these forecasts are broadly balanced. Stronger than expected consumption growth could lead to widespread labor shortages, potentially intensifying wage pressures, eroding competitiveness, and hindering medium-term growth prospects. Higher than expected foreign demand could aggravate wage pressures. Conversely, international trade tensions and significant tightening of financial conditions, due to uncertainty surrounding monetary policy normalization by major central banks, could restrain the upswing.

[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.

[2] The Executive Board takes decisions under its lapse of time procedure when it is agreed by the Board that a proposal can be considered without convening formal discussions.

Executive Board Assessment

The economy is performing well but potential growth remains weak. The output gap has seemingly closed and there are emerging signs of capacity constraints. Labor shortages and rising house prices coupled with elevated debt level are important domestic risks. External environment is favorable, but also involves risks. Benign macroeconomic environment provides conditions for renewing efforts aimed at raising potential growth and bolstering financial resilience.

Fiscal policy should draw on existing fiscal space to support growth-enhancing reforms, while remaining anchored on the medium-term objective. Fiscal space should be used to incentivize private investment through corporate tax reforms. Increasing growth-enhancing public spending to improve broadband access in rural areas, strengthen digital skills, and upgrade public and transport infrastructure—especially around inner-city areas experiencing strong house price growth—would help boost productivity and mitigate house prices pressures. Incentives to switch from social benefits to employment would support labor supply. However, a tighter fiscal stance may be called for in case of excessive demand pressures.

Monetary policy should focus on maintaining the peg. Lack of foreign exchange interventions is in contrast with past years and reflects the absence of currency pressures. A gradual reduction of Danish monetary policy spreads relative to the ECB would be desirable if market conditions permit.

House price pressures in urban areas coupled with elevated household debt call for coordinated policy action. Tightening of existing macroprudential measures would better protect families from house price declines and higher interest rates. Taking advantage of the current low interest rates, a further than envisaged reduction of mortgage interest rate deductibility should be considered. Reduction of rent controls and relaxation of zoning restrictions would encourage more housing supply and alleviate demand for housing.

Banks are well-capitalized and progress was made with upgrading the regulatory framework. Banks remain profitable notwithstanding low interest rates and modest aggregate credit growth. Additional increases of the countercyclical capital buffer may be warranted if risks continue building up. The operational independence of the DFSA should be strengthened and adequate resources should be ensured for continued effectiveness.

Employment rates continue rising on the back of past reforms, but there are untapped resources involving mainly young and migrants. Higher youth participation in the labor market could be achieved by reducing the duration of student grants and graduates' access to unemployment insurance. The integration of migrants could be facilitated by improving the accreditation of foreign degrees, relaxing restrictions on employment rules for refugees, lowering the minimum remuneration requirement, and granting more exceptions to the pay limit scheme for residency permits.

Incentivizing private investment to boost productivity is a key challenge. The investment slowdown since the crisis suppressed capital accumulation, weighing on labor productivity growth. Product market deregulation efforts in retail, taxi, and utility sectors would boost competition and encourage more investment. The ongoing digitalization initiatives are also important. Capital income tax reforms in the areas of dividend taxation, losses carried forward, R&D deductions, and business asset taxation would support investment by startups and high-technology firms. An allowance for corporate equity would more generally reduce disincentives to invest and reduce the debt bias.

The external position is stronger than implied by fundamentals. However, this assessment is subject to large uncertainties. In recent years the surplus is increasingly driven by offshore trading activities and investment income. While the EBA model does not identify policy gaps that explain most of the excess current account surplus, structural policies that raise investment would help reduce the surplus.

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

Denmark: Selected Economic and Social Indicators, 2013–18

	2014	2015	2016	2017 proj.	2018 proj.	2019 proj.
Supply and Demand (change in percent)						
Real GDP	1.6	1.6	2.0	2.2	2.0	1.9
Final domestic demand	1.6	1.7	2.4	1.9	2.1	2.1
Private consumption	0.9	1.6	2.1	1.5	2.2	2.5
Public consumption	1.9	1.1	0.3	1.2	0.5	0.3
Gross fixed investment	3.1	3.1	6.0	3.7	3.8	3.4
Net exports 1/	-0.2	0.4	-0.3	0.4	0.1	0.0
Gross national saving (percent of GDP)	29.0	28.7	28.3	28.9	29.3	29.4
Gross domestic investment (percent of GDP)	20.1	20.0	21.0	21.0	21.5	21.8
Potential output	1.0	1.5	1.5	1.6	1.7	1.8
Output gap (percent of potential output)	-0.8	-0.7	-0.3	0.4	0.6	0.8
Labor Market (change in percent) 2/						
Labor force	0.4	1.1	2.9	-1.3	0.5	0.6
Employment	0.9	1.5	2.9	-0.8	0.5	0.7
Harmonized unemployment rate (percent)	6.5	6.2	6.2	5.7	5.7	5.6
Prices and Costs (change in percent)						
GDP deflator	1.0	0.7	0.0	1.6	1.8	1.9
CPI (year average)	0.6	0.5	0.2	1.1	1.4	1.7
Public Finance (percent of GDP) 3/						
Total revenues	56.4	53.3	53.2	52.9	51.4	51.2
Total expenditures	55.2	54.8	53.6	51.9	52.2	51.8
Overall balance	1.1	-1.5	-0.4	1.0	-0.7	-0.5
Primary balance 4/	1.6	-0.7	0.1	1.2	-0.3	0.0
Cyclically-adjusted balance (percent of potential GDP)	1.8	-0.9	-0.2	0.7	-1.2	-1.1
Structural balance (percent of potential GDP) 5/	1.1	1.0	-0.1	0.2	0.1	0.2
Gross debt	44.3	39.9	37.9	35.5	34.9	34.1
Money and Interest Rates (percent)						
Domestic credit growth (end of year)	0.7	0.1	1.6	1.5	…	…
M3 growth (end of year)	12.6	12.1	-3.9	3.8	…	…
Short-term interbank interest rate (3 month)	0.3	-0.1	-0.1	-0.3	…	…
Government bond yield (10 year)	1.3	0.7	0.3	0.4	…	…
Balance of Payments (percent of GDP)						
Exports of goods & services	54.6	55.7	53.6	55.2	56.8	56.6
Imports of goods & services	47.7	48.4	47.4	48.2	49.8	49.9
Trade balance, goods and services	7.0	7.3	6.2	7.0	6.9	6.7
Oil trade balance	-0.1	-0.1	-0.2	-0.2	-0.4	-0.5
Current account	8.9	8.8	7.3	7.9	7.8	7.5
International reserves, changes	-2.1	-1.2	0.7	0.6	…	…
Exchange Rate						
Average DKK per US$ rate	5.6	6.7	6.7	6.6	…	…
Nominal effective rate (2010=100, ULC based)	99.6	96.5	97.6	98.7	…	…
Real effective rate (2010=100, ULC based)	96.5	93.7	95.4	97.1	…	…
Memorandum Items						
Nominal GDP (Bln DKK)	1981	2027	2066	2145	2228	2314
GDP (Bln USD)	353	301	307	325	…	…
GDP per capita (USD)	62729	53236	53774	56512	…	…

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.

INTERNATIONAL MONETARY FUND

DENMARK

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION

June 1, 2018

KEY ISSUES

Context: The economy is experiencing a steady upswing, with emerging signs of labor shortages and capacity constraints. The outlook is for continued robust growth with symmetric risks around the baseline projection. A combination of rising housing prices and high household debt leaves Denmark vulnerable to shocks. The current account surplus remains large. Banks are sound and profitable.

Policy recommendations: Economic policies should boost potential growth and enhance macro-financial stability, while remaining vigilant against signs of demand pressures. In particular:

- ***Fiscal policy***. The use of existing fiscal space to support growth-enhancing reforms while remaining anchored at a medium-term objective is appropriate. However, if growth is faster than envisaged, the authorities should be prepared to step in to counter excessive demand pressures.

- ***Macro-financial.*** Vulnerability risks stemming from high household leverage and rising house prices require coordinated policy actions, including enhancing the macroprudential toolbox, reducing overly favorable tax incentives, and relaxing housing supply restrictions.

- ***Labor market***. Building on the success of past policies, further action could help alleviate the inactivity trap of benefit recipients and low wage earners, foster greater participation of youth in the labor market, and better integrate migrants.

- ***Productivity and investment.*** Product market deregulation efforts should continue in certain sectors to boost competition and lift productivity. Addressing the debt-bias would help revive investment.

- ***Current account.*** The high surplus reflects income from foreign investment, expansion of corporates' operations abroad, high pension savings and low domestic investment. While staff analysis does not identify policies that explain most of the excess current account surplus, structural policies aimed at raising investment would help reduce the excess surplus.

Approved By
Mahmood Pradhan (EUR) and Zeine Zeidane (SPR)

Discussions took place in Copenhagen during May 3–16, 2018. The staff team comprised Messrs. Segoviano (head), Papageorgiou, Pillonca, Poghosyan (all EUR), and was assisted at HQ by T. Scutaru and N. Tenali (both EUR). Messrs. Klemm, Hebous (both FAD), and Hillier (LEG) overlapped with the mission. Mr. Gade (OED) participated in the discussions. The mission met with Messrs. Jensen and Callesen, Governors of Danmarks Nationalbank; Mr. Kieler, Deputy Permanent Secretary of Ministry of Finance; Mr. Berg, Head of the DFSA; Mr. Skaarup, Deputy Permanent Secretary of Ministry of Taxation; other senior officials; and representatives from the Danish Economic Council, the Public Employment Service, social partners, and the financial sector.

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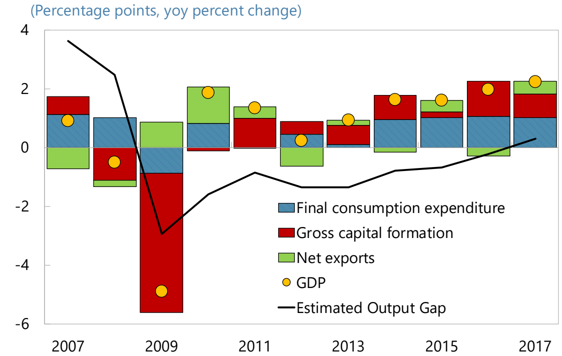
ANNEXES

RECENT DEVELOPMENTS

The Danish economy continues to enjoy solid growth and job creation. Inflation remains subdued and wage growth is aligned with productivity growth. The fiscal position continues to improve. House prices are still trending upward, with emerging signs of overvaluation in urban areas. Credit growth is modest, yet the level of household leverage and the current account surplus remain elevated.

1. **The Danish economy is on an upswing and the output gap has closed for the first time in a decade.** GDP growth in 2017 was 2.2 percent, higher than the average 1.3 percent rate recorded over 2010–15. Growth is broad-based, driven by private consumption and investment, supported by easy financial conditions, appreciating household assets (led by housing) and employment gains. The contribution from net exports was also positive, sustained by the rebound in global activity and the improved outlook of trading partners. Nevertheless, the external demand picture is slightly distorted by a one-off overseas payment for the use of a Danish-owned patent, which accounts for the bulk of the contribution from net exports. The output gap is estimated to have closed in 2017.

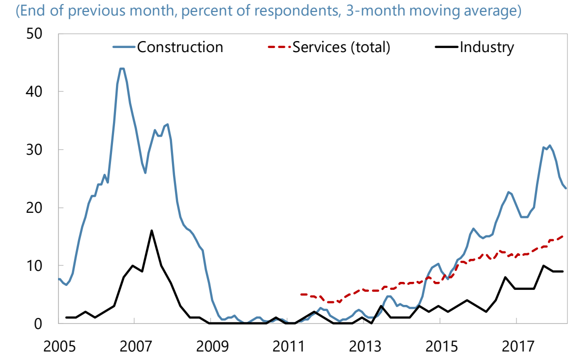
Contributions to Real Growth and Output Gap
(Percentage points, yoy percent change)



Sources: Statistics Denmark and Fund staff calculations.

2. **The labor market has recovered in line with the upswing and shortages have appeared in some sectors.** Employment and participation rates continue to rise reflecting past pension and labor market reforms and the gradual integration of migrants (Figure 2). The employment rate has risen from its 2014 lows to close to 75 percent, while the unemployment rate has declined to its lowest post-crisis level (around 5 percent). The labor force expanded to 80 percent of the working-age population, with gains since 2013 roughly evenly split among people 60+ years old, foreigners employed in high-skilled jobs, and refugees and migrants (see survey). Labor shortages are rising and are being increasingly reported as a limitation to production, particularly in services and cyclical sectors, such as construction. Job vacancies have continued their upward trend and wage growth is aligned with productivity growth, albeit subdued.

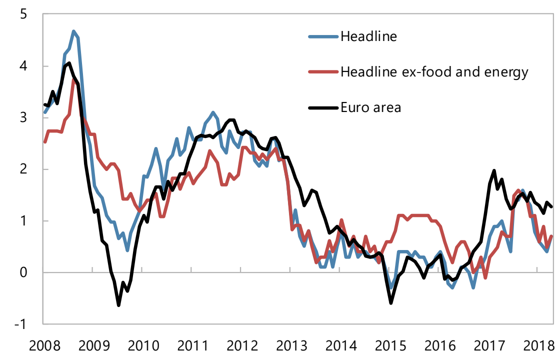
Labor Force Shortages
(End of previous month, percent of respondents, 3-month moving average)



Source: Statistics Denmark (Business Tendency Survey).

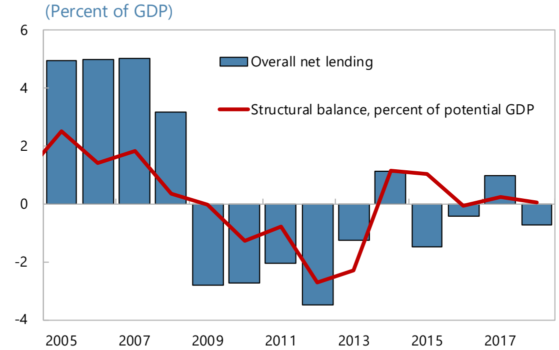
3. Inflation remains subdued despite the economic rebound. In 2017, average inflation edged to 1.1 percent after hovering near zero for much of 2016. In March 2018, harmonized headline inflation (HICP) declined to 0.5 percent, accentuated by base effects, some of which are temporary (for instance the decline of energy-related inflation rates). This pattern of weak inflation over the past year reflects limited domestic pressures in an environment of declining (but still available) spare capacity and low inflation globally. Subdued inflation rates span across the major HICP components, with few exceptions. Notably, services inflation has been the highest running major subcomponent of the HICP basket, having averaged over 2 percent in the last six months. However, goods inflation remained stuck in negative territory (-0.7 percent yoy) and imported inflation is currently negative, partly because of krone appreciation over the last year (by about 3 percent on an effective basis). Past labor market and pension reforms are resulting in an expansion of labor supply, alleviating wage and inflation pressures.

Harmonized Inflation Rate
(Percent, yoy, sa)



4. The fiscal position continues improving and public debt remains sustainable. The headline fiscal balance is estimated to have increased to 1.0 percent of GDP in 2017, driven by stronger than expected cyclical revenues and buoyant pension yield tax. Lower than expected public consumption also contributed to the improved balance. The structural balance is projected to decrease from 0.2 to 0.1 percent of potential GDP between 2017–18. The projected fiscal deficit is driven by a one-off payment of early retirement contributions as part of the June 2017 agreement on more years in the labor market and rebound in public spending relative to 2017.[1] The public debt stock is estimated at 35.5 percent of GDP in 2017—well below the Stability and Growth Pact (SGP) benchmark.

General Government Balance
(Percent of GDP)



Sources: IMF World Economic Outlook and Fund staff calculations.

5. Property prices continue rising with emerging signs of overvaluation in urban areas. Property prices have been rising steadily across Denmark, averaging 4.6 percent in the first three quarters of 2017, and continuing to run well above inflation. Recent analysis suggests that house valuations for Denmark as a whole are consistent with fundamental factors including, supply conditions, demographics, disposable incomes, and mortgage interest rates.[2] However, prices for

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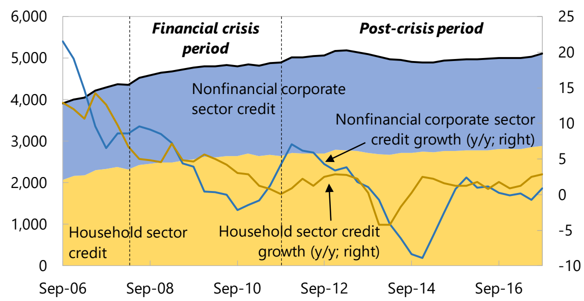
[1] Members of the early retirement schemes will be allowed to withdraw their contributions tax free in exchange for staying longer in the labor market.

[2] See IMF WP forthcoming 2018, EC Nordic Housing Note, and DN (2017).

flats and houses in large urban areas, where households with total debt above four times their income tend to be more common, have risen considerably faster than the national average. Notably, average property prices in Copenhagen have risen by almost 11 percent in the first three quarters of 2017, and property prices in cities tend to be either close to (Aarhus) or even exceed (Copenhagen) their pre-crisis peaks (Figure 4). As a result, valuations in major urban areas appear to be more stretched, particularly in segments where demand is especially strong (e.g., apartments).

6. Credit growth is subdued, yet household debt is high. Nominal private sector credit grew by 2 percent in 2017, marginally higher than in the previous two years. Credit to households grew by 3 percent on the year to rise to 136 percent of GDP, and nonfinancial corporate credit rose by 1 percent in 2017 to 104 percent of GDP. The ratio of household debt to disposable income at 272 percent has fallen from its 2010 peak, but it remains the highest in the OECD.

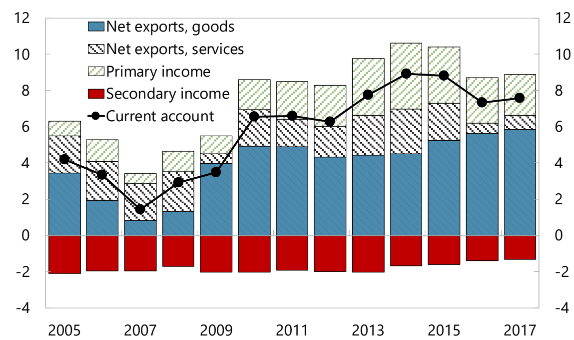
Private Sector Credit
(DKK, billion; and percent on right axis)



Source: Danmarks Nationalbank.
Note: Includes credit from banks and mortgage credit institutions, accounts payable and securities other than shares.

7. The current account surplus remains large. Denmark's external sector surplus (7.6 percent of GDP) is driven by strong net exports and a robust primary income. Denmark's recent high surpluses have been impacted by exports of goods produced abroad and investment income reflecting Danish firms' increasing overseas activities and integration in global value chains. The surplus also mirrors growing private sector savings and slowdown of domestic investment since the global crisis. Staff assess the external position to be stronger than implied by medium-term fundamentals (see Annex I). Nevertheless, this assessment is subject to important uncertainties.

External Balance
(Percent of GDP)



Source: Statistics Denmark.

OUTLOOK AND RISKS

8. The baseline outlook remains strong and the current account surplus should gradually decline. Growth is projected to hover around 2 percent in 2018–19, before gradually decelerating to its estimated potential rate in the medium-term. As the economy is projected to grow at above potential rates in the near term and unemployment to remain low, inflation and wages are set to gradually rise further. Activity is expected to be supported by a balanced demand composition. Private consumption is projected to remain strong in the near term, on the back of employment gains from earlier labor market and pension reforms, business confidence due to easy financial conditions, a strong housing market and a temporary fiscal relaxation.[3] Investment is projected to rebound from relatively low levels, supported by favorable interest rates and the need to offset pressing domestic capacity constraints. Exports are projected to remain robust on the back of stronger external demand due to the improving outlook of Denmark's main trading partners, but the contribution of net exports to growth is expected to stay neutral, as stronger consumption is expected to boost imports. Together with a gradual decline of household savings due to aging, these factors should put the current account surplus on a downward path. A debt sustainability analysis points to a gradually declining public debt ratio over the medium term (Annex III).

9. Risks around the outlook are broadly balanced. Upside pressures on aggregate demand could stem from consumption that has lagged the upswing but might overshoot in the presence of buoyant financial conditions and increasing asset prices. Stronger than expected global growth could underpin demand for Danish goods, possibly aggravating demand pressures. Widespread labor shortages and capacity constraints could intensify wage pressures, potentially weakening competitiveness and hindering medium-term growth prospects. Conversely, uncertainty surrounding developments in Denmark's main trading partners—including Brexit and global trade disruptions and protectionist tendencies-could weigh on the outlook. Also, faster than anticipated normalization of monetary policy by major central banks could excessively tighten financial conditions, with possible adverse effects on aggregate demand and property prices.

10. Continued increases in high house prices combined with high gross household debt could raise macro-financial vulnerabilities over time. Highly-levered households may restrain consumption further—from the historically low current levels—in the event of house price and interest rate shocks. This includes some low-income households that are already overburdened by large mortgage payments. Given the high integration of the Nordic financial system, shocks originating in Nordic countries could impact Denmark through exposures of Danish intermediaries in the region and through constrained financing in Denmark from regional entities.

Authorities' Views

11. The authorities broadly concurred with staff's assessment of the outlook and risks. They expect the economic expansion to continue and agreed that the output gap has seemingly closed. The authorities observed that capacity constraints are becoming more binding, weighing on growth. The authorities viewed the risks to the outlook to be broadly balanced, with downside risks from sudden increases in interest rates and international trade tensions, but also upside risks from more buoyant household and corporate spending behavior. They broadly shared staff's concerns about household vulnerabilities due to rising house prices and elevated leverage. The authorities agreed the current account surplus remains high, but considered it as temporary and did not see major imbalances in the economy or distortions from policies.

[3] This includes the reimbursement of early retirement contributions in 2018 and the refund of excessive property taxes in 2019–20.

POLICIES FOR SUSTAINED GROWTH

Policies need to boost growth and enhance macro-financial stability, while remaining vigilant against signs of demand pressures. The economic upswing and considerable fiscal space create favorable conditions to move forward with capacity-enhancing reforms. These include targeted initiatives to boost productivity, investment, and labor supply. Macro-financial vulnerabilities should be tackled through tightening macroprudential tools, combined with tax and housing supply policies.

A. Macroeconomic Policies

Fiscal Policy

12. Fiscal consolidation is set to continue despite temporary disbursements to accommodate reforms. With the 2017 headline surplus at 1.0 percent of GDP, the authorities have made faster than envisaged progress with consolidation, reflecting stronger than expected revenues and under-spending at the state level. Government spending is projected to accelerate in 2018 driven by low base effects. The 2018–2020 fiscal deficits will be pushed up to accommodate reform costs, such as tax-free withdrawal of early retirement contributions and payback of property taxes during transition to the new real estate valuation system. Additional reforms envisaging cuts in personal income taxes with the intention of boosting labor supply were diluted during the 2018 budget discussions. In the near term, the structural deficit is projected to comply with SGP rules and stay within limits of Denmark's own budget law (½ percent of GDP). The authorities plan on continuing gradual fiscal consolidation with the objective of reaching a balanced budget in the medium-term.

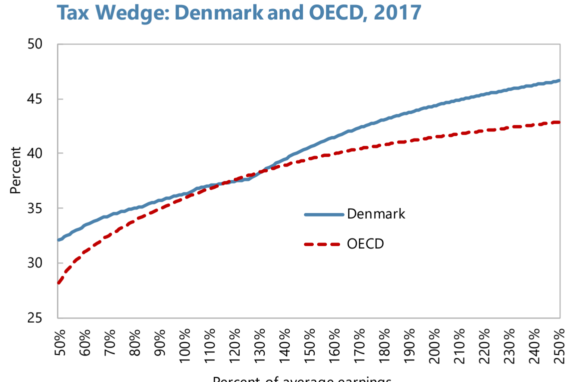
Key Indicators for the General Government

(Percent of GDP unless otherwise noted)	2016	2017	2018	2019
Net lending	-0.4	1.0	-0.7	-0.5
Cyclical contribution	-0.2	0.3	0.5	0.6
One-offs and beyond-the-cycle corrections	-0.1	0.5	-1.3	-1.3
Structural balance*	-0.1	0.2	0.1	0.2
Change in structural balance	*-1.0*	*0.3*	*-0.2*	*0.1*
Memo items				
Authorities' estimate of the structural balance*	0.0	-0.1	-0.2	-0.1
Output gap (percent of potential GDP)	-0.9	-0.2	0.4	0.8
Gross public debt	37.9	35.5	34.9	34.1

Source: IMF Staff calculations.
*Percent of potential GDP.

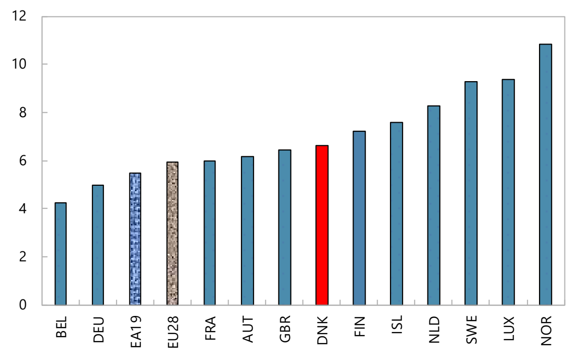
13. Staff advised using the fiscal space to pursue growth-friendly policies. Boosting potential output requires further progress on structural reforms "while the sun is shining," which may require fiscal accommodation. Therefore, while fiscal policy should remain anchored on the medium-term objective, the existing fiscal space available due to the low level of debt and prudent policies should be used to facilitate structural reforms. Increasing growth-enhancing public spending to upgrade infrastructure, improve broadband access in rural areas, and strengthen digital skills to reap the benefits from advances in artificial intelligence and automation, would support medium-term growth and contribute to the reduction of the current account surplus. On the revenue side, reduction of distortionary labor taxation would help boost labor supply and changes in corporate taxation could foster private investment (see IMF report). At the same time, the government should be prepared to arrest excessive demand pressures if needed. Built-in automatic stabilizers and gradual improvements in the underlying fiscal position driven by past labor market and pension reforms should be the first line of defense.

Tax Wedge: Denmark and OECD, 2017



Source: OECD.

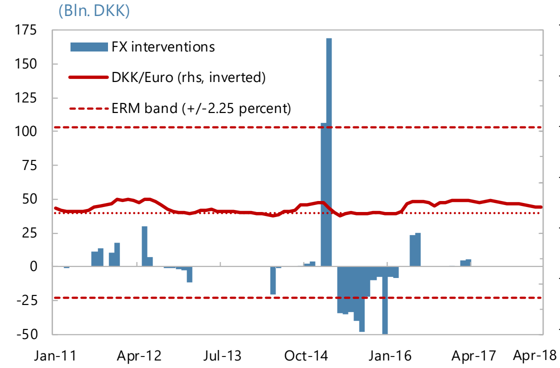
Gross Fixed Capital Formation, 2017
(Percent of general government total spending)



Monetary Policy

14. Monetary conditions remain accommodative. The krone has been broadly stable against the euro, edging above central parity in recent months, but continuing to oscillate within a narrow range, and requiring no significant FX markets intervention since 2016:Q2. This lack of intervention is in contrast with previous years, when the central bank intervened more frequently to stabilize the currency, and reflects the absence of currency pressures.

FX interventions and the Exchange Rate
(Bln. DKK)



Sources: Haver Analytics and Fund staff calculations.

15. The central bank should remain ready to defend the peg and continue to normalize rates as conditions allow. The leading spread between Danmarks Nationalbank (DN) and ECB's policy rate has remained unchanged at -0.25 percent since March 2016, while the negative differential between money market interest rates in Denmark and the euro area has widened slightly. US interest rates are expected to rise further vis-à-vis euro rates, which could weigh against the euro and the krone in the short-term. A gradual reduction of Danish monetary policy spreads relative to the ECB should continue as market conditions permit.

Authorities' Views

16. The authorities highlighted complications with the use of fiscal instruments to smooth output fluctuations and argued that structural reforms would not warrant short-term fiscal easing. Legislative and implementation lags constrain the effectiveness of discretionary fiscal policy as a demand management tool, if needed on top of the already strong automatic stabilizers in the economy. Expenditure rules cover large part of the budget, with discretionary expenditure limited to capital spending and active labor market policies. The conservative expenditure growth embedded in the medium-term budget plan should help dampen demand pressures in coming years, but further fiscal tightening or other measures could be needed, if overheating risks materialize. The authorities viewed that using fiscal space through a temporary fiscal expansion to incentivize structural reforms and investment would be procyclical at the current juncture. They also found that structural reforms do not require fiscal easing and some reforms could be implemented through changes in regulation. Nevertheless, many reforms were already enacted and the sustainable fiscal position and strong employment performance seemingly reduce the appetite for major reforms. The authorities reiterated that the exclusive objective of monetary policy is to maintain the peg.

B. Financial Sector and Macro-Financial Policies

Financial Sector Policies

17. The financial system is robust and signs of increased risk-taking have emerged. Despite slow credit growth and low interest margins, credit institutions maintained strong profitability, including via greater fee income (see Table 7 and Figure 3).[4] Systemwide nonperforming loans are low, although arrears for medium-sized banks are considerably higher than for Systemically Important Financial Institutions (SIFIs). Liquidity requirements, such as the liquidity coverage ratio, are comfortably met, with a proposal for treating mortgage credit institutions' (MCIs) covered bonds as stable funding for purposes of the Net Stable Funding Ratio (NSFR) under negotiation.[5] Lending surveys suggest rising appetite from medium-sized banks to relax credit standards (Figure 4). If this easing bias were to persist, it may encourage excessive risk-taking at a time of elevated financial and real asset prices. Banks are adequately capitalized, but in early 2018 the Danish Financial Supervisory Authority (DFSA) issued a public warning against excessively low IRB risk weights for mortgages in high growth areas. Recent stress tests by the central bank reveal the potential for a capital shortfall

[4] Recognition of expected credit losses under IFRS 9 rules is expected to increase accumulated loan impairment charges (DN, 2017), thus possibly having a negative impact on core earnings.

[5] The benchmark for liquidity supervision in the Supervisory Diamond for Banks was revised to observe liquidity conditions for three months.

for some SIFIs (DN, 2017).[6] The pension and insurance firms have adjusted their business models to the low interest rates by promoting more market-based products over guaranteed-return products.

18. Additional capital and resolution buffer requirements are set to take effect in the next few years. The government approved the activation of the countercyclical capital buffer to ½ percent of risk-weighted assets from March 2019. While this capital surcharge is not currently binding given banks' high capital levels, it signals an intention to guard against financial vulnerabilities.[7] Implementation of the Basel III minimum risk weights is estimated to increase capital requirements for Danish SIFIs by DKK 78 bn (almost 5 percent of total risk-weighted assets) or 34 percent higher than the previously-planned fully-loaded capital (expert report by the Ministry of Industry, Business and Financial Affairs). The DFSA completed the final stage of the Banking Recovery and Resolution Directive (BRRD), by setting minimum requirements for own funds and eligible liabilities (MREL) and the resolution strategy for all financial institutions from July 1, 2019. Single-point of entry resolution for SIFI groups was granted, but MCIs continue to be exempt from the bail-in central resolution tool and MREL. Instead, SIFIs are subject to a debt buffer requirement in line with the Single Resolution Board's recommendation for a minimum 8 percent of Total Liabilities and Own Funds (TLOF).[8] An outstanding item is to finalize the debt buffer requirement and resolution strategies for Nykredit, the largest mortgage lender, and DLR Kredit.[9] Following an FSAP recommendation, the DFSA is establishing an independent audit function. A new Memorandum of Understanding with Nordic counterparts was signed in February 2018 to lay out coordination and cooperation principles for the exchange of information on resolution issues.

19. Staff recommended further policies to strengthen the financial system. The treatment of mortgage covered bonds for the definition of the NSFR should be consistent with long-term funding stability, irrespective of market access. The authorities should continue the dialogue regarding the debt buffer for MCIs to ensure the credibility and feasibility of resolution plans. In line with earlier FSAP advice on strengthening the independence of the DFSA, the regulator's budget should not be subject to central government cuts. Adequate budget should be available to ensure the DFSA's continued effectiveness. Similarly, lengthening the term of its board members can help maintain policy continuity. Staff supports the Systemic Risk Council's broad information approach to assess systemic risk and set the countercyclical capital buffer. If risks continue to build up, additional increases of the countercyclical capital buffer would be important to enhance financial resilience. Staff recommended to continue developing key indicators to assess systemic risk, possibly including

[6] The stress tests are conducted under a severe three-year recession scenario with 5 percent output contraction and nearly 20 percent property price decline (see DN, 2017).

[7] The government noted that if the Systemic Risk Council recommends another increase in the buffer it will evaluate developments again, taking into consideration, among other things, credit growth.

[8] Under TLOF the sum of MREL, capital requirements, and the debt buffer must be at least 8 percent of total lending.

[9] The DN has expressed concerns about the lack of risk-sensitivity of the debt buffer in that it may be inadequate during resolution, and has recommended that MCIs are comprised by the same rules on resolution as other institutions. The DFSA deems the current resolution framework as tested and suitable to deal with systemic risks and arrest the spread of spillovers to the rest of the financial system, given the bail-in structure of the debt buffer and the national insolvency procedure.

macroprudential stress tests to quantify losses due to systemic risk amplification owing to cross-sectoral and/or regional contagion.

Authorities' Views

20. The authorities deem the financial system profitable and resilient to shocks. They expect credit institutions to meet capital requirements under Basel III rules and maintain adequate funding. The government agreed on the importance of maintaining strong bank supervision but did not see the need for lengthening the term of DFSA board membership. The authorities conducted a review of the MOUs with Nordic-Baltic counterparts, which they believe should promote effective oversight of systemic banking groups in the region.

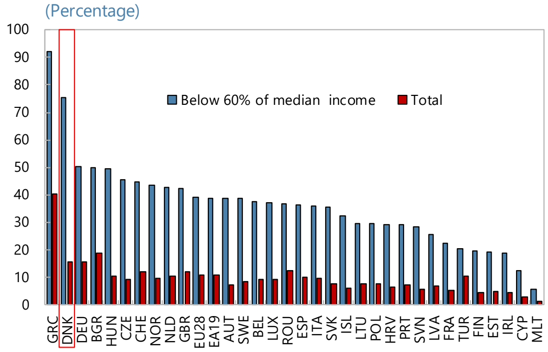
Macro-financial Policies

21. The adverse feedback loops between housing and the real economy in Denmark are important. The centrality of housing in the Danish economy reflects at least three aspects. First, housing is a major asset of Danish households, together with pensions. Second, MCIs issue covered bonds to fund the mortgages provided to households, transferring part of mortgage risks to investors, mainly financial institutions, including pension funds and insurance companies (Figure 4). Third, because of the high real estate valuations and low interest rates, house purchases typically need to be funded via large mortgage multiples relative to disposable income. These factors help to explain why Danish households' debt to income ratios are among the highest among advanced economies, and why consumption is sensitive to house price developments.

22. High household leverage combined with high and rising house prices could raise macro-financial vulnerabilities. There is a risk that high and still rising house prices (particularly in urban areas), the relaxation of credit standards (Figure 4), and mortgage rates near all time-lows, may increase the perception of affordability across a broad spectrum of income levels. In this environment, two types of Danish households are particularly vulnerable to shocks. First, low-income households who spend more than 40 percent of their disposable income on housing (Figure 4). Second, households who have purchased in highly appreciating and potentially overvalued urban areas such as Copenhagen (Selected Issues), where LTI ratios and credit growth are noticeably higher than in the rest of the country. These vulnerabilities are compounded by the large proportion of variable-rate and interest-only mortgages in the system.

Housing Cost Overburden by Income Group, 2016 1/

(Percentage)

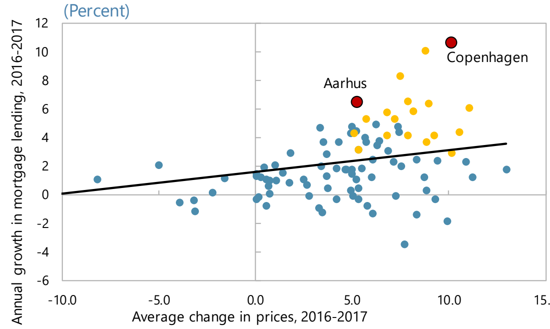


1/ 2017 data for BGR, DNK, LVA, HUN, and ROU; 2015 data for TUR.

Source: Eurostat.

Apartments and Houses 1/

(Percent)



1/ Weighted average for Copenhagen and Aarhus, simple average for all. Yellow dots denote Capital region.

Sources: Danmarks Nationalbank, Finans Danmark and Fund staff calculations.

23. In recent years, authorities have implemented an extensive package of policies to address rising vulnerabilities. These include diverse macroprudential policies,[10] various supervisory guidance for MCIs and banks, and a reform of property taxation (Denmark 2017 Article IV report). The authorities continued building their macroprudential toolbox. Following the March 2017 Systemic Risk Council's recommendation to limit lending via interest-only and floating-rate mortgages to high DTI households in areas with rapid housing prices growth, authorities introduced LTV restrictions. Effective from 2018, changes to consumer protection rules limit lending via interest-only and floating-rate mortgages to highly indebted households. Specifically, there are lending restrictions for households with DTI greater than 4 times and LTV greater than 60 percent: (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.

24. Coordinated policies are needed to tackle macro-financial vulnerabilities, including those stemming from excessive household leverage combined with rising house prices and affordability. Staff recognized authorities' efforts and advocated continuing with the deployment of policies as follows.

- **Macroprudential instruments.** The existing macroprudential measures should be tightened further. Staff analysis suggests that the LTV limit should be lowered from 95 to 90 percent to better protect households from house price declines. This decrease would lower aggregate consumption by about 1.5 percentage points one year after introduction, but increase it by 0.2 percentage points in a new steady-state because of lower debt-servicing costs (Denmark 2016 Article IV, Selected Issues). Thus, tightening the LTV limit would have a positive spillover by alleviating demand pressures in the near-term. DTI restrictions should be strengthened for all loans irrespective of LTV considerations. Tighter DTI limits for interest-only and adjustable-rate mortgages should also be considered to contain leverage, increase resilience, and limit the drag on consumption. Highly-leveraged households—with debt-to-income above 400 percent—should be subject to mandatory

[10] Selected Issues Chapter "Danish Households, Asset Prices, and Interest Rate Shocks."

amortization.[11] To encourage further reduction of interest-rate sensitivity, the DTI limit could be calibrated to account for lower risk if financing is via fixed–rate mortgages.

- **Tax policy.** Mortgage interest deductibility (MID) should be reduced further than currently planned, as MID distorts investment incentives and incentivizes leverage (Gruber, 2017). During the transition period to a lower mortgage deductibility regime, the current low rate environment would mitigate the adverse impact on homeowners. Also, fiscal savings from this measure could be used to reduce labor tax burden.

- **Housing supply.** Restrictions on the size of new apartments should be relaxed in urban areas where demand-supply imbalances appear to have been a factor pushing valuations higher. Simpler and more streamlined zoning and planning processes would allow housing supply to respond to increases in demand without steep price increases. Rent controls are among the highest in the EU and should be reduced to incentivize the rental market and alleviate demand for housing. Below-market rents limit the incentive to supply rental units, and incentivize the purchase of housing, adding upward pressure to property prices. Upgrading public and transport infrastructure—especially around inner-city areas experiencing strong house price growth—would help mitigate house prices pressures.

Authorities' Views

25. The interaction between high household leverage and rising house prices poses macro-financial risks. Authorities indicated that household resilience to interest rate increases likely improved as more homeowners had shifted towards fixed rate mortgages and longer fixing periods. But if risks continue to build up, the DN sees scope for tighter LTV limit, higher countercyclical capital buffer, amortization requirements and reduction of variable-rate loans. The government argued that additional measures would require further analysis of the effects on the housing market and the overall economy. The government considers unlikely that mortgage interest deductibility will be reduced beyond the planned gradual decline ending next year, and noted that mortgage interest deductibility should take into account balances towards other capital taxation rates.

C. Structural Policies

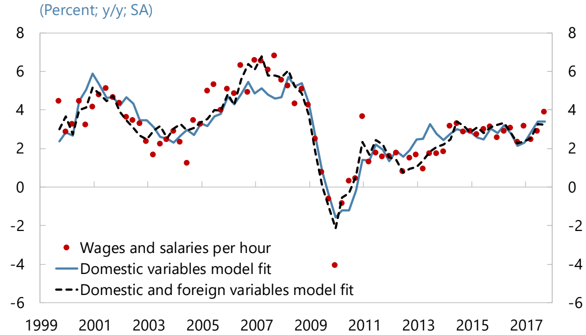
Labor Market

26. The labor market continues to improve and wage flexibility facilitates labor allocation. Supported by strong economic activity and recent reforms, employment and labor force participation rates have increased, while unemployment dropped (Figure 2). The wage formation is responsive to domestic and external conditions, and wage growth is in line with long- and short-

[11] Selected Issues Chapter "Danish Households, Asset Prices, and Interest Rate Shocks."

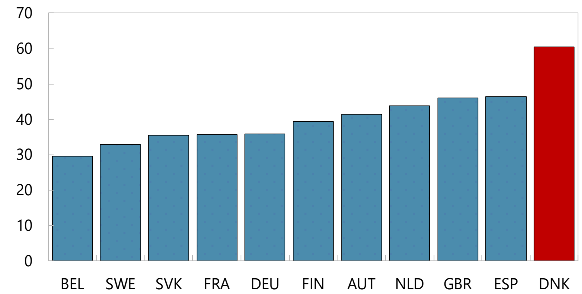
term determinants (Annex II).[12] Denmark's flexible sectoral wage setting provides greater efficiency gains in labor allocation compared to other economies.

Danish Nominal Wage Growth and Model Fits 1/
(Percent; y/y; SA)



Sources: Statistics Denmark; Eurostat; IMF WEO; and Fund staff calculations.
1/ Total economy wages and salaries. See Appendix I for details.

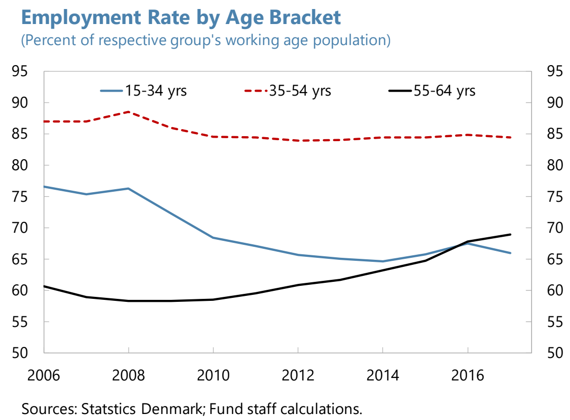
Sectoral Wage Differentiation 1/
(Percent; 1995-2017)

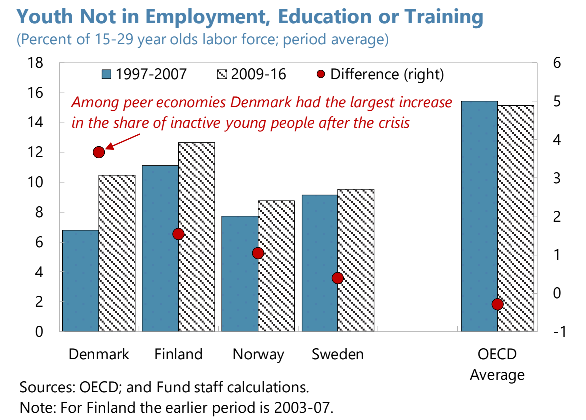


Sources: Eurostat; and Fund staff calculations.
1/ Standard deviation of the sectoral average wage in share of the national average wage across sectors.

27. Labor market initiatives are ongoing, but there are a few untapped labor resources. Increasing labor supply and reducing the propensity for transfers are critical for long-term sustainability of the Danish system. Earlier reforms include Phase I of *JobReform*, a job-premium program for the long-term unemployed, basic education, training, skill-upgrading and other active labor market policies. A more recent reform to lower taxes on labor income and increase deductions for pension contributions was introduced in February 2018, and will be fully in effect by 2020. All these have sought to increase youth labor participation, keep people in employment longer by incentivizing later retirement, incentivize benefits recipients to work and avoid inactivity traps, help more people obtain the skills to enter the workforce, and improve migrant integration. Given the already large and planned increase in the employment rate of older workers following the 2011 pension reform, there are few remaining pools for gains which involve young and migrants. The increase in youth inactivity since the crisis, demonstrates the difficulty of entering the labor market without high-level qualifications. Efforts to integrate existing migrants already in the country seem to be yielding favorable outcomes (such as the basic integration education (IGU) program), but unemployment rates for foreign-born people are 2 to 3 times higher than for native-born people (Figure 2). The high level of qualification needed to enter the Danish labor market and the relatively high minimum wage eliminate the option of "working poor" and limit the supply of low-skilled jobs thereby restraining migrants' chances to integrate (Andersen, 2017).

[12] The recent 3-year public sector wage agreement resulted in a nominal wage increase of 8.1 percent.





28. Participation rates of the young and migrants can be increased further. Reducing taxes on labor by increasing the ceiling for the tax brackets of low- (up to around DKK 50,000/year) and middle-income (up to around DKK 520,000/year) groups can help reduce the inactivity trap by incentivizing greater labor participation. Greater vocational and education training (VET) opportunities (such as under the recent tripartite agreement) can support the reduction in youth inactivity and give young people better chances of entering the workforce. The 2 percent annual reduction of the VET budget could be reconsidered to intensify education efforts. Denmark's commitment to digitalization should include improved access to digital skills. Staff welcomed the launch of the *Technology Pact*. This should bring educational institutions and private sector together to ensure that education will reflect future demand of technical and digital needs. Programs focusing on skills upgrading would help the labor force to benefit from technological advances. More efficient use of transfers to incentivize earlier and higher youth participation in the labor market should continue to be deployed, for instance by reducing the duration of student grants and graduates' access to unemployment insurance. Education and accreditation of foreign degrees are crucial in raising the likelihood of migrants being employed. Staff recommend to renew the IGU program which is set to lapse in 2019 upon review. Removing restrictions on employment rules for asylum seekers and allowing them to participate into activation programs as early as possible would support faster integration. Efforts to improve integration of female refugees should intensify to mitigate the gender gap.[13] The government's labor participation incentive plan for refugees is welcome. This would allow them to transition from the integration benefit to social assistance by completing 2½ years of employment in the last 10 years. Greater flexibility is needed to attract new migrants to Denmark and overcome labor supply constraints, for instance by lowering the minimum remuneration requirement (DKK 417,794/year) or granting more exceptions to the pay limit scheme for residency permits under the positive list scheme.

[13] According to the latest data, employment rate of male refugees is about 45 percent, while employment rate of female refugees is only about 13 percent.

Authorities' Views

29. Raising labor supply further remains a priority for the authorities. The government continues to see scope for incentivizing later retirement. Ongoing work aims at underpinning the labor participation of young people and deterring the formation of long-term unemployed. Programs for refugee integration are providing encouraging signals, but lagging employment of female refugees behind their male counterparts remains a concern. The government considers policies to shrink the gender gap important.

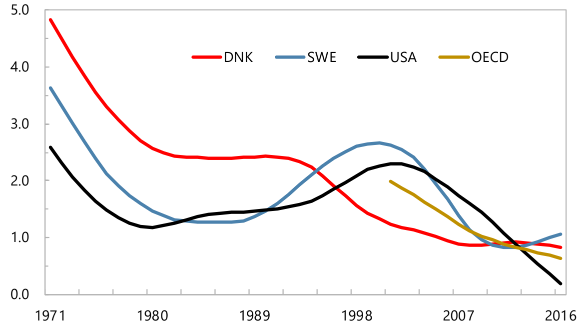
Reforms to Boost Investment and Productivity

30. Productivity growth is subdued and investment remains below its pre-crisis level. The decline in labor productivity has mimicked developments in other advanced economies (see McKinsey report). Weak investment following the crisis contributed to the decline in capital-to-labor ratio, suppressing labor productivity growth.[14] Sectoral breakdown points at weaknesses in productivity growth rates of domestically-oriented service industries and the utility sector, which together comprise about 30 percent of gross value added in the economy. Weak investment also contributed to the recent widening of the current account surplus (Annex I).

31. The authorities put in place several initiatives to boost productivity and foster investment. The *Planning Act* has been amended to relax retail trade regulations, removing size caps for non-grocery stores and raising them for grocery stores. Changes in the *Taxi Act* removed several restrictions and geographical constraints and took effect in 2018. The government established a Management Commission in 2017, which will provide recommendations on improving the quality of public management, and proposed reallocating funding to higher education institutions with the purpose of targeting degrees with relatively better employment prospects. Progress has also been made on incentivizing cooperation between businesses and universities, with the purpose of stimulating knowledge transfer and investment in R&D. A new R&D super-deduction is also being phased in. The Strategy for Denmark's Digital Growth launched beginning of 2018 includes important public-private initiatives to improve digitalization, such as the *Technology Pact, SME Digital*, and *Digital Hub*. The Strategy also calls for agile regulatory framework aimed at supporting dynamic developments in this promising area and unleashing synergies across different partners.

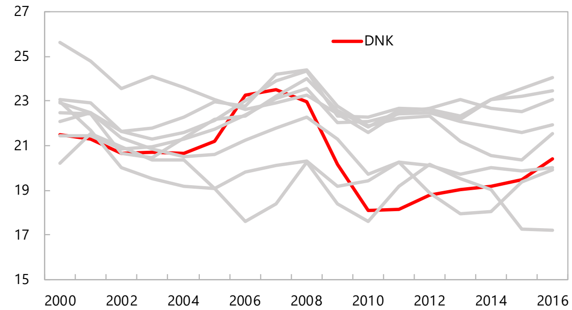
[14] Selected Issues Chapter "Investment Slowdown in Denmark: Diagnosis and Policy Options."

Labor Productivity Growth
(Hours worked, HP-filtered)



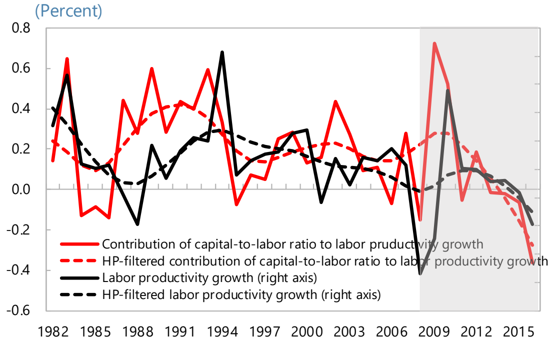
Sources: OECD and IMF staff calculations.

Total Investment
(Percent of GDP)



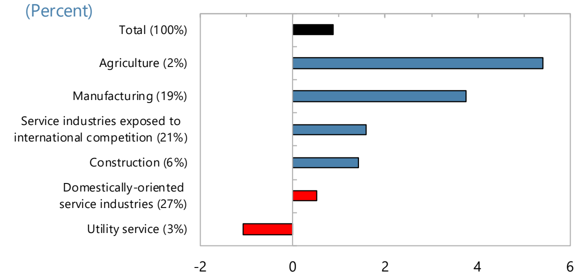
Note: EU peers are AUT, BEL, FIN, FRA, DEU, LUX, NLD and SWE.
Sources: Eurostat and Fund staff calculations.

Labor Productivity Growth and Contribution from Capital-to-Labor Ratio
(Percent)



Sources: Eurostat and Fund staff calculations.

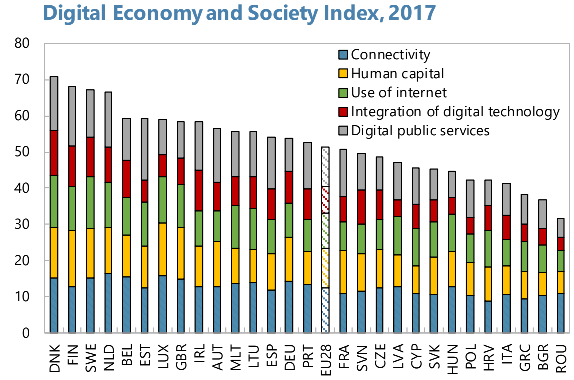
Average Real Productivity Growth in Private Industries, 2006 - 2015
(Percent)



Note: Productivity is measured as gross value added (GVA) in real terms per working hour. The figure in parenthesis indicates the sector's share in total GVA for the entire economy.
Sources: Ministry of Industry, Business and Financial Affairs.

32. These reforms are starting to yield results, but additional reforms will be needed to meet the authorities' ambitious medium-term plan. In its inaugural report on improving productivity, the Danish National Council identified areas for further reforms, drawing on recommendations of the Council, the Productivity Commission (2012–14) and other independent organizations. Competition in the services sector could be improved further by enhancing the powers of the Competition Council in relation to companies breaching regulations and exploiting their dominant market position. The *Planning* and *Taxi Acts* could be relaxed further to allow construction of hypermarkets, easing size restrictions on retail shops located in cities and towns, and reducing barriers to utilizing digital technologies (e.g., ride hailing services). Removing ownership restrictions in some parts of the healthcare sector and legal industry and making it easier to make fixed-term commercial lease agreements is also expected to be conducive to greater productivity. While Denmark scores well in European rankings of digital progress, there is scope for improvement. The *Strategy for Denmark's Digital Growth* can be an important

Digital Economy and Society Index, 2017



Source: European Commision.

driver of productivity growth, by allowing companies to make more effective use of capital stock, improving procedures, and reducing operating costs (EC).

33. Improving competition and reforming corporate taxation could increase investment.

- ***Competition.*** Further liberalization of planning restrictions in the retail sector and building regulations in the construction sector would encourage more investment in these sectors, and could also alleviate housing pressures. Further steps in enhancing collaboration between public research institutions and businesses would expand utilization of university research and encourage investment in R&D. There is also scope for further deregulation of the utilities sector (Denmark 2016 Article IV, Selected Issues, Chapter 4).

- ***Taxation.*** Investment by startups and high-technology firms could be supported by (i) reducing the taxation of dividends,[15] (ii) relaxing the restrictions on the use of losses carried forward, and (iii) making the R&D super-deduction refundable. Investment by established firms could be supported by reducing restrictions on the deductibility of business expansion costs. Corporate income tax reforms, such as the introduction of an incremental Allowance for Corporate Equity (ACE), would increase incentives to invest and reduce the debt bias (Box 1). In implementing these measures, safeguards should be taken to reduce the risks of revenue leakages.

Authorities' Views

34. The authorities believe the level of investment is in line with the cyclical position, but concurred on the merits of boosting productivity. The post-crisis investment slowdown is by and large explained by cyclical factors. Moreover, it reflects the reduction of real estate activities from the unsustainably high pre-crisis levels and the increased share of less investment-intensive sectors in the economy, such as services. The improved macroeconomic environment and emerging capacity constraints will provide impetus to private investment going forward. There were diverging views on the use of tax policy to stimulate investment. The authorities took note of recommendations on tax reforms that would benefit small and high-technology firms, but raised concerns about effects and implementation risks, such as the need to prevent tax avoidance by owner-run businesses. They also agreed on the potential advantages of introducing an incremental ACE to reduce debt-bias and support investment, but noted the need for detailed analysis before implementing an ACE and the already intense demands on the tax administration. The authorities concur that the ongoing transformation in the global economy calls for innovative strategies to foster efficiency gains provided by digitalization.

[15] This measure would also increase the attractiveness of profit distributions and could thereby lower corporate savings.

STAFF APPRAISAL

35. The economy is performing well but potential growth remains weak. The output gap has seemingly closed and there are emerging signs of capacity constraints. Labor shortages and rising house prices coupled with elevated debt level are important domestic risks. External environment is favorable, but also involves risks. Benign macroeconomic environment provides conditions for renewing efforts aimed at raising potential growth and bolstering financial resilience.

36. Fiscal policy should draw on existing fiscal space to support growth-enhancing reforms, while remaining anchored on the medium-term objective. Fiscal space should be used to incentivize private investment through corporate tax reforms. Increasing growth-enhancing public spending to improve broadband access in rural areas, strengthen digital skills, and upgrade public and transport infrastructure—especially around inner-city areas experiencing strong house price growth—would help boost productivity and mitigate house prices pressures. Incentives to switch from social benefits to employment would support labor supply. However, a tighter fiscal stance may be called for in case of excessive demand pressures.

37. Monetary policy should focus on maintaining the peg. Lack of foreign exchange interventions is in contrast with past years and reflects the absence of currency pressures. A gradual reduction of Danish monetary policy spreads relative to the ECB would be desirable if market conditions permit.

38. House price pressures in urban areas coupled with elevated household debt call for coordinated policy action. Tightening of existing macroprudential measures would better protect families from house price declines and higher interest rates. Taking advantage of the current low interest rates, a further than envisaged reduction of mortgage interest rate deductibility should be considered. Reduction of rent controls and relaxation of zoning restrictions would encourage more housing supply and alleviate demand for housing.

39. Banks are well-capitalized and progress was made with upgrading the regulatory framework. Banks remain profitable notwithstanding low interest rates and modest aggregate credit growth. Additional increases of the countercyclical capital buffer may be warranted if risks continue building up. The operational independence of the DFSA should be strengthened and adequate resources should be ensured for continued effectiveness.

40. Employment rates continue rising on the back of past reforms, but there are untapped resources involving mainly young and migrants. Higher youth participation in the labor market could be achieved by reducing the duration of student grants and graduates' access to unemployment insurance. The integration of migrants could be facilitated by improving the accreditation of foreign degrees, relaxing restrictions on employment rules for asylum seekers, lowering the minimum remuneration requirement, and granting more exceptions to the pay limit scheme for residency permits.

41. Incentivizing private investment to boost productivity is a key challenge. The investment slowdown since the crisis suppressed capital accumulation, weighing on labor productivity growth. Product market deregulation efforts in retail, taxi, and utility sectors would boost competition and encourage more investment. The ongoing digitalization initiatives are also important. Capital income tax reforms in the areas of dividend taxation, losses carried forward, R&D deductions, and business asset taxation would support investment by startups and high-technology firms. An allowance for corporate equity would more generally reduce disincentives to invest and reduce the debt bias.

42. The external position is stronger than implied by fundamentals. However, this assessment is subject to large uncertainties. In recent years the surplus is increasingly driven by offshore trading activities and investment income. While the EBA model does not identify policy gaps that explain most of the excess current account surplus, structural policies that raise investment would help reduce the surplus.

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

Box 1. Tax Reform Options[1]

Boosting investment in startups and high-tech firms

Various measures could be taken to decrease disincentives for investment by small and high-technology companies. Most importantly:

- The tax rate on dividends could be reduced, as the high taxation of dividends discourages equity investments in startups. Listed firms are less affected, as their marginal shareholders are likely to be pension funds or foreign investors. For small investors with little collateral, there is no alternative to equity funding, which implies a very high cost of capital for them. Lower dividend tax rates would also increase the attractiveness of profit distributions and could thereby lower corporate savings.
- The limitations on the use of losses carried forward could be relaxed. The limitation poses a challenge for cash-constraint startups who tend to be initially loss making.
- The treatment of the R&D deduction could be made more generous, as currently only part of it is refundable.

Improving the neutrality toward investment and the debt-equity choice

As in most countries, the current Danish corporate income tax system entails a tax preference for debt over equity, because interest on debt is deductible. The introduction of an Allowance for Corporate Equity, which allows a similar deduction on equity finance, would improve efficiency, by greatly reducing the debt bias and by reducing the cost of capital so that the corporate income tax does not discourage investment. In other words, the required pre-tax rate of return would be lowered. Such a reform would be very promising, but a careful study of administrative data to assess the long-term revenue implications is needed, as later abolition should be avoided in the interest of tax certainty.

Protecting tax bases and preventing profit shifting

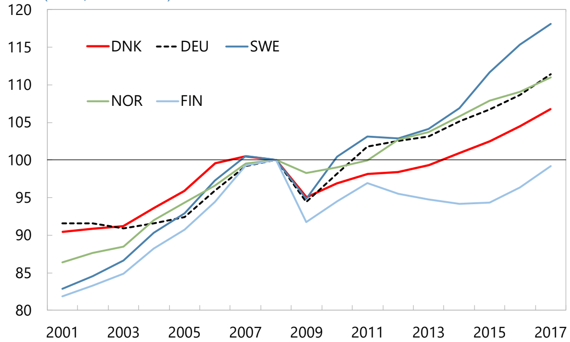
As Danish anti-avoidance legislation is already very strong, only minor technical changes will be needed in response to recent international initiatives aimed at reducing profit shifting. Specifically, one of the Danish interest deduction limitation rules will need to be changed from EBIT to EBITDA to be aligned with the requirements. The practical implication is likely to be limited, as for most firms the more binding limitation is the restriction in terms of assets, which is not affected. In general, there is little need for further tightening of anti-avoidance rules, which are already stronger than in most countries. However, as new avoidance strategies keep being developed, vigilance in this area is always warranted. Digitalization poses another major challenge that may ultimately require fundamental reform, but should not lead to rushed measures or a ring-fenced approach. Moreover, international tax developments, including reforms at the European Union level could affect Denmark, and their implications should be carefully studied.

[1]See Selected Issues Chapter “Capital Income Tax Reform Options in Denmark” for details.

Figure 1. Denmark: Recent Developments

Denmark continues lagging peers despite the upswing …

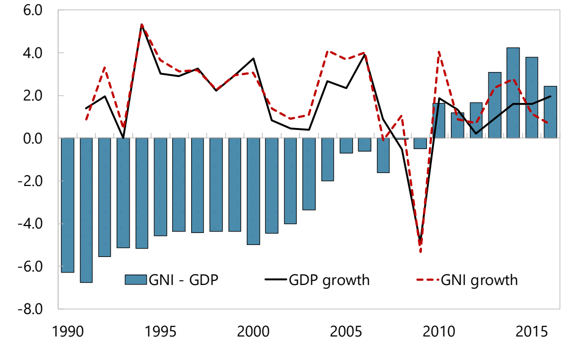
Gross Domestic Product at Constant Prices
(Index, 2008 = 100)



Source: IMF World Economic Outlook and Fund staff calculations.

… though Gross National Income showed stronger growth until recently

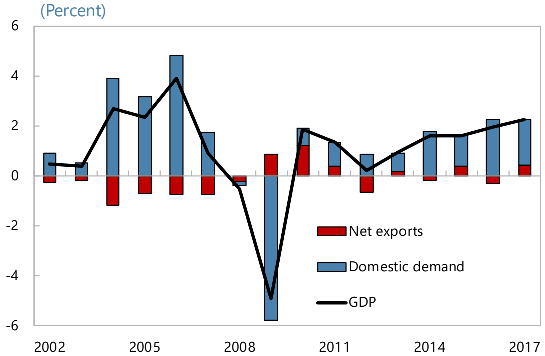
Denmark: GDP and GNI
(Percent)



Sources: OECD and Fund staff calculations.

Domestic demand has been driving real GDP growth …

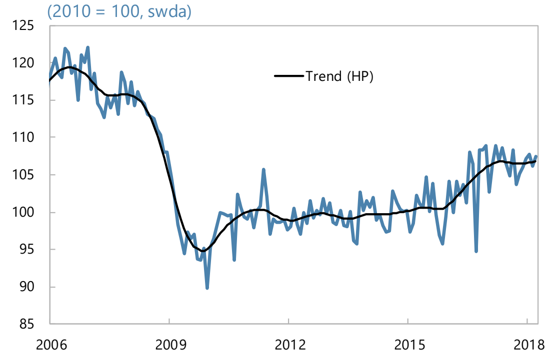
Domestic and External Demand
(Percent)



Sources: Haver Analytics and Fund staff calculations.

… but industrial production slowed down

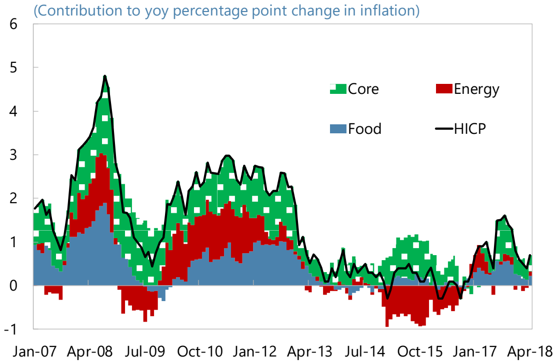
Industrial Production Index
(2010 = 100, swda)



Sources: Haver Analytics and Fund staff calculations.

Headline inflation has been sluggish ….

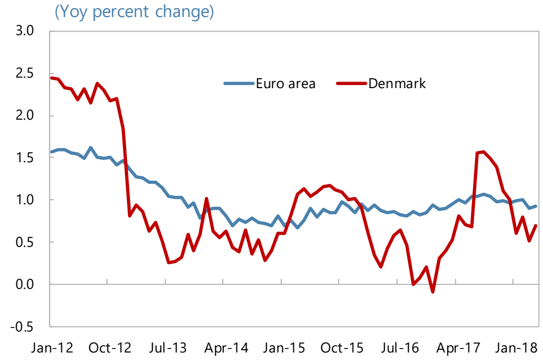
Harmonized Consumer Price Inflation
(Contribution to yoy percentage point change in inflation)



Sources: Haver Analytics and Fund staff calculations.

… and core inflation dropped below Euro area level

HICP Core Inflation
(Yoy percent change)

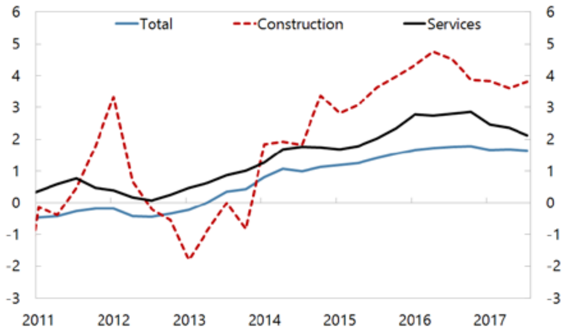


Sources: Haver Analytics and Eurostat.

Figure 2. Denmark: Labor Market Developments

Strong labor market gains continued in 2017, especially in the construction and services sectors, with overall employment rising by 1.5 percent y/y.

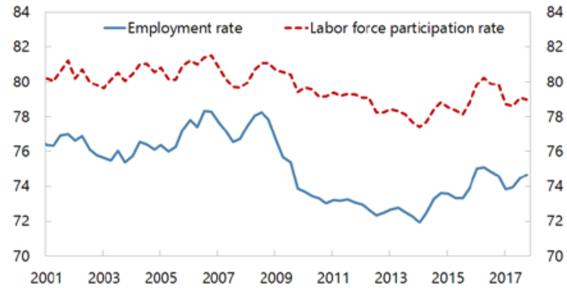
Employment Growth
(Y/Y; in percent; SA)



Sources: Statistics Denmark; and Fund staff calculations.

The share of employed in the population has recovered from its post-crisis lows, and labor supply remains around its long-term average.

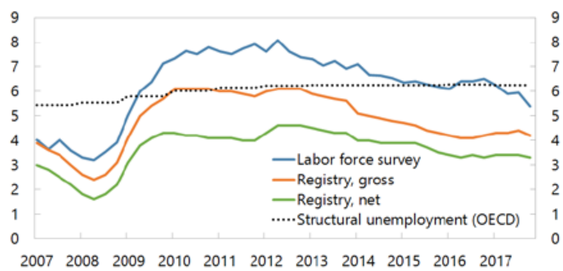
Labor Market Rates
(Percent of working age (15-64 years old) population, SA)



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

Big employment gains have driven the unemployment rate to fall to around 5 percent of the labor force and below its long-term structural level…

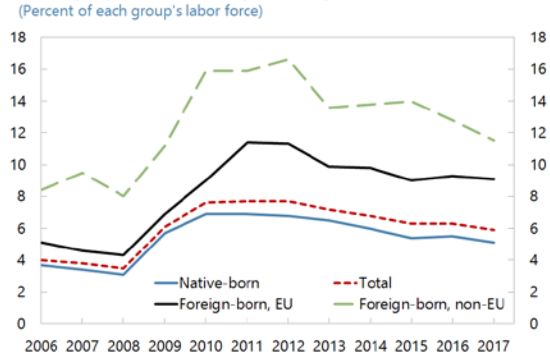
Unemployment Rates 1/
(Percent of labor force, SA)



Sources: Statistics Denmark; OECD; and Fund 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.

…led primarily by improvement among native-born Danes. Unemployment rates among the foreign-born remains very high.

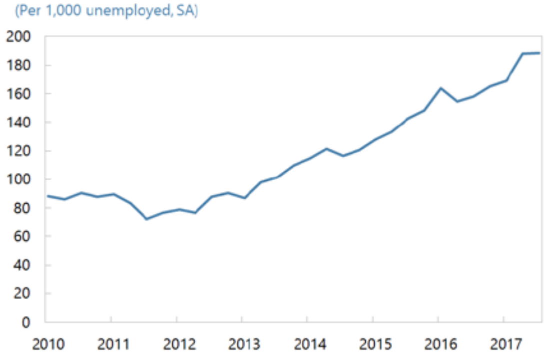
Unemployment Rates by Country of Birth
(Percent of each group's labor force)



Sources: Eurostat; and Fund staff calculations.

Labor demand continues to rise across the economy, reflected in job vacancies…

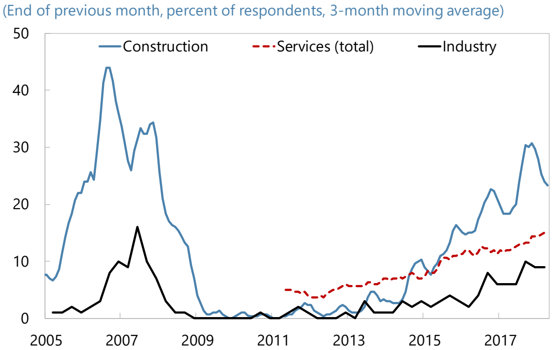
Job Vacancies
(Per 1,000 unemployed, SA)



Source: Statistics Denmark.

…and reported labor shortages, both in cyclical sectors (construction), and services.

Labor Force Shortages
(End of previous month, percent of respondents, 3-month moving average)



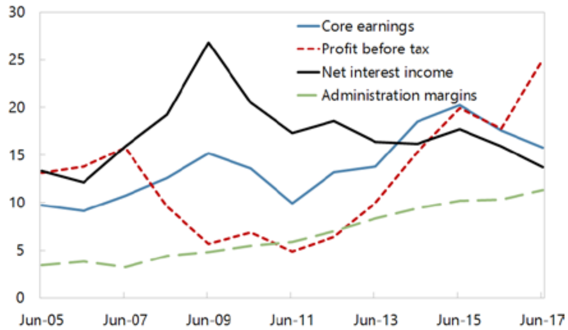
Source: Statistics Denmark (Business Tendency Survey).

Figure 3. Denmark: Recent Development in the Financial Sector

Despite the decline in net interest margins, credit institutions have been able to post strong profits by generating greater fee income.

Income of SIFI Credit Institutions

(DKK, billion)

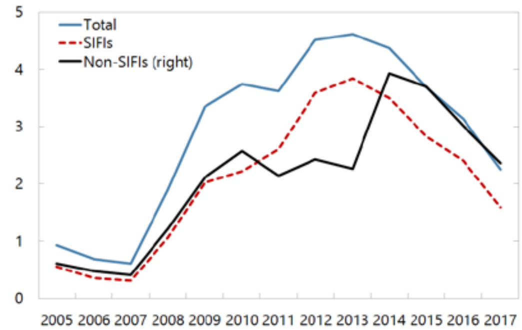


Source: Danmarks Nationalbank

Following an uptick in arrears, the credit quality of banks' loan books has improved….

Impaired Loans

(Percent of total loans in group)

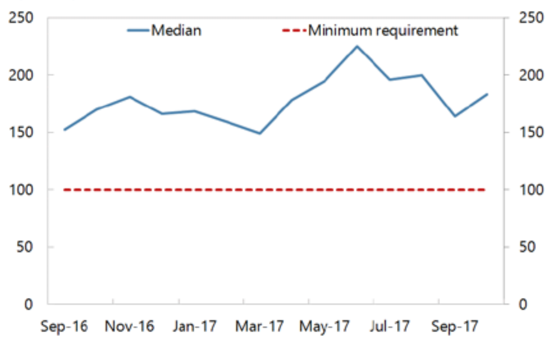


Source: Danish Financial Supervisory Authority.

…and liquidity positions are met comfortably for all SIFI groups on the liquidity coverage ratio and other metrics.

Liquidity Coverage Ratio of SIFIs

(Percent)

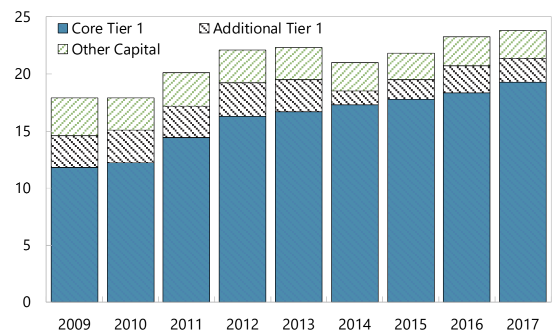


Source: Danmarks Nationalbank.

Capital positions are high with respect to risk-weighted assets, but they will have to increase further to meet the Basel III-mandated requirements.

Regulatory Capital of Credit Institutions

(Percent of risk-weighted assets)

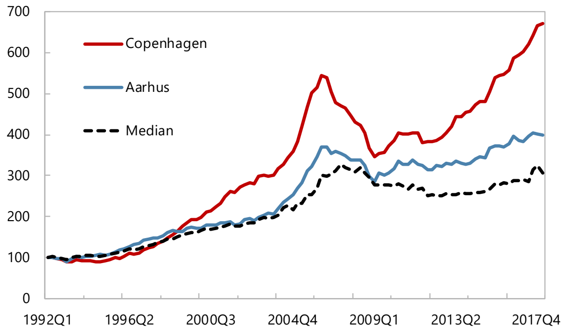


Source: Danish Financial Supervisory Authority.

Figure 4. Denmark: Recent Development in the Housing Sector

House prices keep rising, especially in urban areas….

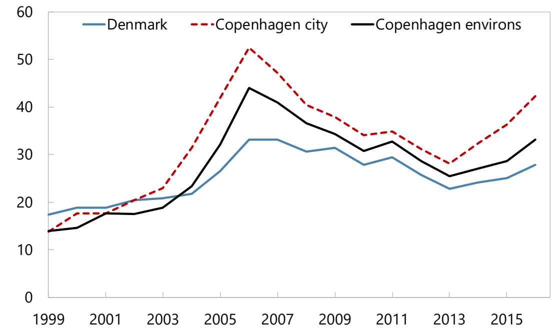
Nominal House Price Index
(1992Q1 = 100)



Sources: Finans Danmark and Fund staff calculations.

…where LTIs are climbing.

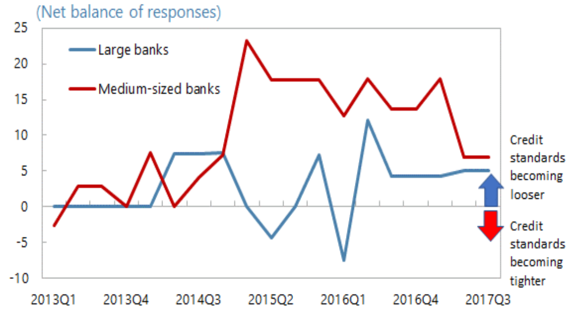
Share of Households with LTI Greater than Four
(Percent of total new mortgage lending)



Source: Danmarks Nationalbank, Financial Stability Report, 2H2017.

Credit standards are being eased further, led by medium-sized banks

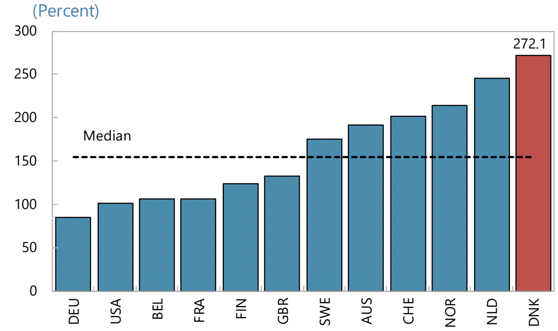
Credit Standards by Bank Size
(Net balance of responses)



Note: The net balance ranges betwen -100 and 100. A positive net balance denotes looser credit standards relative to the preceding quarter.
Source: Danmarks Nationalbank.

Household debt remains very high….

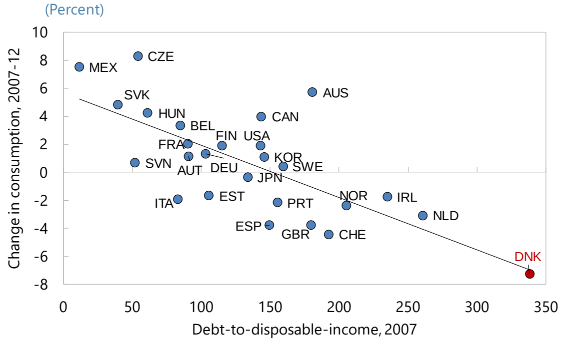
Household and NPISH Outstanding Debt to Gross Disposable Income, 2017 or most recent.
(Percent)



Source: Haver Analytics and Fund staff calculations.

…which makes consumption vulnerable to shocks

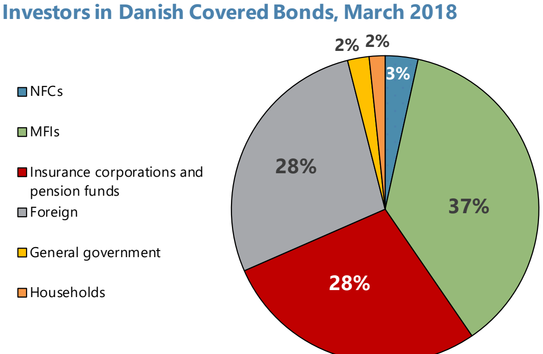
Household Leverage and Consumption
(Percent)



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

Pension and Insurance companies are significant holders of covered bonds.

Investors in Danish Covered Bonds, March 2018



Source: Danmarks Nationalbank.

Table 1. Denmark: Selected Economic and Social Indicators, 2015–23

	2015	2016	2017	2018 proj.	2019 proj.	2020 proj.	2021 proj.	2022 proj.	2023 proj.
Supply and Demand (change in percent)									
Real GDP	1.6	2.0	2.2	2.0	1.9	1.8	1.8	1.7	1.7
Final domestic demand	1.7	2.4	1.9	2.1	2.1	2.0	2.0	1.9	1.9
Private consumption	1.6	2.1	1.5	2.2	2.5	2.5	2.4	2.3	2.3
Public consumption	1.1	0.3	1.2	0.5	0.3	0.3	0.3	0.3	0.3
Gross fixed investment	3.1	6.0	3.7	3.8	3.4	3.0	3.0	2.8	2.8
Net exports 1/	0.4	-0.3	0.4	0.1	0.0	-0.1	-0.1	-0.1	-0.1
Gross national saving (percent of GDP)	28.7	28.3	28.9	29.3	29.4	29.3	29.3	29.2	29.2
Gross domestic investment (percent of GDP)	20.0	21.0	21.0	21.5	21.8	22.1	22.3	22.5	22.7
Potential output	1.5	1.5	1.6	1.7	1.8	1.8	1.8	1.8	1.8
Output gap (percent of potential output)	-0.7	-0.3	0.4	0.6	0.8	0.7	0.7	0.6	0.5
Labor Market (change in percent) 2/									
Labor force	1.1	2.9	-1.3	0.5	0.6	0.7	0.8	0.8	0.8
Employment	1.5	2.9	-0.8	0.5	0.7	0.7	0.7	0.7	0.8
Harmonized unemployment rate (percent)	6.2	6.2	5.7	5.7	5.6	5.6	5.7	5.8	5.8
Prices and Costs (change in percent)									
GDP deflator	0.7	0.0	1.6	1.8	1.9	2.1	2.2	2.1	2.1
CPI (year average)	0.5	0.2	1.1	1.4	1.7	2.0	2.0	2.0	2.0
Public Finance (percent of GDP) 3/									
Total revenues	53.3	53.2	52.9	51.4	51.2	50.9	50.7	50.5	50.3
Total expenditures	54.8	53.6	51.9	52.2	51.8	51.4	51.1	50.7	50.4
Overall balance	-1.5	-0.4	1.0	-0.7	-0.5	-0.4	-0.3	-0.2	-0.1
Primary balance 4/	-0.7	0.1	1.2	-0.3	0.0	0.1	0.2	0.3	0.4
Cyclically-adjusted balance (percent of potential GDP)	-0.9	-0.2	0.7	-1.2	-1.1	-1.0	-0.9	-0.6	-0.4
Structural balance (percent of potential GDP) 5/	1.0	-0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.1
Gross debt	39.9	37.9	35.5	34.9	34.1	33.3	32.4	31.3	30.2
Money and Interest Rates (percent)									
Domestic credit growth (end of year)	0.1	1.6	1.6	...	...	...	...	...	...
M3 growth (end of year)	12.2	-4.0	3.8	...	...	...	...	...	...
Short-term interbank interest rate (3 month)	-0.1	-0.1	-0.3	...	...	...	...	...	...
Government bond yield (10 year)	0.7	0.3	0.4	...	...	...	...	...	...
Balance of Payments (percent of GDP)									
Exports of goods & services	55.7	53.6	55.2	56.8	56.6	56.2	55.9	55.5	55.1
Imports of goods & services	48.4	47.4	48.2	49.8	49.9	49.9	49.8	49.6	49.5
Trade balance, goods and services	7.3	6.2	7.0	6.9	6.7	6.4	6.1	5.9	5.6
Oil trade balance	-0.1	-0.2	-0.2	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0
Current account	8.8	7.3	7.9	7.8	7.5	7.2	7.0	6.7	6.4
International reserves, changes	-1.2	0.7	0.6	...	...	...	...	...	...
Exchange Rate									
Average DKK per US$ rate	6.7	6.7	6.6	...	...	...	...	...	...
Nominal effective rate (2010=100, ULC based)	96.5	97.6	98.7	...	...	...	...	...	...
Real effective rate (2010=100, ULC based)	93.7	95.4	97.1	...	...	...	...	...	...
Memorandum Items									
Nominal GDP (Bln DKK)	2027	2066	2145	2228	2314	2405	2501	2597	2699
GDP (Bln USD)	301	307	325	...	...	...	...	...	...
GDP per capita (USD)	53236	53774	56512	...	...	...	...	...	...

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, 2015–23

	2015	2016	2017	2018 proj.	2019 proj.	2020 proj.	2021 proj.	2022 proj.	2023 proj.
				Billions of DKK					
Current Account	177.9	151.3	169.1	173.8	174.2	173.3	174.1	174.0	173.7
Balance on Goods	106.2	116.2	123.9	143.9	143.3	141.5	142.6	142.8	142.8
Merchandise exports f.o.b.	695.3	700.7	749.1	814.8	839.2	860.9	887.2	908.1	927.3
Merchandise imports f.o.b.	589.1	584.5	625.2	670.9	695.8	719.3	744.6	765.4	784.6
Balance on Services	41.6	11.8	26.9	10.9	11.3	11.4	10.4	9.3	8.1
Exports of services, total	433.3	406.4	435.9	450.0	470.5	491.4	511.7	532.9	560.5
Imports of services, total	391.7	394.5	409.1	439.1	459.1	480.0	501.4	523.7	552.3
Balance on Income	30.1	23.3	18.3	19.0	19.6	20.3	21.2	22.0	22.8
Capital and Financial Account	113.7	99.2	157.0	175.5	176.1	175.2	176.1	176.1	175.9
Capital transfer, net	-7.2	0.1	0.8	0.9	0.9	0.9	1.0	1.0	1.1
Financial Account	120.9	99.1	156.2	174.7	175.1	174.2	175.1	175.0	174.8
Direct investment, net	35.6	61.1	104.7	108.7	112.9	117.3	122.0	126.7	131.7
Abroad	48.5	118.8	88.9	92.4	95.9	99.7	103.7	107.7	111.9
In Denmark	12.8	57.7	-15.7	-16.3	-17.0	-17.6	-18.3	-19.0	-19.8
Portfolio investment, net	-111.1	-78.6	-16.0	-16.6	-17.2	-17.9	-18.6	-19.3	-20.1
Assets	-53.0	20.9	67.6	70.2	72.9	75.8	78.8	81.9	85.1
Liabilities	58.1	99.5	83.6	86.8	90.2	93.7	97.4	101.2	105.1
Financial derivatives, net	32.8	-25.1	-12.7	-13.1	-13.6	-14.2	-14.7	-15.3	-15.9
Other investment, net	188.3	127.4	68.1	95.7	93.1	89.0	86.5	83.0	79.1
Reserve assets	-24.7	14.3	12.0	0.0	0.0	0.0	0.0	0.0	0.0
Net errors and omissions	64.2	52.1	12.1	-1.8	-1.8	-1.9	-2.0	-2.0	-2.1
				Percent of GDP					
Current Account	8.8	7.3	7.9	7.8	7.5	7.2	7.0	6.7	6.4
Balance on Goods	5.2	5.6	5.8	6.5	6.2	5.9	5.7	5.5	5.3
Merchandise exports f.o.b.	34.3	33.9	34.9	36.6	36.3	35.8	35.5	35.0	34.4
Merchandise imports f.o.b.	29.1	28.3	29.1	30.1	30.1	29.9	29.8	29.5	29.1
Balance on Services	2.1	0.6	1.3	0.5	0.5	0.5	0.4	0.4	0.3
Exports of services, total	21.4	19.7	20.3	20.2	20.3	20.4	20.5	20.5	20.8
Imports of services, total	19.3	19.1	19.1	19.7	19.8	20.0	20.0	20.2	20.5
Balance on Income	1.5	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8
Capital and Financial Account	5.6	4.8	7.3	7.9	7.6	7.3	7.0	6.8	6.5
Capital transfer, net	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial Account	6.0	4.8	7.3	7.8	7.6	7.2	7.0	6.7	6.5
Direct investment, net	1.8	3.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Abroad	2.4	5.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1
In Denmark	0.6	2.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Portfolio investment, net	-5.5	-3.8	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Assets	-2.6	1.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Liabilities	2.9	4.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Financial derivatives, net	1.6	-1.2	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Other investment, net	9.3	6.2	3.2	4.3	4.0	3.7	3.5	3.2	2.9
Reserve assets	-1.2	0.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Net errors and omissions	3.2	2.5	0.6	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Memorandum items:									
Net oil and oil-related exports	-0.1	-0.2	-0.2	...	...	...	...	...	...
Net sea transportation receipts	2.7	1.5	2.2	...	...	...	...	...	...
Current Account net of items above	6.3	6.0	5.9	...	...	...	...	...	...
Gross External Debt	153.9	157.2	...	...	...	...	...	...	...
Gross Domestic Product	2,027	2,066	2,145	2,228	2,314	2,405	2,501	2,597	2,699

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

Table 3. Denmark: International Investment Position, 2010–17

	2010	2011	2012	2013	2014	2015	2016	2017
				Billions of DKK				
Assets	4,617	4,771	5,133	5,328	5,726	5,974	6,465	6,808
Direct investment	1,244	1,345	1,388	1,412	1,516	1,622	1,755	1,779
Equity	830	863	945	982	1,089	1,178	1,285	1,327
Debt instruments	414	482	443	430	427	444	470	452
Portfolio investment	1,820	1,786	2,086	2,206	2,537	2,715	2,921	3,088
Equity	657	625	749	920	1,043	1,189	1,312	1,515
Investment fund shares	105	116	166	197	246	271	309	350
Debt securities	1,058	1,045	1,171	1,088	1,248	1,254	1,300	1,224
Fin. deriv. (other than reserves)	37	120	131	69	100	68	39	59
Other investment	1,083	1,028	1,016	1,161	1,113	1,127	1,294	1,415
Reserve assets	432	492	512	480	460	442	456	467
Liabilities	4,384	4,258	4,448	4,608	4,974	5,274	5,327	5,639
Direct investment	788	811	826	806	987	1,016	1,123	1,127
Equity	495	508	518	513	655	663	757	787
Debt instruments	292	302	308	292	332	353	366	340
Portfolio investment	1,960	1,920	2,120	2,297	2,649	3,071	2,985	3,252
Equity	496	427	575	739	958	1,313	1,133	1,357
Investment fund shares	24	25	32	54	55	64	83	107
Debt securities	1,440	1,469	1,513	1,503	1,636	1,695	1,768	1,787
Financial derivatives	0	0	0	0	0	0	0	0
Other investment	1,636	1,527	1,501	1,506	1,338	1,187	1,220	1,260
Net Investment Position	232	513	686	720	752	700	1,138	1,169
Direct Investment	457	534	562	607	529	606	631	652
Portfolio Investment	-140	-134	-34	-91	-112	-356	-64	-164
Other Investment	-553	-499	-485	-345	-225	-60	75	155
				Percent of GDP				
	2010	2011	2012	2013	2014	2015	2016	2017
Assets	254.9	258.3	270.9	276.1	289.0	294.7	312.9	317.4
Direct investment	68.7	72.8	73.2	73.2	76.5	80.0	84.9	82.9
Equity	45.9	46.7	49.9	50.9	55.0	58.1	62.2	61.8
Debt instruments	22.9	26.1	23.4	22.3	21.5	21.9	22.8	21.1
Portfolio investment	100.5	96.7	110.1	114.3	128.1	133.9	141.4	144.0
Equity	36.3	33.8	39.6	47.7	52.6	58.7	63.5	70.6
Investment fund shares	5.8	6.3	8.8	10.2	12.4	13.4	14.9	16.3
Debt securities	58.4	56.6	61.8	56.4	63.0	61.9	62.9	57.0
Fin. deriv. (other than reserves)	2.0	6.5	6.9	3.6	5.0	3.4	1.9	2.7
Other investment	59.8	55.7	53.6	60.2	56.2	55.6	62.6	66.0
Reserve assets	23.9	26.6	27.0	24.9	23.2	21.8	22.1	21.8
Liabilities	242.1	230.6	234.7	238.8	251.0	260.2	257.9	262.9
Direct investment	43.5	43.9	43.6	41.7	49.8	50.1	54.4	52.5
Equity	27.4	27.5	27.4	26.6	33.1	32.7	36.7	36.7
Debt instruments	16.1	16.4	16.3	15.2	16.7	17.4	17.7	15.8
Portfolio investment	108.2	104.0	111.9	119.0	133.7	151.5	144.5	151.6
Equity	27.4	23.1	30.3	38.3	48.4	64.7	54.9	63.3
Investment fund shares	1.4	1.4	1.7	2.8	2.8	3.1	4.0	5.0
Debt securities	79.5	79.5	79.9	77.9	82.6	83.6	85.6	83.3
Financial derivatives	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other investment	90.4	82.7	79.2	78.1	67.5	58.6	59.0	58.7
Net Investment Position	12.8	27.8	36.2	37.3	38.0	34.5	55.1	54.5
Direct Investment	25.2	28.9	29.6	31.4	26.7	29.9	30.6	30.4
Portfolio Investment	-7.8	-7.3	-1.8	-4.7	-5.6	-17.6	-3.1	-7.6
Other Investment	-30.5	-27.0	-25.6	-17.9	-11.3	-3.0	3.6	7.2

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

Table 4. Denmark: GFSM 2001 Statement of General Government Operations, 2015–23
(Billons of DKK)

	2015	2016	2017	2018 proj.	2019 proj.	2020 proj.	2021 proj.	2022 proj.	2023 proj.
General Government									
Total Revenues	1080.6	1098.8	1134.3	1146.3	1185.7	1224.9	1268.5	1312.2	1357.7
Personal Income Taxes	515.2	503.7	521.3	534.8	555.4	570.0	590.2	610.4	631.5
Pension Return Taxes	22.8	34.0	31.5	11.1	6.9	7.2	7.5	5.2	2.7
Company Taxes	56.6	56.2	65.1	64.6	67.1	69.7	72.5	75.3	78.3
Taxes on Goods and Services	289.6	299.2	305.3	316.4	328.6	341.5	355.1	363.6	377.8
Social Contributions	20.1	19.6	20.3	21.1	21.9	22.8	23.7	24.6	25.6
Interest and Dividends	16.8	17.2	19.2	17.8	18.5	19.2	20.0	20.8	21.6
Other revenues	159.5	168.9	171.5	180.5	187.3	194.4	199.5	212.2	220.3
Total Expenditures	1110.4	1107.3	1112.9	1162.8	1198.3	1235.7	1277.2	1316.6	1360.1
Expense	1040.5	1030.6	1042.1	1082.5	1119.6	1154.0	1192.1	1228.3	1268.4
Public Consumption	508.5	513.6	522.8	536.6	552.6	569.5	587.0	604.9	623.4
Public Subsidies	41.0	38.6	39.1	42.3	44.0	43.3	45.0	44.2	45.9
Interest Expenditures	31.9	28.0	22.9	26.7	30.1	31.3	32.5	33.8	35.1
Social Benefits	382.6	385.3	390.5	403.3	416.5	430.5	445.1	459.8	475.0
Other Expenditures	76.5	65.1	66.8	73.5	76.4	79.4	82.5	85.7	89.1
Net Acquisition of Nonfinancial Assets	69.9	76.7	70.7	80.2	78.7	81.8	85.0	88.3	91.8
Gross operating balance	40.1	68.2	92.2	63.8	66.2	71.0	76.4	83.9	89.4
Net lending/borrowing	-29.8	-8.4	21.5	-16.4	-12.5	-10.8	-8.7	-4.4	-2.4
Net financial transactions	-29.8	-8.4	21.5	..	..	..	..	..	..
Net acquisition of financial assets	-91.9	-32.1	32.9	..	..	..	..	..	..
Currency and deposits	-51.2	-42.1	24.6	..	..	..	..	..	..
Securities other than shares	1.7	-5.8	0.0	..	..	..	..	..	..
Loans	-2.0	2.6	1.1	..	..	..	..	..	..
Shares and other equity	4.8	-8.7	0.9	..	..	..	..	..	..
Insurance technical reserves	0.2	-0.1	-0.1	..	..	..	..	..	..
Financial derivatives and employee stock options	-2.8	-2.8	-2.5	..	..	..	..	..	..
Other financial assets	-42.5	24.9	9.0	..	..	..	..	..	..
Net incurrence of liabilities	-62.1	-23.6	11.5	..	..	..	..	..	..
Currency and deposits	0.9	-0.1	-3.9	..	..	..	..	..	..
Securities other than shares	-77.9	-23.4	0.2	..	..	..	..	..	..
Loans	4.8	1.8	-0.5	..	..	..	..	..	..
Shares and Other Equity	0.0	0.0	0.0	..	..	..	..	..	..
Insurance Technical Reserves	0.0	0.0	0.0	..	..	..	..	..	..
Other liabilities	10.0	-1.9	15.7	..	..	..	..	..	..

Sources: Statistics Denmark and Fund staff calculations.

Table 5. Denmark: GFSM 2001 Statement of General Government Operations, 2015–23

(Percent of GDP)

	2015	2016	2017	2018 proj.	2019 proj.	2020 proj.	2021 proj.	2022 proj.	2023 proj.
General Government									
Total Revenues	53.3	53.2	52.9	51.4	51.2	50.9	50.7	50.5	50.3
Personal Income Taxes	25.4	24.4	24.3	24.0	24.0	23.7	23.6	23.5	23.4
Pension Return Taxes	1.1	1.6	1.5	0.5	0.3	0.3	0.3	0.2	0.1
Company Taxes	2.8	2.7	3.0	2.9	2.9	2.9	2.9	2.9	2.9
Taxes on Goods and Services	14.3	14.5	14.2	14.2	14.2	14.2	14.2	14.0	14.0
Social Contributions	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Interest and Dividends	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Other revenues	7.9	8.2	8.0	8.1	8.1	8.1	8.0	8.2	8.2
Total Expenditures	54.8	53.6	51.9	52.2	51.8	51.4	51.1	50.7	50.4
Expense	51.3	49.9	48.6	48.6	48.4	48.0	47.7	47.3	47.0
Public Consumption	25.1	24.9	24.4	24.1	23.9	23.7	23.5	23.3	23.1
Public Subsidies	2.0	1.9	1.8	1.9	1.9	1.8	1.8	1.7	1.7
Interest Expenditures	1.6	1.4	1.1	1.2	1.3	1.3	1.3	1.3	1.3
Social Benefits	18.9	18.7	18.2	18.1	18.0	17.9	17.8	17.7	17.6
Other Expenditures	3.8	3.1	3.1	3.3	3.3	3.3	3.3	3.3	3.3
Net Acquisition of Nonfinancial Assets	3.4	3.7	3.3	3.6	3.4	3.4	3.4	3.4	3.4
Gross operating balance	2.0	3.3	4.3	2.9	2.9	3.0	3.1	3.2	3.3
Net lending/borrowing	-1.5	-0.4	1.0	-0.7	-0.5	-0.4	-0.3	-0.2	-0.1
Net financial transactions	-1.5	-0.4	1.0	..	..	..	..	..	..
Net acquisition of financial assets	-4.5	-1.6	1.5	..	..	..	..	..	..
Currency and deposits	-2.5	-2.0	1.1	..	..	..	..	..	..
Securities other than shares	0.1	-0.3	0.0	..	..	..	..	..	..
Loans	-0.1	0.1	0.0	..	..	..	..	..	..
Shares and other equity	0.2	-0.4	0.0	..	..	..	..	..	..
Insurance technical reserves	0.0	0.0	0.0	..	..	..	..	..	..
Financial derivatives and employee stock options	-0.1	-0.1	-0.1	..	..	..	..	..	..
Other financial assets	-2.1	1.2	0.4	..	..	..	..	..	..
Net incurrence of liabilities	-3.1	-1.1	0.5	..	..	..	..	..	..
Currency and deposits	0.0	0.0	-0.2	..	..	..	..	..	..
Securities other than shares	-3.8	-1.1	0.0	..	..	..	..	..	..
Loans	0.2	0.1	0.0	..	..	..	..	..	..
Shares and Other Equity	0.0	0.0	0.0	..	..	..	..	..	..
Insurance Technical Reserves	0.0	0.0	0.0	..	..	..	..	..	..
Other liabilities	0.5	-0.1	0.7	..	..	..	..	..	..
Memorandum items									
Primary Balance 1/	-0.7	0.1	1.2	-0.3	0.0	0.1	0.2	0.3	0.4
Structural Balance 2/	1.0	-0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.1
One-off Measures 2/ 3/	-1.9	-0.1	0.5	-1.3	-1.3	-1.0	-0.9	-0.6	-0.5
Cyclically Adjusted Balance 2/	-0.9	-0.2	0.7	-1.2	-1.1	-1.0	-0.9	-0.6	-0.4
Gross Debt	39.9	37.9	35.5	34.9	34.1	33.3	32.4	31.3	30.2
Gross Domestic Product (Bln. Kroner)	2,027	2,066	2,145	2,228	2,314	2,405	2,501	2,597	2,699

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, 2010–15

	2010	2011	2012	2013	2014	2015
			Billions of DKK			
Assets	1,905	1,997	1,956	1,959	2,020	1,950
Financial assets	1,027	1,089	1,024	1,015	1,065	989
Monetary gold and SDR	0	0	0	0	0	0
Currency and deposits	221	283	220	218	270	225
Securities other than shares	129	135	116	102	67	67
Loans	149	154	164	176	180	182
Shares and other equity	405	412	415	416	425	422
Insurance technical reserves	1	1	1	2	1	2
Financial derivatives and employee stock options	8	12	11	6	5	5
Other financial assets	114	92	97	95	117	87
Capital stock net of depreciation	878	907	932	944	955	961
Liabilities	968	1,110	1,149	1,095	1,166	1,098
Financial liabilities	968	1,110	1,149	1,095	1,166	1,098
Monetary gold and SDR	0	0	0	0	0	0
Currency and deposits	15	15	15	15	16	16
Securities other than shares	672	805	837	764	831	737
Loans	144	149	154	163	165	169
Shares and other equity	0	0	0	0	0	0
Insurance technical reserves	0	0	0	0	0	0
Financial derivatives and employee stock options	0	0	0	0	0	0
Other financial assets	137	141	143	152	155	176
Net worth	937	887	807	864	854	852
Financial net worth	59	-21	-125	-80	-101	-109
			Percent of GDP			
Assets	105.2	108.1	103.2	101.5	102.0	96.2
Financial assets	56.7	59.0	54.0	52.6	53.8	48.8
Monetary gold and SDR	0.0	0.0	0.0	0.0	0.0	0.0
Currency and deposits	12.2	15.3	11.6	11.3	13.6	11.1
Securities other than shares	7.1	7.3	6.1	5.3	3.4	3.3
Loans	8.2	8.3	8.7	9.1	9.1	9.0
Shares and other equity	22.4	22.3	21.9	21.5	21.5	20.8
Insurance technical reserves	0.1	0.1	0.1	0.1	0.1	0.1
Financial derivatives and employee stock options	0.4	0.7	0.6	0.3	0.3	0.3
Other financial assets	6.3	5.0	5.1	4.9	5.9	4.3
Capital stock net of depreciation	48.5	49.1	49.2	48.9	48.2	47.4
Liabilities	53.4	60.1	60.6	56.7	58.9	54.2
Financial liabilities	53.4	60.1	60.6	56.7	58.9	54.2
Monetary gold and SDR	0.0	0.0	0.0	0.0	0.0	0.0
Currency and deposits	0.8	0.8	0.8	0.8	0.8	0.8
Securities other than shares	37.1	43.6	44.2	39.6	41.9	36.4
Loans	8.0	8.1	8.1	8.5	8.3	8.3
Shares and other equity	0.0	0.0	0.0	0.0	0.0	0.0
Insurance technical reserves	0.0	0.0	0.0	0.0	0.0	0.0
Financial derivatives and employee stock options	0.0	0.0	0.0	0.0	0.0	0.0
Other financial assets	7.6	7.6	7.5	7.9	7.8	8.7
Net worth	51.8	48.0	42.6	44.8	43.1	42.0
Financial net worth	3.3	-1.1	-6.6	-4.1	-5.1	-5.4
Memorandum items:						
Nominal GDP (in billions of DKK)	1,811	1,847	1,895	1,930	1,981	2,027

Sources: Eurostat, Statistics Denmark and Fund staff calculations.

Table 7. Denmark: Financial System Indicators, 2010–17 1/

(Percent)

	2010	2011	2012	2013	2014	2015	2016	2017
Deposit-taking institutions: Total								
Regulatory capital to risk-weighted assets	17.9	20.1	22.1	22.3	21.0	21.8	23.2	23.8
Regulatory Tier I capital to risk-weighted assets	15.1	17.2	19.2	19.5	18.5	19.5	20.7	21.4
Core / Common Equity Tier 1 capital to risk-weighted assets	12.2	14.4	16.3	16.7	17.3	17.8	18.3	19.3
Nonperforming loans net of provisions to capital	22.9	22.0	22.9	22.4	22.0	17.8	14.2	11.0
Bank provisions to Nonperforming loans	55.2	50.2	50.8	51.0	50.3	50.5	51.0	54.3
Nonperforming loans to total gross loans	7.9	7.9	8.3	8.7	8.2	6.9	5.3	4.3
Sectoral distribution of loans to total loans, of which								
Nonfinancial corporation	41.8	43.5	39.1	37.0	37.3	39.5	39.4	41.2
Households (including individual firms)	31.1	32.5	33.1	32.0	32.5	32.8	34.2	33.4
ROA (aggregated data on a parent-company basis) 2/	0.1	0.1	0.2	0.4	0.4	0.8	1.0	1.2
ROA (main groups on a consolidated basis) 3/	0.1	0.1	0.2	0.4	0.3	0.5	0.7	0.7
ROE (aggregated data on a parent-company basis) 2/	1.7	1.3	2.7	5.7	5.6	9.1	14.1	14.2
ROE (main groups on a consolidated basis) 3/	2.2	2.1	3.4	6.9	6.4	10.2	13.2	14.0
Interest margin to gross income	70.1	73.4	67.0	64.2	60.0	54.4	50.8	46.9
Noninterest expenses to gross income	42.7	43.8	44.9	47.2	55.5	55.2	49.4	46.7
Liquid assets to total assets	27.8	23.6	27.0	30.9	27.3	31.4	32.8	34.4
Liquid assets to short-term liabilities	45.6	37.3	45.4	49.8	42.0	50.3	51.9	54.8
Foreign currency position	3.4	2.8	1.4	1.2	1.7	1.5	1.5	1.6

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.

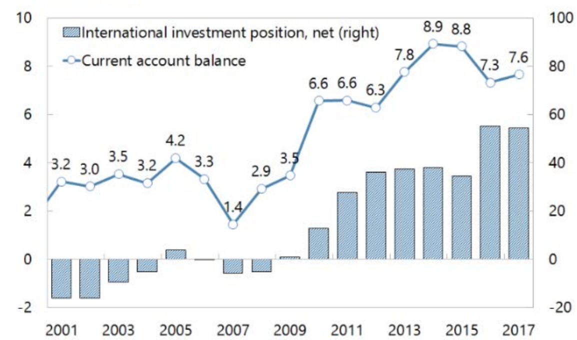
3/ Consolidated data for the five main banking groups (IFRS).

Annex I. External Balance Assessment

The current account surplus remains significant and is driven by offshore trading activity of Danish multinational corporations and investment income. Households and nonfinancial corporations have increased their saving in recent years, while investment fell, partly as the private sector sought to deleverage. Staff assess Denmark's external position to be stronger than implied by fundamentals. While the EBA model does not identify policy gaps that explain most of the excess current account surplus, structural policies that raise investment would help reduce the surplus.

1. Denmark's external position remains large after its significant increase since the global financial crisis. The current account surplus in 2017 was 7.6 percent of GDP, close to its post-crisis average. The significant increase in the external balance since 2009 has resulted in accumulation of foreign assets to 317 percent of GDP in 2017, via direct and portfolio investment by firms, pension funds, and households. This has increased the net international investment position (NIIP) to 54 percent of GDP in 2017, in part due to a large rise in asset prices. Of the nearly 54 percentage points of GDP NIIP increase since 2009, 23 percentage points of GDP was due to revaluations and other adjustments related to asset prices increases, according to staff estimates. Central bank analysis also finds that about half (some DKK 3 trillion) of Danes' foreign assets are interest-rate or equity-price sensitive in 2016, up from 41 percent in 2005.

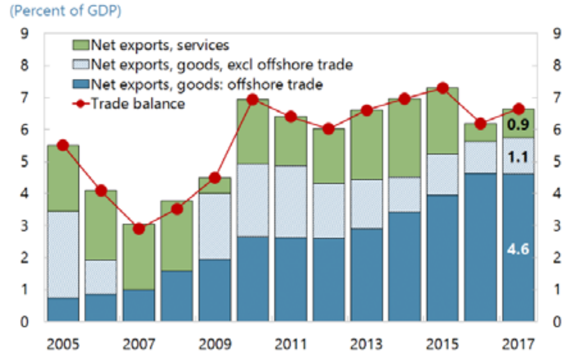
Danish External Position
(Percent of GDP)



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 surplus (5.8 out of 6.6 percent of GDP in 2017), and an increasing share in the last decade is produced outside Denmark (4.6 percent of GDP in 2017 from less than 1 percent ten years ago). The growing integration of Danish firms in global value chains and the activities of large Danish multinational corporations are partly responsible for this, and they appear in merchanting and processing trades.[1] The large international investment position also generates considerable income from abroad, as Danish residents have invested significantly in

Trade Balance
(Percent of GDP)



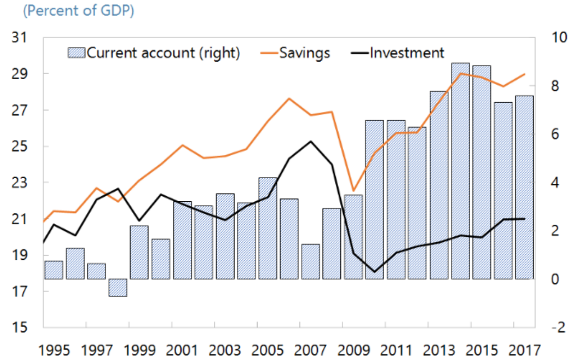
Sources: Statistics Denmark; and Fund staff calculations.

[1] 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.

foreign assets which yield more than foreigners' holdings of Danish assets. Net capital outflows increased, via a reduction in debt liabilities (¾ percent of GDP in 2017), and an increase of outward direct investment (almost 5 percent of GDP in 2017).

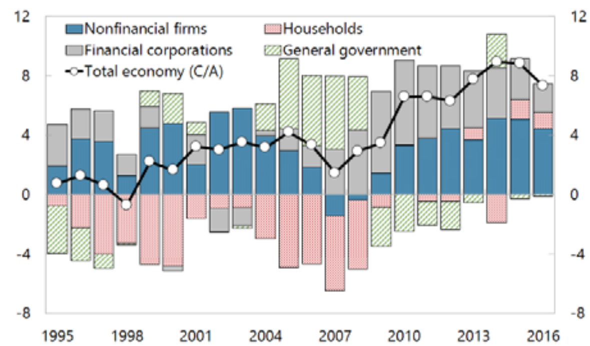
3. **From a savings and investment perspective, private sector firms have the highest net savings, but households have increased their net contribution to the current account surplus in recent years.** Savings and investment declined considerably following the global financial crisis, but savings recovered 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.[2] Investment recovered more slowly in recent years, and resulted in a sizeable increase of the net lending position (saving—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).

External Balance, Savings and Investment
(Percent of GDP)



Sources: Statistics Denmark; and Fund staff calculations.

Saving - Investment Balances by Sector
(Percent of GDP)



Sources: Statistics Denmark; and Fund staff calculations.

External Balance Assessment, 2018[1/]		
Methodology	Current account gap (percent of GDP)	REER gap (percent)
EBA current account analysis	3.9	-
Staff assessment	3.9 (+/- 1)	-7.5
Index REER analysis	-	12.5
Level REER analysis	-	11.4

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

1/ Minus signs for the REER gaps indicate undervaluation.

[2] 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.

4. Based on EBA, staff assess the current account to be stronger than the level consistent with medium-term fundamentals, but this assessment is subject to important uncertainties. The IMF's external balance assessment (EBA) model estimates the cyclically-adjusted current account position at 7.9 percent of GDP for 2017, and a current account norm of 4.0 percent of GDP. Taking into account these factors, staff assess the current account gap at around 3.9 percent, which indicates that the external position is stronger than the level consistent with medium-term fundamentals. Assuming 0.52 semi-elasticity of the current account with respect to the real effective exchange rate, this translates into an exchange rate gap of about 5½–9½ percent. This estimate, however, remains subject to considerable uncertainties as it does not account for Denmark-specific factors that would affect the gap:

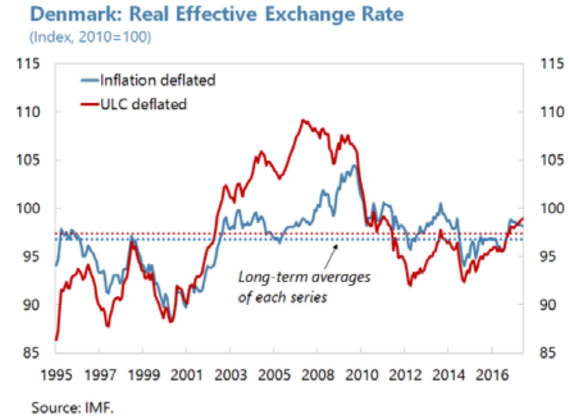
- **Denmark's large pension contributions** arising from the ongoing transition to the fully-funded retirement system, which fund a generous pension income (with replacement rates among the highest in the OECD), create significant structural savings. The effect of higher mandatory individual savings on the national savings is subject to some debate. Some research (e.g., Samwick, 2000 for pay-as-you-go schemes, but similar arguments hold for fully-funded systems) suggests that higher mandated pension savings need not lead to higher national savings, because of substitution effects and borrowing considerations by households. 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. Research by the Riksbank (Fard et al., 2017) also finds that due to their particular corporate structure with overseas subsidiaries, Swedish multinational corporations may be contributing to a higher current account surplus due to the nature of profit repatriation (although they do not estimate the effect due to limited data availability). Similar considerations may apply to Denmark. Analysis by Beusch et al., 2013) shows that current account balances for a group of countries with merchanting characteristics (that includes Denmark) is on average 3 percentage points of GDP higher than other countries.

While the EBA model does not identify domestic policy gaps that explain most of the excess current account surplus, structural policies that raise investment would help reduce the current account surplus. There is scope for higher wage growth, and part of the resulting increased demand can be met via higher imports, supporting further a reduction in the current account surplus.

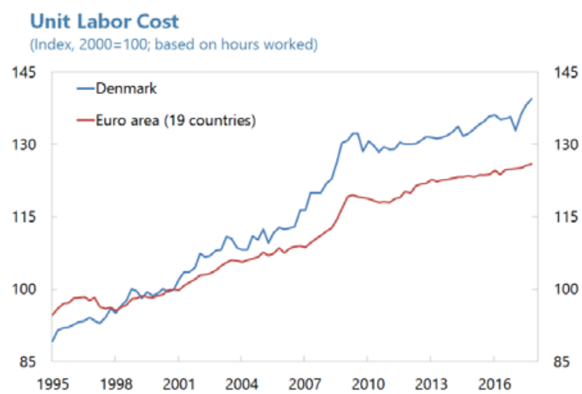
5. REER models and competitiveness indicators suggest a different exchange rate assessment than the EBA current account model, and reinforce uncertainties and difficulties about arriving at an overall external assessment.

- REER models suggest a different exchange rate assessment than the EBA current account model. The level real effective exchange rate (REER) model estimates that the krone is overvalued by about 11.4 percent. The index REER model estimates that the krone is overvalued by about 12.5 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.



Source: IMF.

- 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.

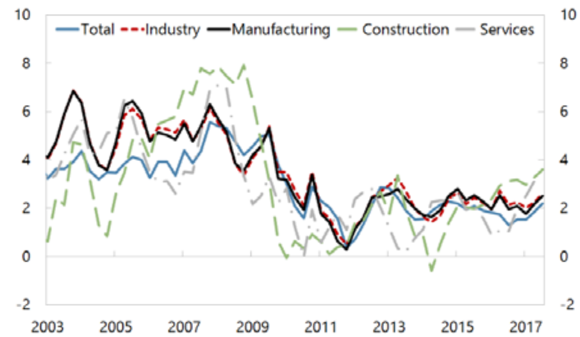


Sources: Eurostat; and Fund staff calculations.

Annex II. A Simple Model for Danish Wage Formation

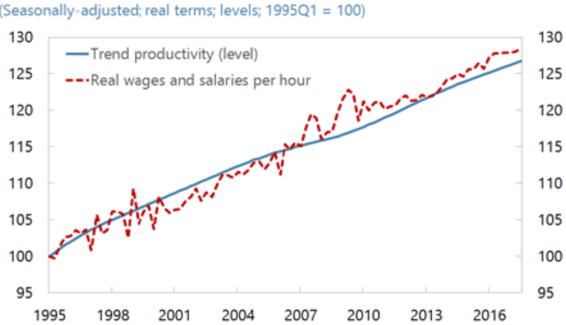
1. Nominal wage developments have followed the economic cycle. Total hourly compensation dropped with the decline in economic activity and slow recovery since the crisis. The average annual nominal y/y growth currently stands at 2.2 percent (through end-2017), from 3.9 percent in the pre-crisis 2000–07 period. Wage increases are markedly higher for procyclical sectors, such as construction, where labor shortages are more pronounced and have exceeded 4 percent annually, although remain well below the level seen in 2008 at the top of the housing boom. Nominal wage increases in the manufacturing sector remain modest at 2.5 percent per year, possibly due to competitiveness considerations from the slow wage rises in other European economies.

Wage Growth
(Nominal total compensation per hour; percent; y/y; 4-quarter average)



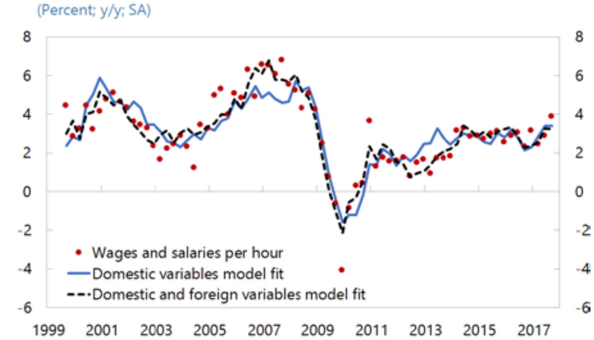
Sources: Statistics Denmark; and Fund staff calculations.

Productivity and Wages 1/
(Seasonally-adjusted; real terms; levels; 1995Q1 = 100)



Sources: Statistics Denmark; and Fund staff calculations.
1/ Productivity is measured as gross-value added to hours worked. Trend productivity is the quarterly HP trend (smoothing parameter = 3,200).

Danish Nominal Wage Growth and Model Fits 1/
(Percent; y/y; SA)



Sources: Statistics Denmark; Eurostat; IMF WEO; and Fund staff calculations.
1/ Total economy wages and salaries. See table below for details.

2. The Danish wage formation is in line with fundamental drivers. A standard equilibrium wage curve model (see Blanchard, 1998 for an exposition) describes Denmark's real wage levels adequately. The regression

$$\log(\text{real wages}) = 1.1 \log(\text{trend productivity}) - 0.04 \text{ unemployment gap}$$

shows a strongly statistically-significant long-term relationship in line with other studies (Sweden 2017 Article IV, Selected Issues, Chapter 2). Augmenting this relationship by a one-step error correction model (ECM) can explain the deviations of the real wage away from its long-term equilibrium with domestic and foreign variables. Table II.1 shows the regression results of the nominal wage growth (wages and salaries) against an error correction term (lagged real wage level and trend labor productivity level) and lagged nominal wage growth, real trend productivity growth, and domestic unemployment gap, the contemporaneous 4-quarter difference in unemployment and inflation expectations, lagged involuntary part-time employment, and foreign variables (lagged German wage growth, 4-quarter differences in euro area unemployment and involuntary part-time employment as measures of foreign labor market slack). The ECM terms in both models are strongly statistically significant and of opposite signs (about 0.3) in line with the expected cointegrating relationship of wages and productivity. A recent pick-up in nominal wage growth is in line with the decline in unemployment, and rise of inflation expectations.

Table 1. Short-Run Models for the Wage and Salary Growth

	Domestic Variables			Domestic and Foreign Variables		
Term	**Estimate**	**Standard Error**	**Statistic**	**Estimate**	**Standard Error**	**Statistic**
Intercept	-0.38	0.38	-0.99	-0.36	0.32	-1.13
Wage.growth$_{t\text{-}4Q}$	-0.13	0.12	-1.07	-0.18	0.1	-1.82
Prod.growth$_{t\text{-}4Q}$	0.06	0.06	0.97	0.08	0.06	1.39
Unem.gap$_{t\text{-}4Q}$	-0.06***	0.02	-3.38	-0.05***	0.01	-4.03
Unem.diff$_t$	-0.02***	0.00	-6.75	-0.01*	0.00	-2.23
Invol.unem$_{t\text{-}2Q}$	-0.58	0.48	-1.23	-0.11	0.37	-0.30
Infl.exp$_t$	0.01*	0.01	2.43	0.01	0.01	1.62
real.wage.grw$_{t\text{-}4Q}$	-0.27**	0.10	-2.88	-0.29***	0.08	-3.65
Trend.prod$_{t\text{-}4Q}$	0.28*	0.13	2.21	0.29**	0.11	2.72
DEU.wage.grw$_{t\text{-}4Q}$				-0.37**	0.12	-3.02
Unem.EA.diff$_t$				-0.01***	0.00	-4.06
Invl.unem.EA.diff$_t$				0.01*	0.00	2.13

Adjusted R^2 = 0.70; model F-statistic: 21.8 on 8 and 64 degrees of freedom, p-value < 0.001.

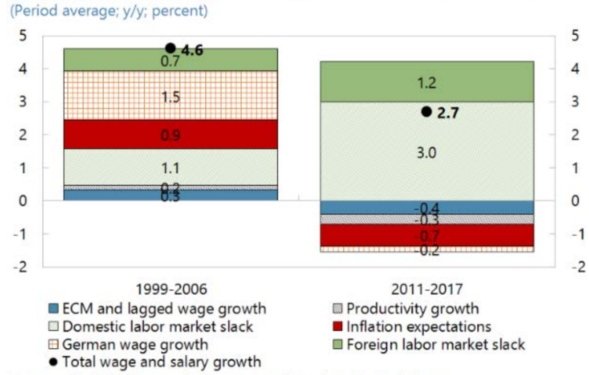
Adjusted R^2 = 0.84; model F-statistic: 34.7 on 11 and 61 degrees of freedom, p-value < 0.001.

Significance levels: *** < 0.001 < ** < 0.01 < * < 0.05.

Source: Fund staff calculations.

3. **Since the crisis nominal wages are determined mostly by labor market slack indicators.** The 2.7 percent average annual growth in wages and salaries per hour since 2011 was primarily due to domestic (and foreign to a lesser extent) labor market slack indicators (unemployment and involuntary part-time employment). The slowdown in productivity growth reduced wages by nearly ¾ percent (including the ECM effect as well), from a positive ½ percent contribution in the earlier period. Low inflation also had a dampening effect on nominal wage formation. Notably, the influence of German wage waned between the two periods, with very little effect on the Danish nominal wage growth in recent years.

Decomposition of Nominal Wages and Salaries Growth
(Period average; y/y; percent)



Sources: Statistics Denmark; Eurostat; and Fund staff calculations.

Annex III. Public Debt Sustainability Analysis

Figure 1. Denmark: Public Sector Debt Sustainability Analysis (DSA)—Baseline Scenario

(in percent of GDP unless otherwise indicated)

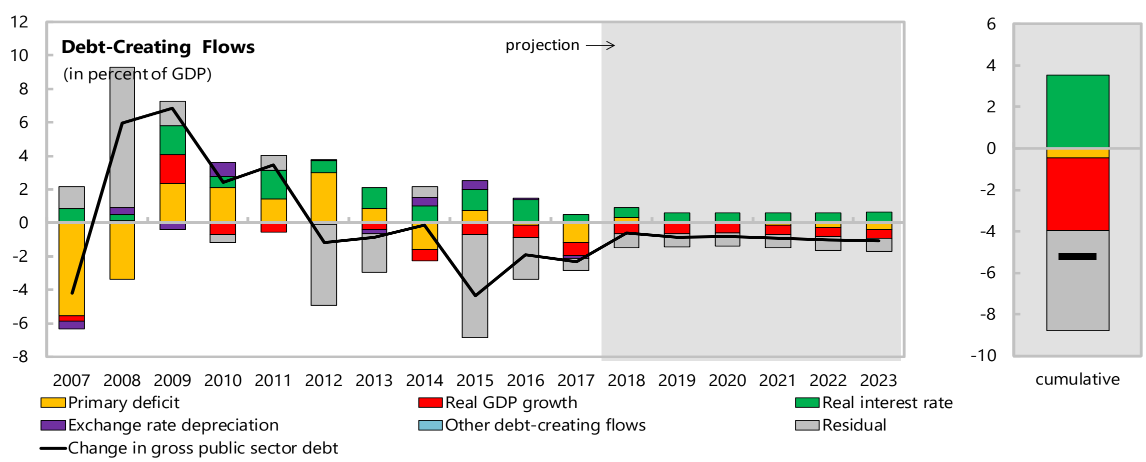
Debt, Economic and Market Indicators [1/]

	Actual			Projections					
	2007-2015 [2/]	2016	2017	2018	2019	2020	2021	2022	2023
Nominal gross public debt	40.2	37.7	35.3	34.7	33.9	33.1	32.1	31.1	30.1
Public gross financing needs	6.2	6.3	4.4	8.1	5.9	6.1	5.4	4.8	4.9
Real GDP growth (in percent)	0.3	2.0	2.1	2.0	1.9	1.8	1.8	1.7	1.7
Inflation (GDP deflator, in percent)	1.8	0.0	1.6	1.8	1.9	2.1	2.2	2.1	2.1
Nominal GDP growth (in percent)	2.1	1.9	3.7	3.9	3.8	3.9	4.0	3.9	3.9
Effective interest rate (in percent) [4/]	4.5	3.5	2.9	3.5	3.5	4.0	4.0	4.2	4.3

As of February 07, 2018		
Sovereign Spreads		
EMBIG (bp) 3/		4
5Y CDS (bp)		11
Ratings	Foreign	Local
Moody's	Aaa	Aaa
S&Ps	AAA	AAA
Fitch	AAA	AAA

Contribution to Changes in Public Debt

	Actual			Projections							
	2007-2015	2016	2017	2018	2019	2020	2021	2022	2023	cumulative	debt-stabilizing primary balance [9/]
Change in gross public sector debt	0.9	-1.9	-2.3	-0.6	-0.8	-0.8	-0.9	-1.0	-1.1	-5.3	
Identified debt-creating flows	1.0	0.6	-1.6	0.2	0.0	0.0	-0.1	-0.2	-0.3	-0.4	
Primary deficit	0.0	-0.1	-1.2	0.4	0.1	0.0	-0.1	-0.3	-0.4	-0.4	0.1
Primary (noninterest) revenue and gra	53.1	52.4	52.0	50.7	50.4	50.1	49.9	49.7	49.5	300.4	
Primary (noninterest) expenditure	53.1	52.2	50.9	51.0	50.5	50.1	49.8	49.4	49.1	300.0	
Automatic debt dynamics [5/]	1.0	0.7	-0.4	-0.1	-0.1	0.0	0.0	0.1	0.1	0.0	
Interest rate/growth differential [6/]	0.9	0.6	-0.3	-0.1	-0.1	0.0	0.0	0.1	0.1	0.0	
Of which: real interest rate	1.1	1.4	0.5	0.6	0.5	0.6	0.6	0.6	0.6	3.5	
Of which: real GDP growth	-0.2	-0.8	-0.8	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-3.5	
Exchange rate depreciation [7/]	0.1	0.1	-0.2	…	…	…	…	…	…	…	
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
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	
Please specify (2) (e.g., ESM and Euro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes [8/]	-0.1	-2.5	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-4.8	



Source: IMF staff.

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 - π(1+g) - g + ae(1+r)]/(1+g+π+gπ)) 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 - π (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).

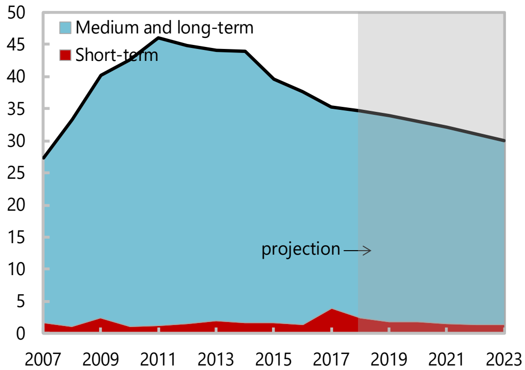
8/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

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.

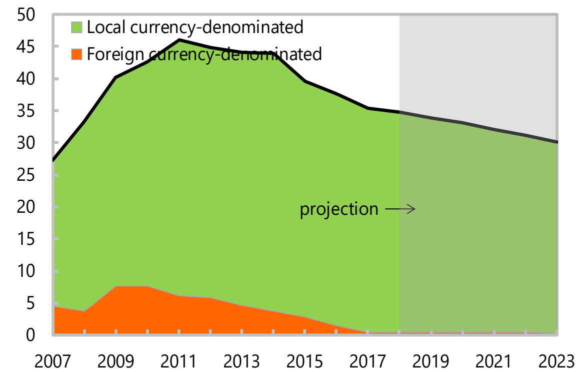
Figure 2. Denmark: Public DSA—Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

By Maturity
(in percent of GDP)



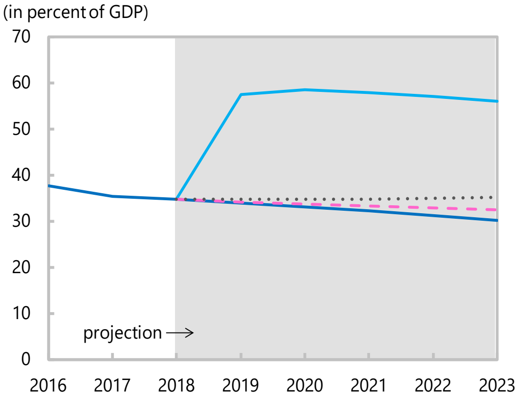
By Currency
(in percent of GDP)



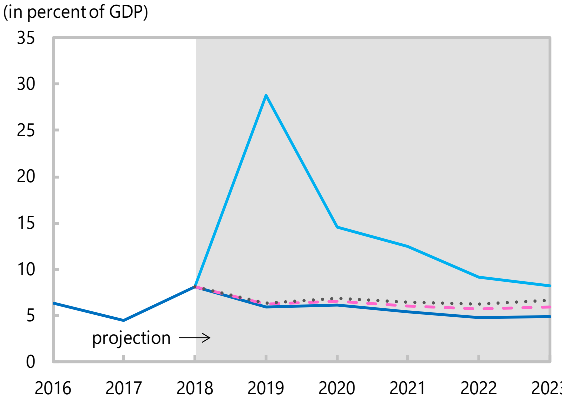
Alternative Scenarios

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	2018	2019	2020	2021	2022	2023
Real GDP growth	2.0	1.9	1.8	1.8	1.7	1.7
Inflation	1.8	1.9	2.1	2.2	2.1	2.1
Primary Balance	-0.4	-0.1	0.0	0.1	0.3	0.4
Effective interest rate	3.5	3.5	4.0	4.0	4.2	4.3
Constant Primary Balance Scenario						
Real GDP growth	2.0	1.9	1.8	1.8	1.7	1.7
Inflation	1.8	1.9	2.1	2.2	2.1	2.1
Primary Balance	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Effective interest rate	3.5	3.5	4.0	4.0	4.0	4.1

Historical Scenario	2018	2019	2020	2021	2022	2023
Real GDP growth	2.0	0.6	0.6	0.6	0.6	0.6
Inflation	1.8	1.9	2.1	2.2	2.1	2.1
Primary Balance	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Effective interest rate	3.5	3.5	4.1	4.2	4.3	4.5
Contingent Liability Shock						
Real GDP growth	2.0	-0.2	-0.3	1.8	1.7	1.7
Inflation	1.8	1.3	1.6	2.2	2.1	2.1
Primary Balance	-0.4	-22.5	0.0	0.1	0.3	0.4
Effective interest rate	3.5	4.1	4.8	4.5	4.2	4.3

Source: IMF staff.

Annex IV. Risk Assessment Matrix[1]

Potential Deviations from Baseline

Source of Risks and Relative Likelihood (High, medium, or low)	Expected Impact if Risk is Realized (High, medium, or low)	Policy Response
High **1. Higher interest rates and tighter financial conditions**	High 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, with adverse wealth effects which would undermine consumption.	Reduce vulnerabilities of household and financial sectors by expanding macroprudential toolkit, with particular attention to lower income groups.
Medium **2. Tightening of domestic capacity constraints**	Medium Labor shortages and capacity constraints could weigh on growth, accelerate wage and price inflation.	Tighten fiscal policy and consider pre-emptive fiscal tightening if conditions warrant it. Move ahead with structural reforms to increase labor supply and integration of migrants into the labor force.
Medium **3. Failure to address macro-financial risks**	High A new housing boom/bust cycle would stretch the balance sheets of highly-indebted households, with severe knock-on effects on the broader economy. A marked a 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 supervisory oversight and use macroprudential and tax policies to discourage further build-up of housing debt. Address bottlenecks in rental market and zoning policies, especially in urban areas. Preventive: Continue implementation of regulatory agenda to bolster banks' buffers. After shock: liquidity support as needed.
High **4. Structurally weak growth in key advanced economies and trade partners**	Medium 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 and lower domestic demand, which has a negative impact on growth.	Allow automatic stabilizers to operate and adjust the pace of fiscal consolidation. Move ahead with structural reforms to increase labor supply and reform product markets.
Medium **5. Retreat from cross border integration/ Protectionism**	Medium/ High Rising trade tensions would have a negative impact on Denmark, being a small globally-integrated open economy with positive trade balance.	Proceed with structural reforms to increase labor supply and reform product markets.

[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 V. Authorities' Response to Past IMF Policy Recommendations

Past Policy Recommendations	Authorities' Actions
Fiscal Policy: A slower pace of consolidation may be appropriate, but with capacity-enhancing reforms in mind, such as earned-income tax credit for low-income earners and bonus deductions for R&D investment. A change in the composition of fiscal spending and revenues was also recommended. These includes shift from consumption and transfers to productive public investment (spending), and from high personal income tax rate reduction to cuts in the mortgage interest deductibility (revenue).	Due to higher-than-expected revenue and some underspending the fiscal position showed faster-than-anticipated consolidation in 2017, partially reflecting a stronger growth outturn. Political constraints limited the chances for large tax cuts in the 2018 budget negotiation, but 2018–2020 fiscal deficits will be pushed up to accommodate costs of past structural reforms. This includes a tax-free withdrawal of early retirement contributions and payback of property taxes during transition to a new real estate valuation system.
Housing Market: Introduce a debt-to-income limit, end the procyclical valuation freezes for land and property taxes, eliminate mortgage interest deductibility, and address supply constraints.	A long-planned property and land tax reform took place in 2017, ending the property valuation freezes and ensuring that housing tax burden will be tied to housing price developments. A modified version of the debt-to-income limit went into effect in 2018.
Financial Sector: Complete the upgrade of the regulatory framework on CRR and BRRD, strengthen the operational independence of the DFSA, enhance regional cooperation on financial stability issues, including through the agreed MOUs.	The resolution framework is largely in place with the final specification of the resolution buffers for SIFIs underway. An agreement on the inclusion of covered bonds in the NSFR definition for MCIs is ongoing as well. A process to establish an internal audit office at the DFSA is underway. A new set of MOUs was agreed upon in early 2018 within the Nordic-Baltic Stability Group covering resolution collaboration practices.
Structural Reforms: Enact product market reforms, such as liberalizing the Planning Act, improving competition in the construction and utilities sectors, and promoting further deregulation in retail trade. Provide greater incentives to benefit recipients to participate in the labor force and reduce inactivity traps, intensify integration programs for migrations.	Amendments to the Planning and Taxi Acts relaxed regulations. Phase I of *JobReform* set ceilings on social assistance and provided incentives to inactive people to participate in the workforce. Phase II of *JobReform* is under consideration. A tripartite agreement allows greater participation of migrants in the workforce, albeit temporarily.

INTERNATIONAL MONETARY FUND

DENMARK

June 4, 2018

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

Prepared By

European Department
(In Consultation with Other Departments)

CONTENTS

FUND RELATIONS

As of April 30, 2018

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)	3,353.50	97.50
Reserve Tranche Position	85.91	2.50
Lending to the Fund		
New Arrangements to Borrow	175.80	

SDR Department:	**SDR Million**	**Percent Allocation**
Net cumulative allocation	1,531.47	100.00
Holdings	1,430.13	93.38

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				
	2017	2018	2019	2020	2021
Principal	...	...	...	...	...
Charges/Interest	0.67	0.88	0.88	0.88	0.88
Total	0.67	0.88	0.88	0.88	0.88

[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 16, 2017. The staff report (IMF Country Report No. 17/158) was published with Press Release No. 17/234 (June 20, 2017).

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

Press conference: The mission held a press conference after the concluding meeting on May 16, 2018.

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 Plus Standard. 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).*

Table 1. Denmark: Common Indicators Required for Surveillance
(As of May 23, 2018)

	Date of latest observation		Date received	Frequency of Data[7]	Frequency of Reporting[7]	Frequency of Publication[7]
Exchange Rates	5/18		5/18	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	3/18		5/18	M	M	M
Reserve/Base Money	3/18		5/18	M	M	M
Broad Money	3/18		5/18	M	M	M
Central Bank Balance Sheet	3/18		5/18	M	M	M
Consolidated Balance Sheet of the Banking System	3/18		5/18	M	M	M
Interest Rates[2]	4/18		5/18	D	D	D
Consumer Price Index	4/18		5/18	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[3]—General Government[4]	2017		2018	A	A	A
Revenue, Expenditure, Balance, and Composition of Financing[3]—Central Government	2017		2018	A	A	A
Stocks of Central Government and Central Government-Guaranteed Debt[5]	2017		2018	A	A	A
External Current Account Balance[8]	3/18		5/18	M	M	M
Exports and Imports of Goods and Services	3/18		5/18	M	M	M
GDP/GNP	Q4 2017		5/18	Q	Q	Q
Gross External Debt	12/17		5/18	Q	Q	Q
International Investment Position[6,8]	12/17		4/18	A	A	A

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.