LAPSE OF TIME

SM/21/84

May 27, 2021

To: Members of the Executive Board

From: The Secretary

Subject: **Denmark—Staff Report for the 2021 Article IV Consultation**

Board Action:	Executive Directors' **consideration** on a lapse of time basis as management has determined it meets the established criteria as set out in Board Decision No. 15207 (12/74); (i) there are no acute or significant risks, or general policy issues requiring a Board discussion; (ii) policies or circumstances are unlikely to have significant regional or global impact in the near term; and (iii) the use of Fund resources is not under discussion or anticipated.
Deadline to Request Board meeting:	**Thursday, June 10, 2021** **12:00 (noon)**
Proposed Decision Deemed Approved:	Monday, June 14, 2021
Provisional Board Meeting Date: (if requested)	Monday, June 14, 2021
Proposed Decision:	Page 34
Publication:	Yes* Press Release will be based on the staff appraisal if there is no request for a Board discussion, as attached.

***Unless an objection from the authorities is received prior to the conclusion of the Board's consideration, the document will be published.**

Questions:	Mr. Segoviano, EUR (ext. 38558) Mr. Harrison, EUR (ext. 35540) Mr. Huidrom, EUR (ext. 37221) Ms. Bricco, EUR (ext. 34206)
Document Transmittal in the Absence of an Objection and in accordance with Board policy:	Friday, May 28, 2021—European Central Bank, European Commission After Board Consideration—Food and Agriculture Organization, Organisation for Economic Cooperation and Development, World Food Programme, World Trade Organization

INTERNATIONAL MONETARY FUND

DENMARK

STAFF REPORT FOR THE 2021 ARTICLE IV CONSULTATION

May 27, 2021

KEY ISSUES

Context: Denmark entered the pandemic on a strong economic footing and utilized its large policy space built over time to successfully address the crisis and lay the ground for a strong recovery. The outlook is for a rebound in activity, but uncertainty remains elevated with risks tilted to the downside. Macrofinancial vulnerabilities persist as housing price growth has accelerated and household debt remains high. The current account declined but remains in surplus.

Policy Recommendations: Policies should support the recovery, safeguard the most vulnerable groups, enhance macrofinancial resilience, and facilitate green and digital transitions. In particular:

- ***Fiscal Policy.*** The fiscal framework should remain flexible given the uncertain outlook and provide a bridge to the economy of the future. If the recovery falters, Denmark should deploy its substantial fiscal space as needed. Once the recovery is fully entrenched, a plan to return to the medium-term objective remains appropriate.

- ***Labor market.*** As the recovery gains momentum, policies should shift from exceptional support to continue strengthening "*flexicurity*" measures to facilitate efficient resource reallocation. Efforts to improve employment prospects for the young, the low-skilled, and the foreign-born should endure.

- ***Green transformation.*** A strategy based on enhanced carbon pricing, reinforced by fiscal incentives across different sectors would help Denmark attain its ambitious emissions goal. Incentives for green investment (*Green Tax Reform* Phase 1) and the planned increase in public investment are welcome. But, given Denmark's climate-related investment needs, more should be done, including creating further incentives for the private sector to step up green investment.

- ***Macrofinancial.*** Targeted policies are required to address vulnerabilities due to high household leverage amid rising housing valuations while supporting the extension of credit to facilitate the recovery. These include tightening macroprudential tools in coordination with balancing tax incentives and improving housing supply. Efforts to further strengthen anti-money laundering and combating the financing of terrorism (AML/CFT) supervision should continue.

Approved By
M. Pradhan (EUR) and M. Gonzalez (SPR)

Discussions took place virtually during April 26–May 11, 2021. The staff team comprised Mr. Segoviano (head), Ms. Bricco, Messrs. Harrison and Huidrom (all EUR). The mission was assisted by Mss. Burova, Jin, Jung, and Noren (all EUR). Mr. Damgaard (OED) participated in the discussions. The mission met with Ms. Krogstrup, Governor of Danmarks Nationalbank; Messrs. Kieler and Haagen, Deputy Permanent Secretaries of the Ministry of Finance; Mr. Berg, Director General of the Danish Financial Supervisory Authority; Ms. Anker, Director General of Statistics Denmark; Mr. Skaarup, Deputy Permanent Secretary of the Ministry of Taxation; other senior officials; and representatives from the Danish Economic Council, social partners, and the financial sector.

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CONTEXT AND RECENT DEVELOPMENTS

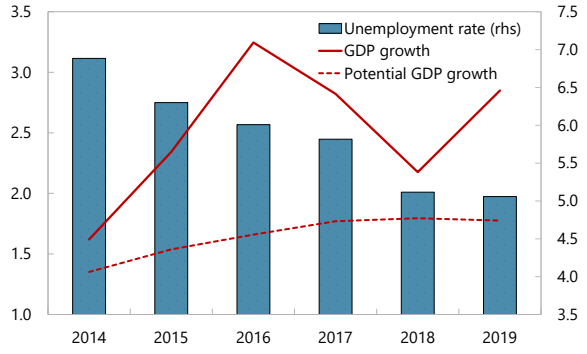
Taking advantage of Denmark's large policy space built over time, the authorities responded decisively to the COVID-19 crisis, with the economy expected to suffer one of the mildest recessions in the region. Looking ahead, the authorities plan to stimulate growth to support the economy of the future—including initiatives that incentivize innovation and the transformation to a green economy—facilitating the reallocation of labor and capital towards viable sectors, and strengthening social safety nets to safeguard the most vulnerable groups, setting Denmark as an example.

1. Denmark entered the crisis on a strong economic footing. Prior to the pandemic, strong institutions combined with sound economic and social policies delivered robust economic performance and high levels of social inclusion. Following structural reforms, a steady economic upswing started in 2014, which gave Denmark substantial buffers. These buffers were used decisively to respond to the COVID crisis (Annex I).[1]

A steady upswing since 2014, with activity growing in tandem with potential and unemployment rate declining…

Real GDP Growth and Unemployment Rate

(Percent)

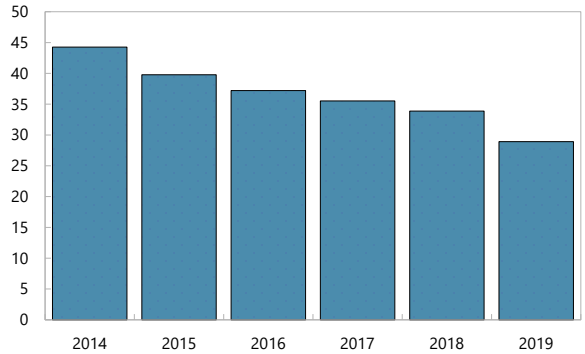


Sources: OECD; Statistics Denmark; and IMF staff calculations.

…gave Denmark sizable buffers, not least fiscal, in the run-up to the pandemic.

General Government Gross Debt

(Percent of GDP)



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

2. Flexible and effective containment and mitigation strategies have helped control the pandemic. The initial containment strategy was swift. In March 2020, even when virus cases were low, the authorities implemented a range of containment measures, including border closure and social distancing, while developing extensive testing. As the pandemic subsided, Denmark announced a careful and gradual lifting of some containment measures beginning April. However, with a second wave of infections in the winter, new containment measures were put in place, quickly bringing down the infection rate. Nevertheless, given possible infection outbreaks, another lockdown cannot be ruled out yet. However, Denmark undertook one of the fastest vaccination rollouts in the European Union and is implementing the use of a corona pass.[2]

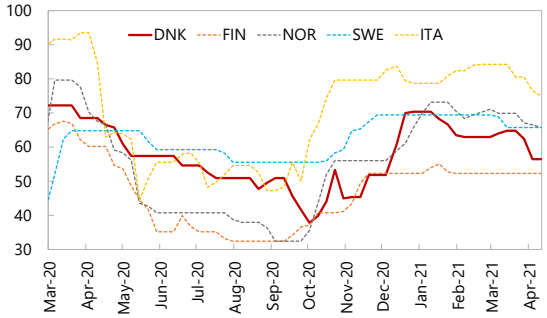
[1] In 2019, growth was solid at 2.9 percent with unemployment at 5 percent. Fiscal space was substantial with an overall surplus close to 4 percent of GDP and gross debt just above 30 percent of GDP.

[2] The Danish Health Authority had announced to have all eligible population vaccinated by the summer 2021. The corona pass, which is planned to be widely used to allow people—who have been vaccinated, recovered from or tested negative for COVID-19—access to public spaces and support a safe reopening of the economy.

Containnment and mitigation strategy in Denmark was flexible and effective…

Oxford Stringency Index 1/

(Index)

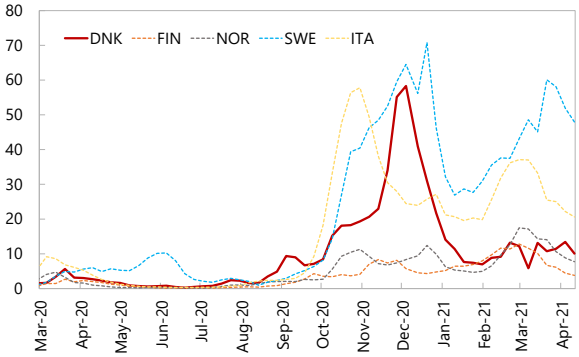


Sources: Oxford University; Bloomberg; IMF staff calculations.
1/ 100 refers to maximum possible containment stringency and 0 refers to no measure.

…and helped control the pandemic.

New Daily COVID-19 Cases

(Per 100,000 inhabitants)

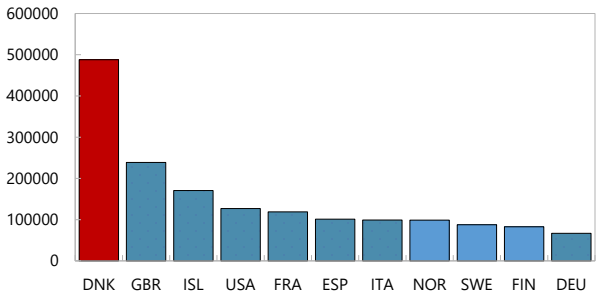


Sources: Bloomberg; IMF WEO; IMF staff calculations.

Denmark scores high on COVID-19 test ratios…

Test Ratios of COVID-19 1/

(Per 100,000 inhabitants)

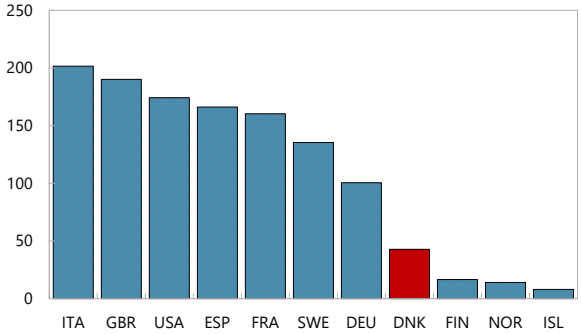


Sources: Wikipedia; National authorities; WEO; and IMF staff calculations.
1/ Data in the chart are as of May 5, 2021. The latest available data for DNK, FIN, FRA, ISL, ITA, NOR, GBR and USA is Week 19 of 2021, DEU and ESP Week 18, and SWE Week 17.

…and its death rate during the pandemic remains one of the lowest in the region.

Cumulative Reported COVID-19 Deaths 1/

(Per 100,000 inhabitants)



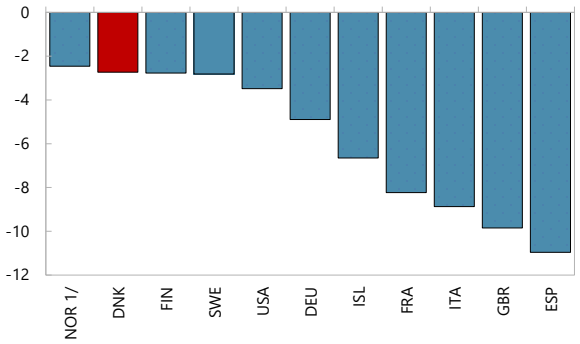
Sources: Haver Analytics; IMF World Economic Outlook; and IMF staff calculations.
1/ Data in the chart are as of May 3, 2021.

3. Previously implemented sound structural policies and large buffers allowed Denmark to endure the crisis better than peers. Real GDP declined by 2.7 percent in 2020—a contraction smaller than in peers. The pandemic hit sectors such as hospitality and travel severely, but their relatively small size in Denmark also meant a smaller overall impact. The overall contraction in 2020 was mainly driven by private consumption and net exports. Private consumption remained weak despite some initial normalization as restrictions were lifted. Net exports declined sharply—driven by services exports and to a lesser extent, goods exports. Even though business investment declined amid considerable uncertainty, residential investment remained strong, thereby mitigating the impact on overall investment.[3]

[3] Growth in real public consumption in 2020 was flat (around -0.1 percent), even though in nominal terms, public consumption grew by about 4 percent. Potential growth is estimated to have declined modestly in 2020, with the output gap estimated at some -1.7 percent of potential GDP.

The economic contraction in Denmark was one of the lowest in the region …

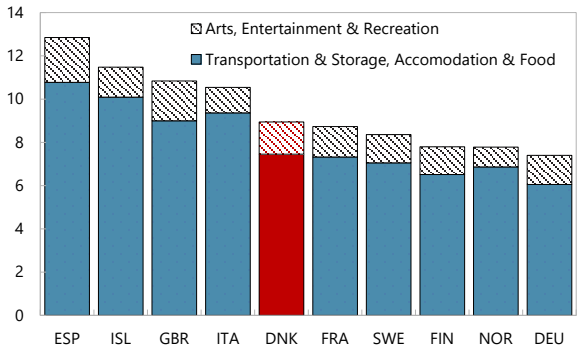
Real GDP Growth in 2020
(Percent)



Sources: Haver Analytics; IMF WEO.
1/ NOR refers to non-oil GDP growth.

…due to, in part, the relatively small size of hospitality and travel sectors—sectors hit worst by the pandemic.

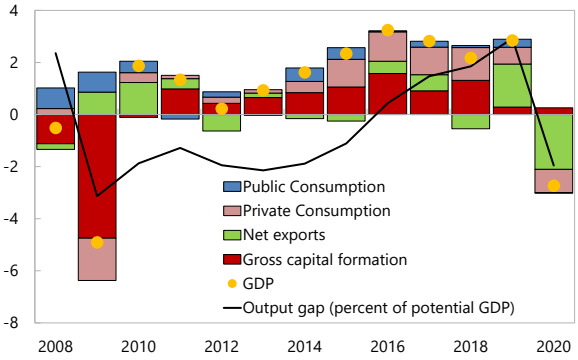
Size of Worst-Hit Sectors during Covid-19
(Percent of total GVA; 2014-19 average)



Sources: Haver Analytics and IMF staff calculations.

Private consumption and net exports mainly contributed to the decline in output…

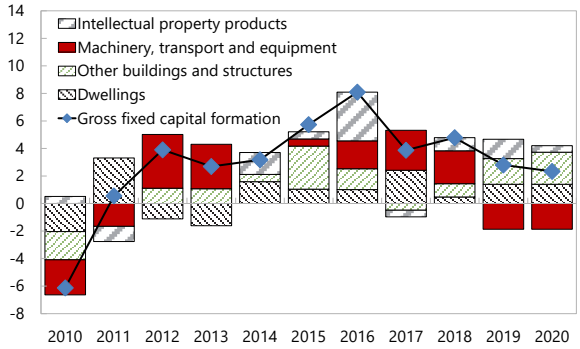
Contributions to Real Growth and Output Gap
(Percent)



Sources: Statistics Denmark; and IMF staff calculations.

…while, residential investment mitigated the overall impact on investment.

Contribution to Gross Fixed Capital Formation
(Percentage contribution to annual growth)



Sources: Haver Analytics; and IMF staff calculations.

4. The strong and swift fiscal support contributed to soften the downturn. Denmark's strong automatic stabilizers provided sizable countercyclical support.[4] In addition, the authorities responded swiftly, deploying a sizeable fiscal package—announced measures as of May 2021 were about 33 percent of 2020 GDP, among the largest in Europe.[5] The support provided by Denmark's strong automatic stabilizers and the milder-than-expected recession seem to have contributed to a low take-up for some of the announced measures (e.g., grants to businesses, guarantees. See Text Table 1).[6] Initial measures include increased spending for additional health care needs and

[4] This includes weaker tax receipts and higher social benefits. Based on Denmark's historical size of automatic stabilizers—one of the largest in Europe—the contribution of automatic stabilizers is estimated to be around half of the overall fiscal stabilization (IMF Fiscal Monitor 2015).

[5] Discretionary above-the-line fiscal support (announced as of May 2021) amounted to some DKK 80 billion or around 3½ percent of GDP—comparable with Nordic peers and other European countries. For instance, above-the-line discretionary fiscal measures averaged about 4½ percent of GDP across Finland, the Netherlands, Norway, and Sweden.

[6] Denmark has a strong track record of transparency in public financial management. These have been enhanced with additional COVID-specific processes—for instance, the take-up of some measures are publicly available here.

budgetary measures to support workers (wage compensation) and businesses (Annex I). As restrictions were eased, the authorities announced stimulus measures to lift private consumption (frozen holiday pay). Additional temporary liquidity measures—including government guarantees and postponement of tax payments—sought to further support activity. Amid the new lockdown in the winter, some of these were resumed/extended, including wage compensation and liquidity measures. As a result, there was a pronounced shift in the budget balance from a surplus of 3.8 percent of GDP in 2019 to a deficit of 1.1 percent in 2020.[7] Gross public debt increased to around 42 percent of GDP in 2020 from about 33 percent in 2019—well below the 60 percent EU threshold.[8]

Text Table 1. Denmark: Policies in Response to COVID-19 (2020 and 2021) 1/

	Announced in DKK bn	Uptake in DKK bn	Announced % GDP	Uptake % GDP
Grants to businesses	35.8	22.6	1.5	1.0
Employment support & unemployment benefits	30.8	20.9	1.3	0.9
Boosting business activity	9.6	6.5	0.4	0.3
Consumption support to Households	2.2	2.2	0.1	0.1
Upskilling & Education	1.1	1.1	0.0	0.0
Total above the line	**79.5**	**53.3**	**3.4**	**2.3**
Below the line measures				
Liquidity measures: Tax deferrals (2020 & 2021)	318.8	206.0	13.7	8.9
Guarantees (inc. trade credit insurance)	82.2	36.5	3.5	1.6
Other below the line:				
Loans (2020 & 2021)	264.0	40.8	11.4	1.8
Equity injections	18.0	1.2	0.8	0.1
Total below the line	**683.0**	**284.6**	**29.4**	**12.2**
Other significant measure not affecting the fiscal budget:				
Early release of frozen "Holiday Pay" from pension savings 2/	88.0		3.8	

1/ Announced and uptake information is as of May 2021.
2/ Due to a new holiday pay law in 2020, one year's worth of holiday pay was frozen until employees retire. The frozen holiday pay is prematurely released to the employees in 2020 and 2021 to stimulate the economy.

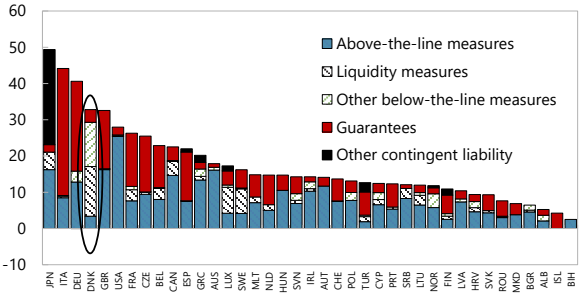
[7] The deficit seems limited in the light of the downturn and the size of the announced fiscal package. This is explained by various factors, including the relatively low take-up of some measures, large revenues from the pension yield tax, and the fact that the disbursements of frozen holiday allowances were taxed as personal income, which increased tax revenue significantly in 2020.

[8] In addition to the deficits in 2020, the increase in gross public debt reflects temporary below-the-line measures—such as liquidity support and guarantees—which are recognized as gross debt according to EMU definition.

Announced fiscal package was among the largest in Europe.

Fiscal Package in Response to Covid-19, 2020 1/

(Percent of GDP)



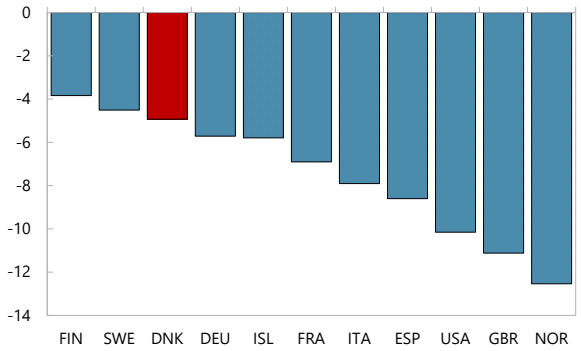
Sources: National authorities; and IMF staff calculations.

1/ Informaton for Denmark is as of May 2021. Liquidity measures denote deferral of tax payments or accelerated refund of tax credits. Other below-the-line refers to measures directly affecting govt. assets and liabilities (e.g. govt. loans, equity injections or asset purchases).

The overall fiscal balance deteriorated by some 5 percentage points of GDP in 2020.

Change in Overall Fiscal Balance, 2020-19

(Percentage point of GDP)



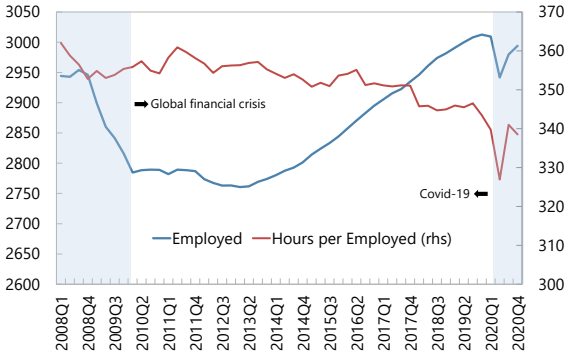
Sources: IMF, World Economic Outlook; and IMF staff calculations.

5. Unprecedented policy measures supported the labor market. Employment and hours dropped sharply during the initial phase of the pandemic, but quickly recovered, thanks to a comprehensive suite of measures, including wage compensation and workshare arrangements. These measures included 'skin-in-the-game' features to ensure that viable firms were supported.[9] As restrictions were eased, the measures were gradually rolled back to facilitate labor market flexibility—a key element of the Danish *flexicurity* model (Labor Section). However, the new wave of infections and attendant restrictions stalled the labor market recovery and prompted the authorities to reintroduce the support measures. Overall, the hit on the Danish labor market remained milder than in peers. Unemployment in 2020 increased slightly to 5.6 percent from 5 percent in 2019.[10]

The pandemic hit the Danish labor market, with employment (extensive margin) and hours (intensive margin) declining…

Employed and Hours per Employed: Denmark

(Thousands of persons; hours)

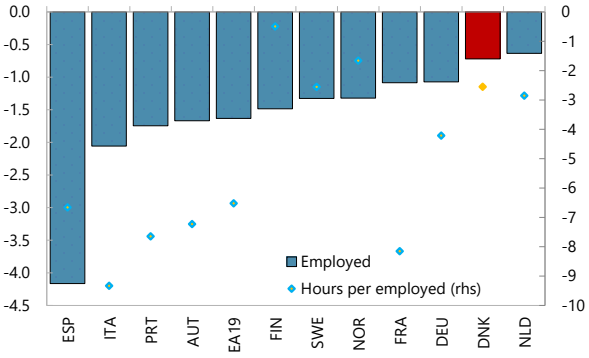


Sources: Haver Analytics; and IMF staff calculations.

…but the adverse impact remained milder than peers.

Employed and Hours per Employed

(Percent; growth 2020 over 2019)



Sources: Eurostat; and IMF staff calculations.

[9] For instance, in wage compensation schemes, employers were required to contribute a share of wage compensation (10–25 percent), thus disincentivizing prolonged usage by businesses not deemed viable in the long run.

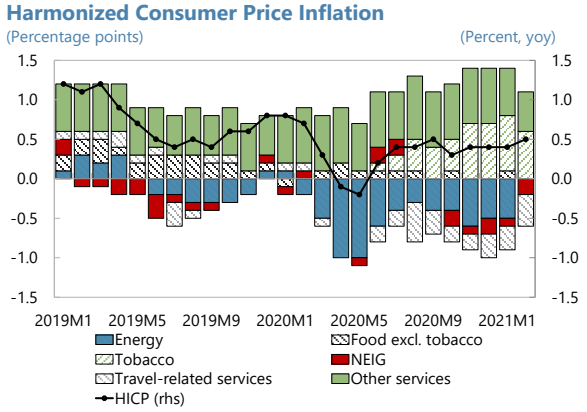
[10] Wage growth (private sector) saw some moderation to about 1.9 percent from about 2 percent in 2019.

6. A comprehensive policy package to support financial stability was deployed. As the crisis unfolded, measures to support household and corporates mitigated liquidity and credit risks. High corporate cash buffers and tax deferral schemes further supported liquidity. Danmarks Nationalbank (DN) introduced an extraordinary lending facility and activated swap lines with the US Fed and the ECB. The release of the countercyclical capital buffer (CCyB) provided additional lending and loss-absorbing capacity for banks and credit growth rebounded. However, amid strong capital and liquidity buffers, credit quality has deteriorated for some corporates, leading to higher impairment charges.[11]

7. Inflation declined in 2020 in line with weak activity. HICP headline inflation was 0.3 percent in 2020—a decline from 0.7 percent in 2019—driven by a drop in energy prices and prices of travel-related services. HICP core inflation, however, saw little change from 2019, remaining around 0.9 percent.

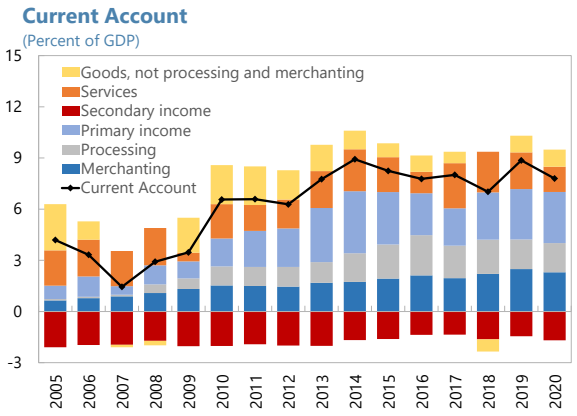
8. The current account shrank but continued to remain in surplus. The decline was mainly due to a deteriorating services exports and to a lesser extent, merchanting goods.[12] Staff assess the external position to be stronger than implied by medium-term fundamentals and desirable policies. But this assessment is subject to important uncertainties (Annex V). Structural policies that aim at raising investment, including climate and digital-related, and through a gradual improvement in capital markets would help reduce the surplus.

HICP headline inflation declined, driven by drop in prices of energy and travel-related services.



Source: Danmarks Nationalbank.

Deteriorating services exports reduced the current account, though it continued to remain in surplus.



Sources: Statistics Denmark; and IMF staff calculations.

[11] These are likely to increase further once tax deferral programs and other support schemes expire. Nevertheless, the 2020 FSAP and DN stress test results suggest that credit institutions are broadly resilient to solvency and liquidity risks.

[12] The current account surplus stood at 7.8 percent of GDP in 2020, a decline from 8.9 in 2019. This reflects a rise in investment from 22.7 percent of GDP in 2019 to 23.2 in 2020, and a decline in savings by about 0.6 percentage point.

9. Denmark aspires to become one of the most climate-friendly countries in the world. In June 2020, its parliament overwhelmingly passed a new climate law that aims to reduce greenhouse gas emissions by 70 percent below 1990 levels by 2030, with net zero emissions targeted for 2050—more ambitious than the EU's target to cut emissions by 55 percent. By crafting an effective climate policy that protects the majority of the people and allows adequate returns on investment, Denmark's strategy to make large cuts in its emissions is more attainable. Importantly, Denmark could help the world cut down much more than its own emissions by paving the way on how to do mitigation right (Annex III).[13]

OUTLOOK AND RISKS

10. The near-term outlook is for a rebound in activity. The baseline outlook is predicated on the continued rollout and increased availability of vaccines by the second half of this year. This would result in a rapid normalization of private consumption, which is envisaged to continue in 2022.[14] Net exports are also expected to rebound during 2021–22 as economic prospects improve in major economies and trading partners, such as China, Germany, and the United States. The momentum in investment—which tends to be intertwined with trade—should gain strength in 2022 on the back of various initiatives that incentivize green investment and digitalization; this is also expected to bring down the current account. From a sectoral perspective, the rebound is envisaged to be uneven—with robust activity in industry, especially construction, while services will remain relatively subdued (Figure 2). Labor markets will continue to improve, supporting wages and consumption. Inflation is expected to inch up as the negative output gap gradually closes. Thanks to various initiatives to raise investment and labor supply, potential growth is expected to pick up in the medium term, thus helping to limit the pandemic-induced scarring (Potential Growth Section).

11. Near-term risks to the outlook remain high and dominated by pandemic developments. On the downside, the recovery could be impeded by further waves of infections, including new virus variants, and a slower-than-expected rollout of vaccinations, both in Denmark and abroad. Conversely, faster-than-expected distribution of vaccines globally would boost confidence and economic activity. In the near-to-medium term, a disorderly reallocation towards a different post-pandemic economic landscape poses a downside risk. Amid high uncertainty, risks remain tilted to the downside.

12. Macrofinancial vulnerabilities remain elevated. Household leverage increased further during the pandemic and housing prices rose sharply.[15] A domestic or regional house price

[13] Denmark ranks second among 76 countries in the MIT's Green Future Index which assesses countries on their progress and commitment toward building a low-carbon future.

[14] Private consumption will be further supported by policy measures to raise household purchasing power. Compensation schemes have buoyed household disposable incomes. The disbursement of holiday pay funds during the spring would provide an additional boost (Danmarks Nationalbank 2021).

[15] Household leverage was high prior to the pandemic, but overall house price growth had started stabilizing and interest rate risks were abating with the deployment of a comprehensive suite of policies. The household credit-to-GDP ratio increased by 3 percentage points from 2019 to 112.3 percent by 2020:Q3.

correction, triggered possibly by a reassessment of fundamentals or tighter global financial conditions, could ignite adverse feedback loops and weigh on consumption growth. This would be exacerbated by the high interconnectedness of mortgage credit institutions (MCIs), pension funds, and insurance companies given their dependence on the housing sector. Commercial real estate (CRE) activity declined sharply and, though bank exposures to CRE are manageable, exposures through investment and pension funds warrant monitoring. Other downside risks include a larger-than-expected increase in NPLs due to a protracted recession or a faster-than-warranted winding down of support measures, and bank spillovers from foreign exposures/funding constraints including through covered bond markets.

Authorities' Views

13. The authorities broadly concur with staff's assessment of the outlook and risks. They expect a strong rebound in the second half of this year which will continue into 2022, as the pandemic wanes at home and abroad. Amid high uncertainty, they see both downside risks—slower rollout of vaccines, new virus variants—and upside risks—faster roll out of vaccines, stronger private consumption due to pent-up demand—to the outlook. They expect limited scarring from the pandemic. The authorities see the high current account surplus as a result of structural features of the economy, including high pension savings, and not because of imbalances or distortions from policies. The authorities agree that macrofinancial vulnerabilities stem largely from accelerating house prices amid high and increasing household leverage.

POLICIES FOR A BALANCED RECOVERY

Policies need to support a sustainable and inclusive recovery while preserving macrofinancial stability. Fiscal policy should remain flexible amid the uncertain outlook and provide a bridge to the economy of the future by facilitating green and digital transitions. Current developments warrant tightening macroprudential tools while deploying tax and housing supply policies. Efforts to further strengthen cross-border anti-money laundering supervision should continue.

A. Macroeconomic Policies

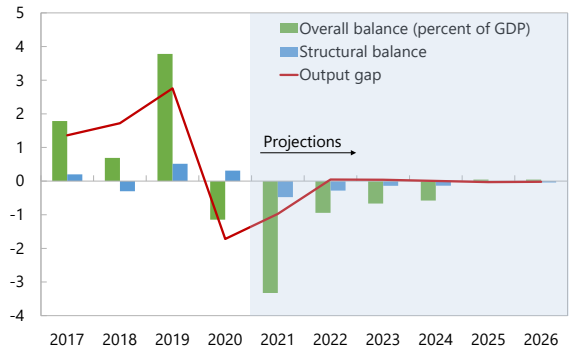
Fiscal Policy

14. Fiscal policy is supporting the recovery and the economic transformation. The fiscal deficit this year is expected to deteriorate on the back of continued COVID crisis support measures—compensation schemes for businesses and capital transfers to corporations—and facilitating the green and digital transformation.[16] The fiscal framework in 2021 includes targeted measures—such as support for the hospitality sector, and upskilling and special training for the

[16] According to the proposed Danish Recovery and Resilience Plan (April 2021), Denmark is expected to receive about 11½ DKK billion during 2021-25 (3¾ DKK billion in 2021). Around 60 and 25 percent of these funds are planned for the green and digital transitions, respectively.

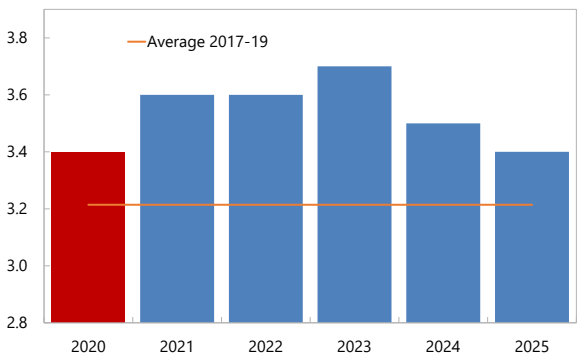
worst-hit areas.[17] In the medium term, the fiscal stance—in terms of the structural balance—is envisaged to remain broadly neutral in line with the authorities' medium-term objective of zero structural balance in 2025 (Convergence Programme 2021).[18] In addition to unwinding the extraordinary measures, the fiscal plan entails a gradually declining path of public consumption as share of GDP, while accommodating a welcome planned increase in public investment. During 2021–25, public investment as share of GDP is planned to increase to levels higher than during pre-COVID, peaking at around 3.7 percent of GDP in 2023.[19,20] Public gross debt and financing needs are expected to stabilize in the medium term at around 42 percent and 7 percent of GDP respectively.[21] Staff assess that Denmark has substantial fiscal space over the medium term (DSA). But long-term sustainability hinges on the continued implementation of the pension reform that links retirement age to life expectancy (OECD 2019).

Overall fiscal deficit will deteriorate in 2021; structural balance is envisaged to close in the medium term.



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

Public investment is planned to increase relative to the pre-COVID period.



Source: Denmark's Convergence Programme 2021.

15. The fiscal stance seems appropriate for the baseline growth projection and the fiscal framework should remain flexible given the uncertain outlook. In the near term, it would allow the authorities to continue supporting lives and livelihoods until the recovery is well-entrenched, facilitate reallocation, and support reforms for the economic transformation. The broadly neutral stance in the medium term would help protect buffers—in view of significant future health care costs and adverse demographics.[22] Importantly, given the uncertain outlook, fiscal policy should

[17] Other measures—such as disbursements of frozen holiday pay—are more broad-based but seek to support aggregate demand.

[18] The projected path of structural deficits is also compliant with the current Danish Budget Law: a limit on annual structural deficits of ½ percent of potential GDP (or structural balance of -½ percent).

[19] This refers to government gross fixed capital formation (Convergence Programme 2021).

[20] The fiscal plan targets growth in real public consumption not to exceed an average of 0.9 percent during 2023–25 (Convergence Programme 2021).

[21] Gross debt and gross financing needs were about 33 percent and 1½ percent of GDP respectively in 2019.

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

remain flexible. If the recovery falters, Denmark should deploy its substantial fiscal space to allow its strong automatic stabilizers to operate fully with the possibility for discretionary loosening as needed. Once the recovery is fully entrenched, a plan to return to the medium-term objective remains appropriate.

16. Staff welcome the ongoing review of the Budget Law. According to the current Budget Law, the annual structural deficits must not exceed ½ percent of potential GDP. Given the uncertain outlook, more flexibility to deal with cyclical challenges and reduce the risks of premature fiscal tightening is desirable. Over the longer term, the framework should also allow policy to respond to demographic headwinds and public investment needs.

17. Fiscal policy is designed to support the economy of the future. Several initiatives—notably, the *Green Tax Reform*—and funds from the 2021 budget (*Digitization Fund*) and *EU Recovery Facility* will facilitate green and digital transitions while boosting jobs and reducing emissions.[23] Phase 1 of the *Green Tax Reform*—includes a net tax relaxation followed by an increase in energy taxes (Annex III). The initial tax relaxation would incentivize green investment. The planned increase in public investment is welcome. But more needs to be done, especially given Denmark's sizable climate-related investment needs (Investment Section). Staff recommend using available fiscal space to raise public investment as much as efficiently possible—keeping implementation on time, budget, and with the intended impact—while being compliant with the Budget Law and the medium-term objective. The planned increase in energy taxes (*Green Tax Reform*) is envisaged to have a small impact on emissions; henceforth, concrete and credible plans are warranted given Denmark's ambitious emission targets. This calls for specifying the level and base of carbon taxation and creating further incentives for the private sector to step up green investment.

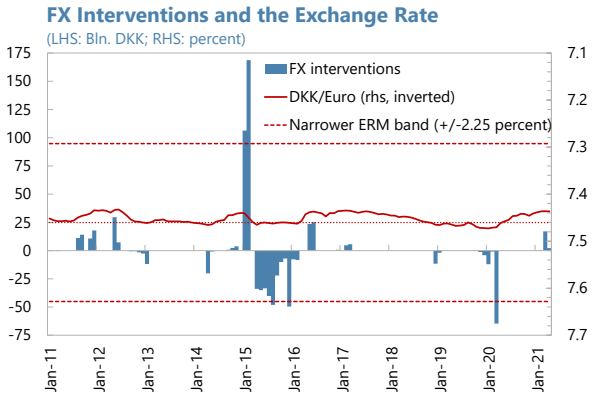
18. To support Denmark's emission targets, the authorities should adopt a comprehensive strategy. This would involve enhanced carbon pricing, reinforced by fiscal incentives across different sectors and the use of revenues from carbon pricing to cut labor taxes to boost the economy in a balanced manner (Annex III). The proposed strategy would provide powerful incentives for climate mitigation, while shielding households and firms from the impact of higher energy prices. Staff recommend spreading measures across different sectors in a manner that avoids excessive carbon prices. "Feebates"—*fees* on products with high emissions combined with *rebates* on products with low emissions—are recommended for sectors with high emissions, such as transportation and agriculture. Because feebates raise the costs of producers who deploy unsustainable practices but reward them as they shift to lower emission technologies and processes, this program can deliver a fair low-carbon transition that preserves profitability and jobs. By crafting an effective climate policy that protects the majority of people and that allows adequate returns on investment, Denmark's strategy to make large cuts in its emissions would be more attainable.

[23] In the transportation sector, the agreement on green transition of road transport (December 2020) includes funding to increase the number of green vehicles by 775,000 in 2030.

Monetary and FX Policy

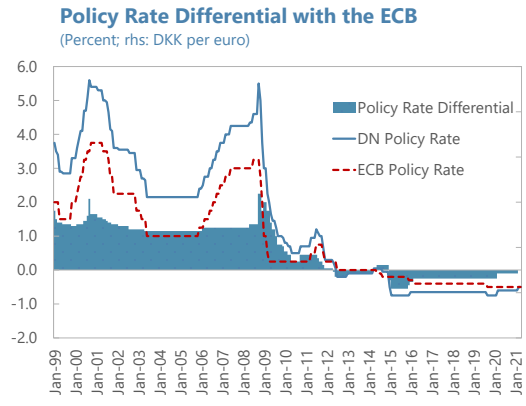
19. The central bank successfully maintained the peg against depreciation pressures at the onset of the pandemic. Along with interventions to support the currency, the DN narrowed the policy rate spread vis-à-vis the ECB in March 2020. The DN also launched an extraordinary lending facility and activated swap lines with other central banks. [24,25] The DN intervened in recent months to ease appreciation pressures. It also reconfigured its policy rates in March 2021 to reduce the volatility of money market rates.[26]

The DN during the crisis successfully managed the peg with USD10 billion in FX interventions…



Sources: Haver Analytics, IMF staff calculations.

…and raising the policy rate to -0.6 percent, narrowing the spread to the ECB policy rate by 15 basis points.



Sources: Danmarks Nationalbank, ECB, IMF staff calculations.

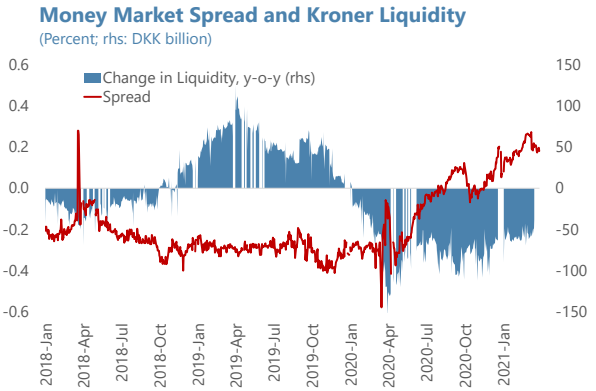
20. The exchange rate peg continues to serve Denmark well, thus the authorities should stand ready to defend it. The policy provides a framework for low and stable inflation in Denmark. The DN should continue to use FX interventions for short-term pressures, and interest rate adjustments for sustained pressures such as from an asymmetric recovery vis-à-vis the rest of Europe.[27] Staff welcome the harmonization of reserve rates and the narrowing of the rate corridor which will help reduce the volatility of money market rates.

[24] At the onset of the pandemic, institutional investors unwound currency hedges following sharp declines in the value of their foreign exposures causing depreciative kroner pressure.

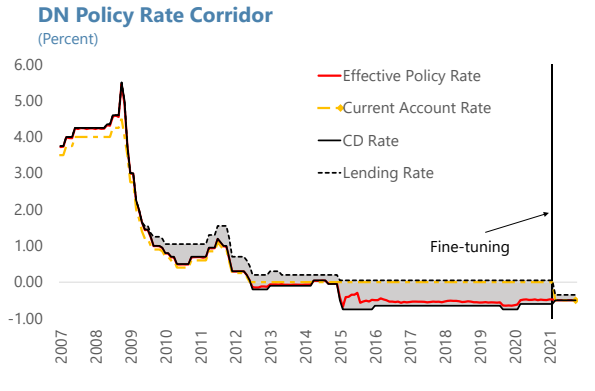
[25] The DN activated swap lines with the US Fed and the ECB. The US Fed swap line was extended till September 2021. As of December 2020, 27 percent of the USD30 billion made available has been drawn at an average rate of 0.32 percent while the ECB line is yet to be drawn.

[26] The certificates of deposit (CD) rate was raised 10 basis points to -0.5 percent thus closing the spread vis-à-vis the ECB policy rate. Also, the rate on the current account, in which financial institutions could deposit cash up to certain limits, was decreased to 50 basis points to -0.5 percent and the account limits were removed. Finally, the lending rate was reduced to -0.35 percent from 0.05 percent. Staff calculate the effective reserve rates, based on published current account limits, to have declined 4 basis points to -0.5 percent.

[27] The DN adjusts the interest rate spread relative to the ECB's monetary policy rate in response to krone pressures but also influences the exchange rate using interventions financed via its FX reserves.



Sources: Danmarks Nationalbank, Refinitiv, IMF staff calculations.



Sources: Danmarks National Bank, Haver Analytics, IMF staff calculations.

Authorities' Views

21. The authorities agree with staff that the fiscal stance is adequate. They deem fiscal policy to be sufficiently flexible to respond to the COVID crisis. Regarding the review of the Budget Law, the authorities share staff's view that more flexibility to respond to cyclical challenges and structural needs is desirable. The authorities acknowledge projected emission shortfalls relative to the target based on current policies. They emphasize that plans are underway (Phase 2 of Green Tax Reform) to strengthen carbon pricing and recognize the need for promptly defining the tax framework—including the base and level of carbon taxation—to provide incentives for the private sector to scale up green investment. This would be relevant for ensuring that technological improvements can support the emission target. The authorities view planned public investments as adequate. The DN reiterated that the exclusive objective of monetary policy is to maintain the peg.

B. Macrofinancial Policies to Address Financial Imbalances

Financial Sector

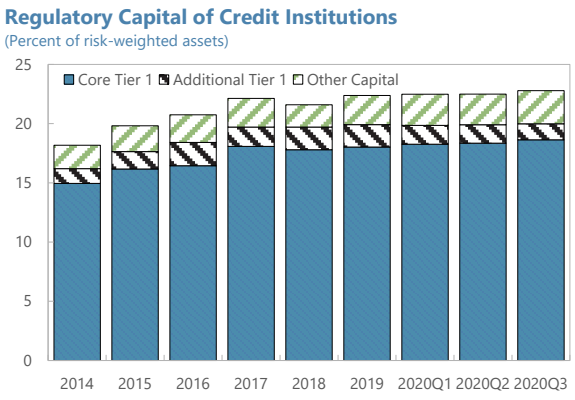
22. Banks remain profitable, liquid, and highly capitalized, though in a challenging environment.

- ***Profitability.*** Amid pressures to net interest margins, profits had remained solid due to higher administration margins, net fee income, and low impairment charges.[28] In 2020, however, higher impairment charges reduced profitability. Going forward, profitability will remain challenged by the low interest rate environment in Denmark and globally. Setting interest rates on deposits and loans remains the banks' commercial decision. This is an essential market mechanism to preserve the efficiency of the financial system.

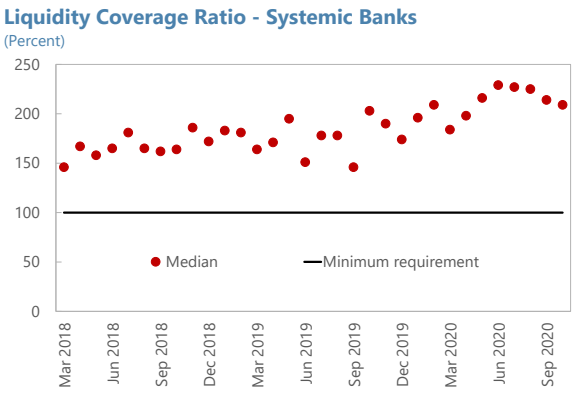
[28] Despite the partial phase-in of IFRS 9, impairment charges remained subdued due to historically low NPLs through 2019. Recognition of expected credit losses under IFRS 9 increased loan impairment charges (DN 2018). Small- and middle-sized banks held higher impaired loans than large banks, though they were on a declining path.

- ***Liquidity.*** Banks' liquidity coverage ratios remain comfortably above the 100 percent minimum requirement.

- ***Capitalization.*** Before the pandemic, capital buffers had been strengthened.[29] The Systemic Risk Council (SRC) had recommended that the CCyB, already at 1 percent, be increased to 1½ and 2 percent by June and December 2020, respectively. As the pandemic struck, the CCyB was fully released and planned increases were cancelled. Capital was preserved with the suspension of dividend payments and share buybacks, consistent with ESRB and EBA guidelines, as well as EU regulatory relief.[30]



Source: European Central Bank.



Source: Danmarks Nationalbank.

23. The Financial Sector Assessment Program (FSAP) and DN stress tests show that banks and MCIs appear resilient to solvency and liquidity stress.[31] The analyses also suggested that banks can withstand the failure of large exposures and the introduction of Basel III output floors.[32] All banks survived severe and extended funding withdrawals without external support. The December 2020 DN stress test (ST) shows that all systemic banks meet their risk-based minimum requirements. However, under a "most severe scenario," some systemic banks fall short of their capital buffer requirements (DN 2020 ST).

[29] The Danish Financial Supervisory Authority (DFSA) completed the Banking Recovery and Resolution Directive (BRRD) that subjected banks to hold MREL requirements and Mortgage Credit Institutions (MCIs) to hold debt buffers (Article IV 2019 and Finanstilsynet). Several amendments to BRRD (BRRD2) came into force January 1, 2021 (DN 2020).

[30] The European Parliament's temporary relaxation of some Capital Requirements Regulation (CRR) provisions led to higher capital ratios for some banks.

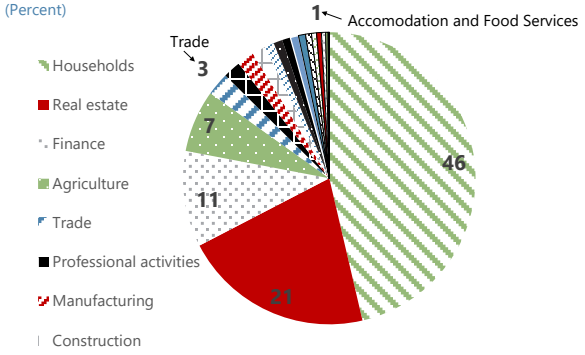
[31] The 2020 FSAP ST results indicate that while all SIFIs would meet their minimum capital requirements, a few would need to partially use their capital conservation and/or SIFI buffers. The 2020 FSAP ST was performed with information up to 2019:Q3. While the macroeconomic scenario in the ST included a deeper drop in output and larger increase in unemployment than actual events so far, a direct comparison of the scenario with the current situation is unfeasible. This is due to the different dynamics of macroeconomic and financial variables, including the length of the recession and shape of the recovery, and complex elements playing out in the actual economic environment, including the policy responses.

[32] The implementation of 2017 Basel reform—which has been delayed until 2023 and includes the introduction of the output floor from 2028—will increase minimum risk-weighted exposures thus increasing capital requirements.

24. Structural features of the system together with policies to support households and corporates during the pandemic reinforced banking sector strength.

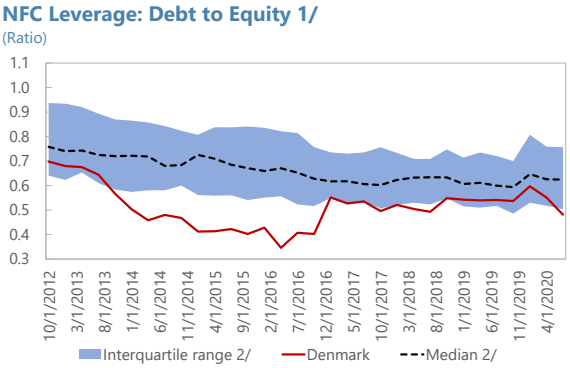
- **Banks were not particularly exposed to contact-intensive sectors hit hardest by the pandemic.** Exposures to sectors such as trade, hotels, and restaurants, as well as to households supported by the wage compensation scheme were relatively small.[33]

Banks were not particularly exposed to contact-intensive sectors ….



Sources: Danmarks Nationalbank, IMF staff calculations.

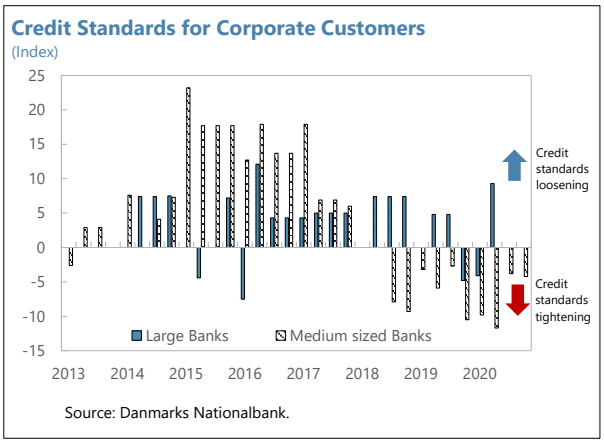
Corporate leverage had declined before the pandemic.



Sources: ECB, IMF staff calculations.
1/ Debt includes debt securities and loans
2/ Sample contains 24 EU countries, Bulgaria, Denmark, Croatia and Romania

- **Danish corporates entered the pandemic with low leverage and high liquidity.** As the pandemic struck, business fixed cost support and tax deferral programs helped cushion corporate liquidity.[34]

25. However, vulnerabilities remain in the financial sector. The current outlook with very loose financial conditions, increasing asset prices—with rapid and significant growth in residential real estate prices—and prospects for a rapid recovery provide ground for risk buildup. The financial system is large and highly interconnected. Before the pandemic, lending surveys indicated that some banks were relaxing credit standards. Following the crisis, banks assessed credit quality to have deteriorated, leading to higher impairment charges in 2020 (Figure 4) which are likely to increase further once



Source: Danmarks Nationalbank.

[33] Trade, hotel and restaurant, and manufacturing industries comprised 5.5 percent of bank exposures prior to the pandemic and lending to these segments decreased 8.8 percent y-o-y in 2020. Exposures to households that received support through the wage compensation scheme comprised about 10 percent and 6 percent of households' debt to banks and MCIs, respectively.

[34] Staff analysis shows that the Danish liquidity gap—the sum of negative cash flows across illiquid firms in Denmark—would have been roughly 3 percent of GDP higher absent policy support (Ebeke et. al, 2020).

corporate support policies are unwound.[35] Close regional financial system interlinkages expose banks to potential regional spillovers.

26. Staff welcome measures to limit the economic impact of the pandemic. Unless the risk buildup subsides markedly or there is a new negative shock to the economy, the CCyB should be increased with an appropriate phase-in period. Enhanced monitoring of credit cycles in different sectors would be appropriate. If credit is identified as fueling overheating-prone sectors, differentiated sectoral risk weights could be considered to ensure capital buffers remain consistent with higher risks in such sectors. Staff recommend that guidance on dividend payouts and share buybacks remain in place as needed to protect capital buffers. The DFSA's adjustment of the phase-in period for minimum requirement for own funds and eligible liabilities (MREL) subordination requirements was appropriate given funding market conditions.[36]

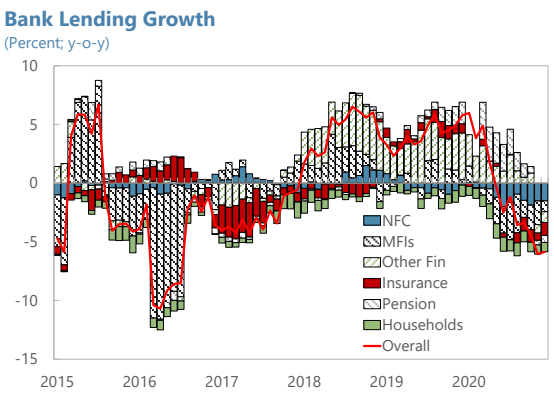
27. The newly implemented credit registry offers a unique opportunity to develop a fully risk-based prudential framework. This would allow timely monitoring of risk dynamics for individual exposures.[37] Moreover, staff recommend combining this proposed framework with macroprudential stress tests to quantify losses due to contagion across MCIs, the pension and household sectors to improve calibration of macroprudential tools and support financial stability surveillance.

28. Non-life insurance and pension funds appear broadly resilient under the 2020 FSAP stress tests. The industry seems largely able to withstand severe asset and housing price shocks. Key recommendations include strengthening on-site and cross-border business supervision, improving macroprudential stress-tests, intensifying data-quality checks, and enforcing high-quality supervision reporting (FSAP 2020).

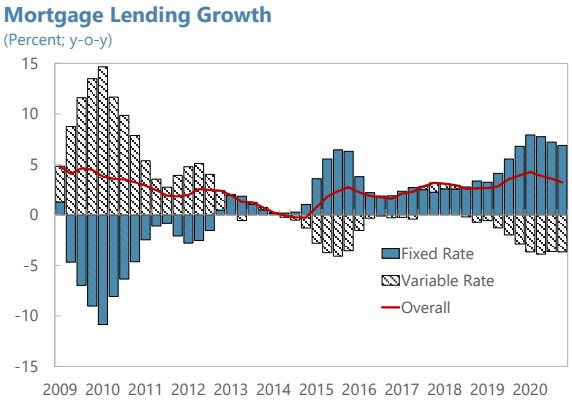
[35] Credit quality deteriorated particularly for corporates that received government support. FSR (2020) notes that 10 percent of lending to customers that received compensation support from the government had one-year default probabilities greater than 20 percent at the end of the third quarter of 2020. Default probabilities on customers that did not need support decreased from 2019:Q4 to 2020:Q3.

[36] BRRD2 MREL subordination rules—which feature an upper limit that is lower than the current limit for non-preferred senior debt—were to be implemented by December 28, 2020. The DFSA accelerated this timeline, thus halving banks' non-preferred senior debt issuance needs in 2020 and therefore de facto relaxing tighter restrictions previously imposed under BRRD1.

[37] The credit registry offers authorities the possibility to develop risk measurement models to estimate probabilities of default (PDs) and loss-given-default parameters (LGDs) at the individual debtor level, which could be used to estimate expected and unexpected losses; hence, estimates of provisioning and capital requirements at the individual exposure level. Such framework could be set up as the regulatory standardized approach (SA). This would allow authorities to ensure that buffers are set up adequately, consistently, and timely as risks change—for the entities that choose to adopt the SA. Alternatively, for entities that choose to adopt an internal-rating-based approach (IRB), the proposed framework would allow authorities to check the robustness and consistency of entities' IRB model estimates and challenge them whenever such estimates seem inconsistent (CNBV Mexico). Authorities could also check the consistency of risk estimates of specific risks exposures across banks.



Source: Danmarks Nationalbank.



Source: Danmarks Nationalbank.

Text Table 2. Denmark: COVID-19 Macroprudential Policy Relaxation

Instruments 1/	**Denmark**	**Sweden**	**Finland**	**Norway**
Demand Side Tools (DTI, DSTI, LTI, LTV)	95% LTV	85% LTV	90% (95% 2/) ~~85% (95% 2/)~~	DTI of 5
Household sectoral capital requirements		25% risk weight floor for mortgages	15% risk weight floor for mortgages	Portfolio level LGD floors
Countercyclical capital buffer (CCyB)	0,0% ~~1,5% (2,0%)~~	0,0% ~~2,5%~~	0,0%	1,0% ~~2,5%~~
Other systemically important institutions (O-SII) buffer		0,0 - 2,0%	0,5% - 2,0%	
Systemic risk buffer (SRB)	1,0% - 3,0%	3,0%	0,0% ~~1,0% - 3,0%~~	3,0% - 5,0%
Capital conservation buffer (CCB)	2,5%	2,5%	2,5%	2,5%

Sources: ESRB; IMF Macroprudential Database; IMF staff calculations.
1/ The range of buffer requirements across institutions are shown, where applicable.
2/ Finland has a higher cap for first time home borrowers.

29. Improvements to the AML/CFT framework should continue. Denmark's continued reform efforts in this area have led to an upgrade of its technical compliance ratings by the FATF for the third year in a row.[38] Recommendations made in the 2019 Article IV Consultation Staff Report (Article IV 2019) have been partially implemented.[39] The DFSA's new institutional risk assessment model will be operational by June 2021. As part of its efforts to strengthen AML/CFT supervision, the DFSA should continue intensifying AML/CFT on-site inspections of higher-risk financial institutions.

[38] On technical compliance, Denmark is now rated "compliant" or "largely compliant" on 38 out of 40 recommendations (FATF). Denmark's effectiveness ratings have yet to be revisited in light of the reforms completed following the adoption of its 2017 FATF AML/CFT assessment report.

[39] These included, *inter alia*, an expansion of the DFSA's monitoring and enforcement powers and its development of a comprehensive institutional risk assessment model.

The MIBFA should consider, select, and pursue next-stage options for regional consolidation of AML/CFT supervision (FSAP 2020). Innovative proposals to make use of technology to combat ML/FT could help enhance the effectiveness of the overall framework (DFSA's Project AML/TEK).

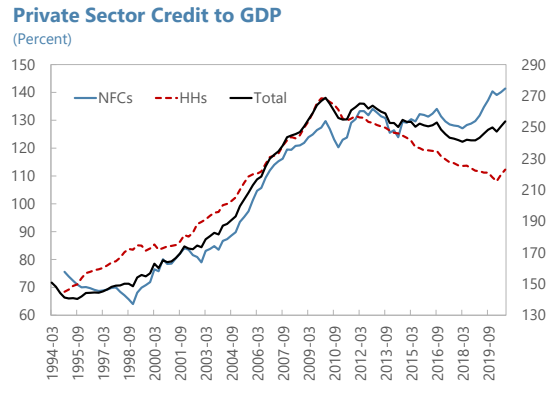
Authorities' Views

30. The authorities deem the financial system sound, resilient to pandemic-related stress, and well equipped to face the withdrawal of COVID policy support. They point to credit institutions' large buffers, relatively limited exposure to vulnerable sectors, and the positive impact of fiscal support measures on asset quality. Unless there is a new negative shock to the economy, they expect that the SRC will in June 2021 recommend borrower based measures and increasing the CCyB. The authorities agree with further expanding the use of the credit register to enhance risk surveillance. The authorities underlined that substantial resources have been invested to strengthen their AML/CFT framework. They reaffirmed that making Denmark's AML/CFT supervisory regime among the best in Europe is a priority.

Real Estate Markets

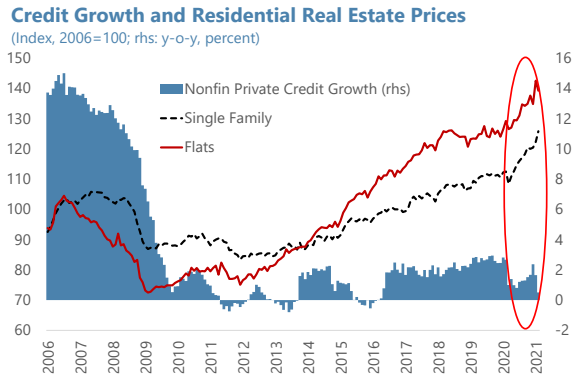
31. Credit to households and house price growth accelerated during the pandemic. Before the pandemic, household leverage was high.[40] Credit growth stalled at the onset of the pandemic but strongly recovered in 2020H2, driven primarily by mortgage lending. Residential property prices rose sharply in 2020H2, particularly for summerhouses, likely partially influenced by a temporary increase in tax deductions for summerhouse owners (Figure 5).

Household credit to GDP increased with 3.1 percent y-o-y credit growth in 2020…



Sources: Bank for International Settlements, Haver Analytics.

…and residential property price growth hit 8.5 and 9.0 percent for single-family homes and flats, respectively.

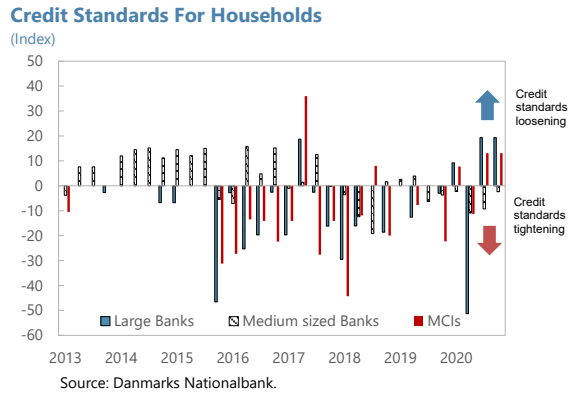


Sources: Danmarks Nationalbank, Statistics Denmark, IMF staff calculations

[40] Danish households' debt-to-income ratios are among the highest in advanced economies, as high house prices, a favorable tax treatment, and easy access to low-cost borrowing incentivize the funding of housing with large mortgages (Figure 5).

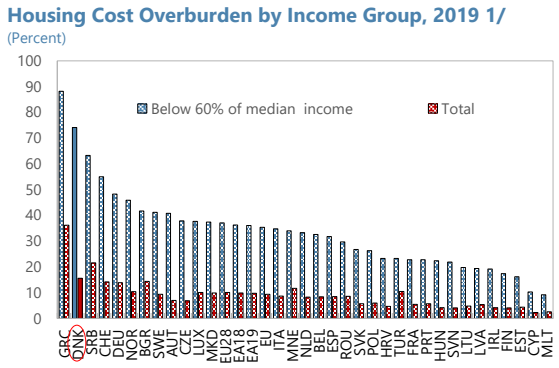
32. Macrofinancial vulnerabilities due to high and increasing household leverage amid high house valuations warrant close monitoring. High debt, combined with illiquid assets (concentrated in real estate via housing and pension assets) exposes households to price and interest rate shocks that can impact their balance sheet asymmetrically and spillover to aggregate demand.[41] Continued strong house price growth increases the likelihood of a revaluation that could harm highly-leveraged households, particularly those who purchased in overvalued urban areas and low-income households.[42] These vulnerabilities are compounded by the still large proportion of variable-rate and interest-only mortgages in the system (Figure 5). Moreover, MCIs and pension and insurance companies are highly interconnected and dependent on the health of the housing sector.[43]

Credit standards for households loosened in 2020.



Source: Danmarks Nationalbank.

Low income households are particularly vulnerable to price shocks.



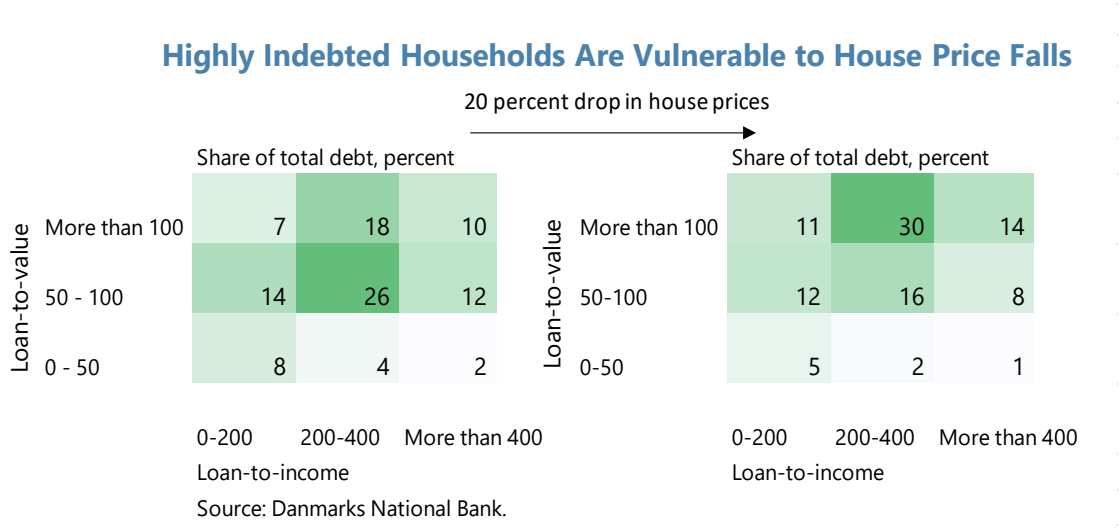
1/ 2020 Data for Bulgaria, Finland, and Netherlands
Source: Eurostat.

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

[42] LTI ratios and credit growth are higher in urban areas than elsewhere (SIP 2018) and low-income households spend a significant share of their income on housing. The likelihood of a large repricing is also higher due to uncertainty regarding the liquidity and solvency of households and corporates after government support is withdrawn. Indeed, households appear temporarily resilient to liquidity risk from pandemic-related unemployment shocks, but this is due in large part to the government's wage compensation and business assistance schemes (Finance Denmark).

[43] These sectors are entangled via real estate assets as high mandatory pension contributions and household savings have created a pension system that has facilitated the development of the world's largest covered bond market. Insurance companies, pension funds, and foreign investors are among the largest holders of covered bonds, which are issued by MCIs to fund household mortgages.

Highly indebted households are most vulnerable to house price falls.



33. Recent developments warrant tightening prudential tools while deploying coordinated tax and housing supply policies.

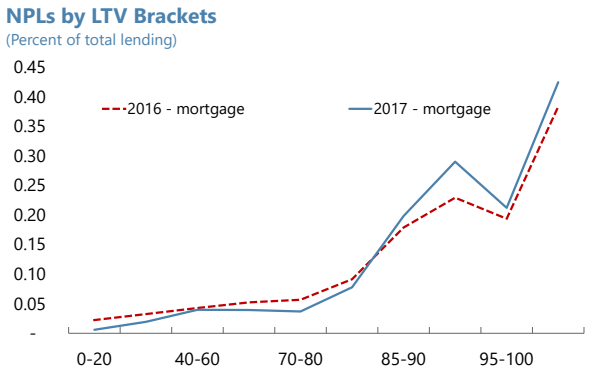
- **Macroprudential policy.**[44] The authorities should shift focus toward income-based measures, including tightening debt-to-income (DTI), LTI, and debt-service-to-income caps would help address high leverage and encourage faster amortization, as loan-to-value (LTV) constraints are less binding in the current environment with high house price growth. The authorities should tighten DTI restrictions for all loans, irrespective of their LTV ratios.[45] DTI caps could be differentiated based on borrowers' riskiness. Highly-leveraged households should be subject to mandatory amortization, regardless of maturity- and rate-type (SIP 2018). Tighter limits on income-based measures for interest-only and floating-rate mortgages or higher minimum down-payment requirements should also be considered. The proposed risk-based prudential framework could be combined with the macroprudential setup to facilitate calibration of these measures, especially for lower risk groups, e.g., first-time home buyers.[46]

[44] Staff welcome the comprehensive package of policies implemented prior to the pandemic that seemed to be containing vulnerabilities. These included policies targeting households and financial intermediaries in the form of macroprudential policies (SIP 2018), supervisory guidance for MCIs and banks, and a reform of property taxation (IMF 2017).

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

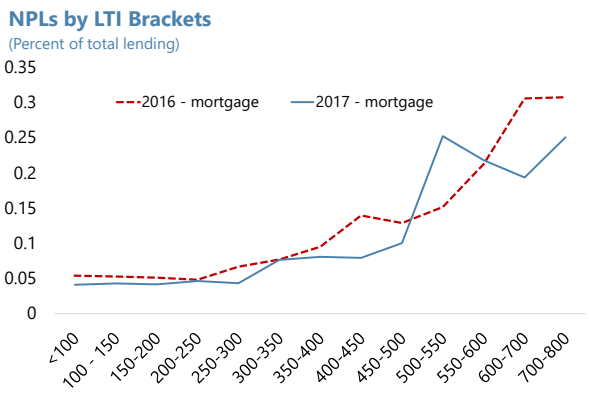
[46] See Central Bank of Ireland (2016) for international experience.

The share of nonperforming loans increases nonlinearly for loans with LTVs above 85…



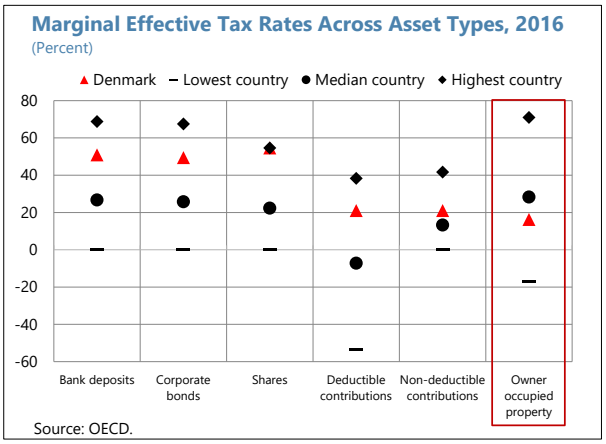
Sources: Danmarks Nationalbank, IMF staff calculations.

…and for loans with LTIs above 500.



Sources: Danmarks Nationalbank, IMF staff calculations.

- **Tax policy.** The tax treatment of owner-occupied housing remains favorable relative to other savings and compared to most OECD countries.[47] Taking advantage of the current low rate environment, MID should be reduced in a manner consistent with the overall tax framework.[48] Staff recommend prioritizing reforms to better link property taxes to current market valuations.[49] Balancing tax incentives for pension contributions could release resources for larger down-payments.[50]



Source: OECD.

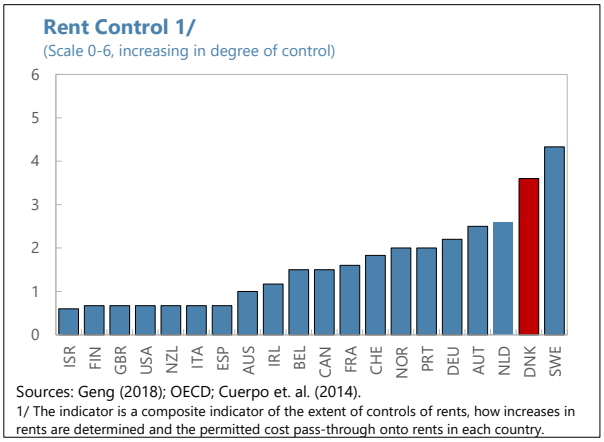
[47] Mortgage Interest Deductibility (MID) is relatively high and capital gains on owner-occupied housing are tax exempt (Article IV 2019). Currently, roughly 33 and 25 percent of mortgage interest payments under and above DKK 50,000 respectively can be deducted from taxable income.

[48] Advanced economies such as Germany, Ireland, Spain, and the UK, have no mortgage interest deductibility.

[49] The Housing Taxation Agreement had been intended for 2021 but has been postponed till 2024.

[50] Tax deductions for pension contributions could be rationalized to help slow households' large balance sheet expansion and reduce maturity mismatches from high pension savings and large mortgage debt (Article IV 2019).

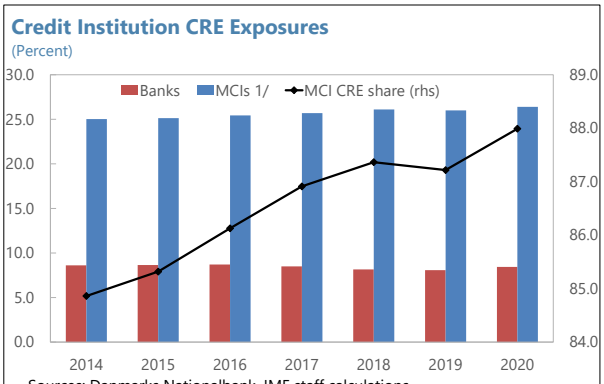
- **Housing supply.** Rent controls in Denmark are high relative to peer countries and should be reduced to stimulate the rental market, while protecting the interests of the most vulnerable. Review of urban area restrictions on the size of new apartments should continue to improve demand-supply mismatches.[51] Streamlined zoning and planning procedures across municipalities could increase supply, thereby alleviating price pressures.



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

34. A review of the efficacy of macroprudential policy implementation and institutional arrangements is encouraged. The process followed by the SRC to arrive at a recommendation, particularly to tighten tools, can take too long, potentially hindering implementation. Staff recommend that the chair of the SRC be given the legal power to make proposals for a recommendation after due consultation with other SRC members without the need to strive for consensus (Article IV 2019, FSAP 2020).

35. CRE companies had relatively higher leverage before the pandemic and were vulnerable to stress. Negative shocks to CRE prices can impact financial stability.[52] The 2020 FSAP's corporate stress-testing exercise revealed that CRE firms experienced the largest increase in riskiness in an adverse scenario.[53]



Sources: Danmarks Nationalbank, IMF staff calculations.
1/ MCIs face a loan-to-value limit of 60 percent on commercial property which significantly reduces their risk exposure.

36. The authorities have provided supervisory guidance to credit institutions on CRE lending but should remain vigilant. CRE exposure and lending growth limits as well as floors on debt-service capacity have helped address sector risks. If risks intensify, the authorities should consider CRE sectoral capital requirements to limit the future buildup of vulnerabilities in the sector (FSAP 2020).[54]

[51] For example, a new municipal plan for Copenhagen applies minimum size restrictions to 50 percent of a development's floors space thus freeing the remaining space for smaller homes.

[52] Transmission channels include the bank solvency channel, a collateral channel, and through nonbank financial institutions like pension funds (GFSR April 2021).

[53] Riskiness within a sector was measured by the volume of debt across firms within that sector with a one-year default probability greater than 1.5 percent.

[54] This could include differentiated risk weights or sectoral capital buffer requirements made possible with the introduction of CRDV/CRRII.

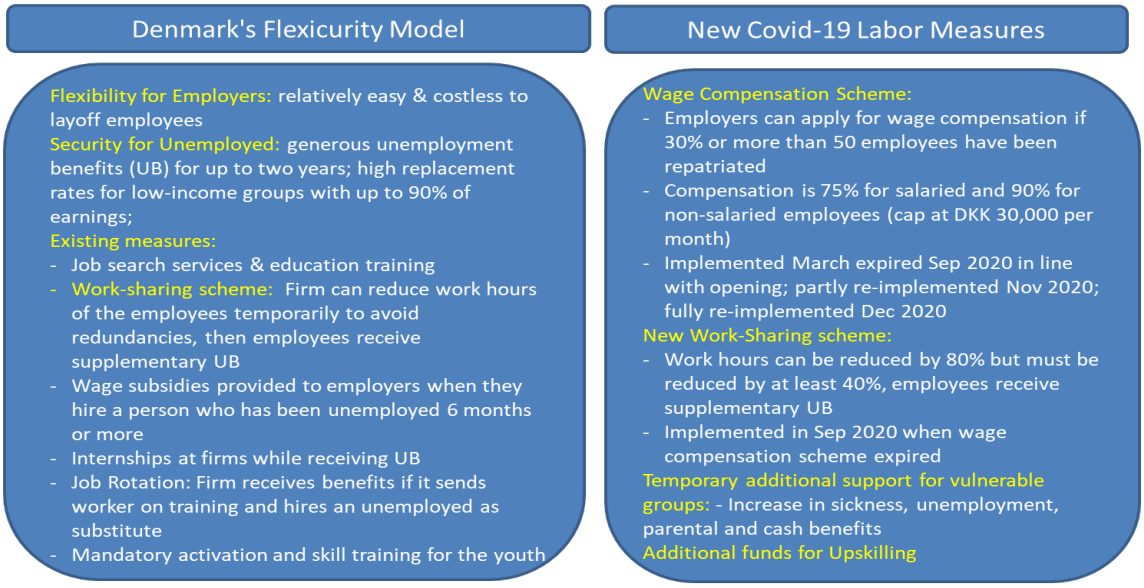
Authorities' Views

37. The authorities agree that macrofinancial risks stemming from surging house valuations amid high household leverage could warrant action. They note the risk buildup in some parts of the housing market but highlight the declining share of variable rate mortgages. The DN and DFSA see scope for tighter income-based measures and mandatory amortization requirements. The government is monitoring developments in the real estate market closely and will await the recommendations from the SRC before deciding on possible interventions in the housing market. Following this, they noted that tightening measures would require further analysis of the effects on the housing market and the overall economy. The government emphasized that reducing MID should not be considered independently of taxes on housing and other capital income taxation. The government sees the macroprudential framework as well functioning including the timeframe for the CCyB implementation and the SRC's independence.

C. Structural Policies

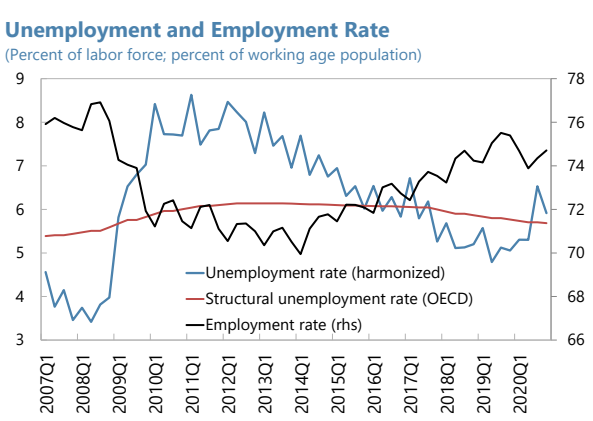
Labor Market

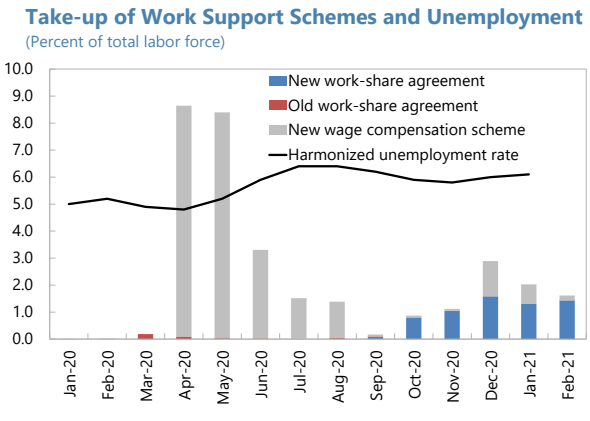
38. The Danish flexicurity model—a structural pillar of the Danish system—is well suited for effective implementation and targeting of labor market policy. Flexicurity has historically generated strong labor market performance characterized by overall low (long-term) unemployment, high job turnover and social security. The model relies on three pillars: (i) flexible hiring and firing; (ii) a generous social safety net; and (iii) an extensive system of activation policies. Thus, the framework enables the finetuning of policies by allowing the rebalancing in any of the three pillars.[55]

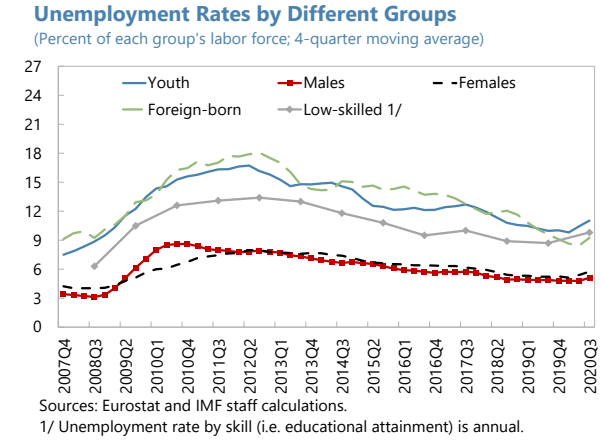


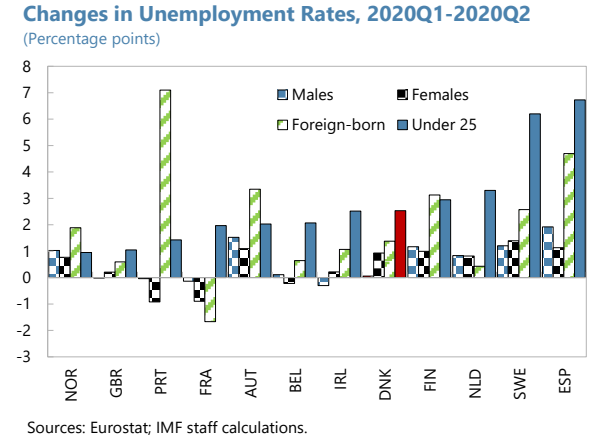
[55] The model is well equipped to facilitate a reallocation of workers from shrinking sectors to expanding sectors as upskilling and educational services are linked to in-demand skills based on unsuccessful recruitment data, the so-called "positive list".

39. At the onset of the pandemic, an enhanced flexicurity model and complementary policies shielded labor markets. A complementary wage compensation scheme and enhancements to flexicurity, including a new workshare scheme, the temporary relaxation of sickness, unemployment and cash benefits were implemented.[56] These were effective in dampening the impact of the pandemic on the labor market, which recovered in the second half of 2020.[57] However, amid new restrictions due to the second wave, the recovery stalled by the end of the year. Given the magnitude of the crisis, the impact on the labor market was mild in 2020. However, unemployment among the young, low-skilled, and foreign-born—which was already high before the pandemic—rose much higher, albeit similarly to peer countries.









[56] The new wage compensation scheme provides 75 and 90 percent compensation to employers for salaried and non-salaried workers respectively but it capped at DKK 30,000 a month. The remainder is covered by the employer allowing for 'skin-in-the-game' that supports viable firms. Workers under the scheme are not allowed to work. A work-sharing scheme whereby employees work part-time in a company and are compensated by unemployment insurance for the time they don't work is a long-standing feature of Denmark's labor market tools. However, a new work-sharing scheme was implemented in September 2020. It is more flexible as it applies to both companies with and without a collective agreement, it is immediately effective, and allows employers to switch between different work-sharing designs (daily vs weekly).

[57] Uptake of the wage compensation scheme was high during the first wave—especially in the retail, hotel, and restaurant industry—thereby substantially cushioning the impact on unemployment. With the reopening of the economy, the scheme expired. During the second wave, the wage compensation scheme was reintroduced, but the uptake was much lower reflecting stronger economic activity and a switch to the new work-sharing agreement.

40. Efforts to improve employment prospects for the young, low-skilled, and foreign-born should continue. It is encouraging that authorities expanded incentives for vocational education of in-demand skills (VET)[58] appropriated more funds for upgrading skills, expanded training to include COVID-19 courses such as delivering medicine or elderly care as well as green economy jobs. To promote labour market participation of refugees, a basic integration education (IGU) program was launched in 2016.[59] The government agreed to expand the IGU program in 2020 to include migrants that have been in Denmark for up to 10 years (from 5 years previously). A new migrant full-time activation scheme has been announced. These initiatives are welcome but low participation of female refugees remains a concern and should be enhanced.

41. As the recovery gains momentum, policies should be fine-tuned, shifting from exceptional support to other measures embedded in *flexicurity*. Support to the labor market should not be withdrawn prematurely. Once the recovery is entrenched and lockdown restrictions lifted, more focus should be given to facilitate matching and the reallocation of labor from contracting to expanding sectors through upskilling and education (Annex VII). In this regard, making the positive list—that guides the subjects covered by upskilling and education—more forward looking could be considered. Simultaneously, exceptional support measures should be phased out to protect the flexibility of the system.

42. Increasing labor supply is critical for the long-term sustainability of the Danish economic system. Labor market policies such as the ongoing pension reform that links retirement age to life-expectancy should continue.[60] A comprehensive tax reform that uses targeted in-work benefits would increase labor supply and alleviate inactivity traps. Improvements to the provision of after-hours public childcare could further decrease the gender gap. Simplifying the certification of foreign degrees would help attract skilled foreign labor. Policies that support the expansion of knowledge-intensive sectors (KIS) would increase productivity and enhance growth prospects (Investment and Productivity Section). However, labor market institutions should adapt to cope with the transformation to KIS to counter inequality growth and to reap the gains of expanding the highly productive knowledge sector (Article IV 2019).

[58] Vocational Education and Training (VET) is a program aimed at the young to incentivize and increase enrollment in vocational training. Authorities increased incentives, by increasing unemployment benefits to 110 percent if the unemployed began vocational education of in-demand skills that have high potential for subsequent employment in 2020–2021.

[59] The IGU program is a two-year course. It is a complement to work experience and wages are subsidized. It aims to improve the chances of refugees to find permanent jobs in Denmark. After finishing the program, the employee receives a training certificate while the company receives a bonus of DKK 20,000 after the first six months of the course and again once the IGU has been completed.

[60] The pension reform links retirement age to life-expectancy. The retirement age is planned to increase from 65½ years in 2019 to 67 years in 2022, and the voluntary early retirement pension age has gradually been raised since 2014 and will be 64 years in 2023. In 2019, the Parliament adopted a law introducing a new pension scheme for seniors with reduced physical work capacity who are approaching the retirement age. The new pension scheme will replace the early retirement pension for seniors.

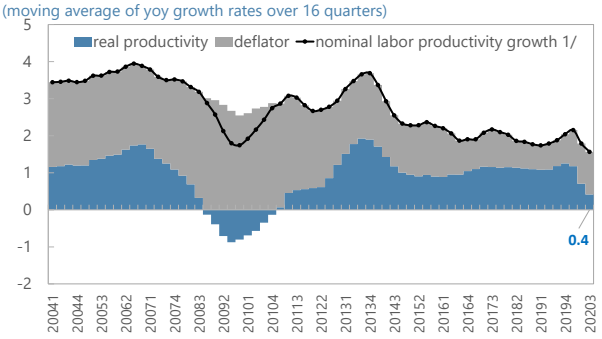
Authorities' Views

43. The authorities agree that flexicurity is well suited to support the recovery and that exceptional support measures should sunset once the recovery is entrenched. The authorities agree that increasing labor supply by linking the retirement age to life-expectancy is vital for the Danish model. They also agree that labor supply could be further increased through tax reforms, e.g. by using targeted in-work benefits and reducing marginal tax rates. However, this should be carefully balanced against the potential impact of such reforms on income inequality.

Reforms to Boost Investment and Productivity

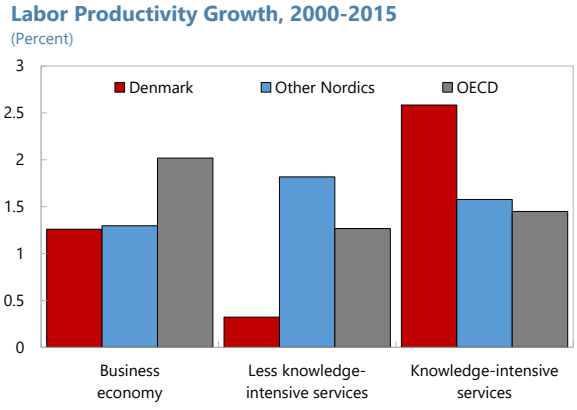
44. The recovery offers an opportunity to address pre-COVID legacies and build forward better by boosting productivity growth and investments, including in green and ICT sectors. This would facilitate the green and digital transformation of the economy and would improve labor productivity growth which has been weak, partly due to low investments, after the GFC (SIP 2018).

Due to the crisis, labor productivity has slowed further in 2020



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

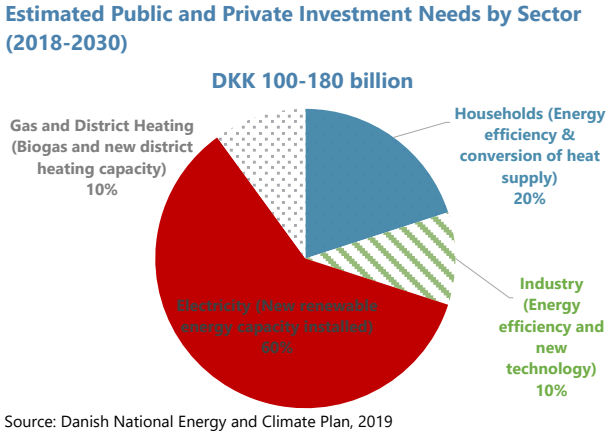
Productivity growth is below the OECD average and is weak in less knowledge-intensive service (KIS) industries such as trade, transport, food, and accommodation, but stronger in KIS.



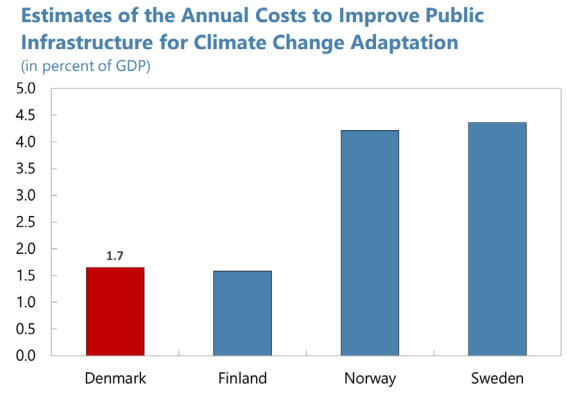
Source: OECD.

45. Steps already taken to increase productivity growth and overall investment should continue. Before the crisis, important efforts were made. The government established a "business-oriented growth policy" which targets six areas: Digitalization, Qualified labor, Venture capital, Cost of doing business, Competitiveness, and Good economic conditions (Ministry of Industry, Business and Financial Affairs 2018). In 2018, the digital growth reform package was introduced. It provides legislative support for digitalization. To support the transition to new technologies, the government launched the Digital Hub Denmark, the Technology Pact, the Danish National Strategy for Artificial Intelligence, the Disruption Council and expanded public-private partnerships, particularly in small- and medium-enterprises (SMEs). The Innovation Fund facilitates subsidies for innovation and R&D. Additional resources and new lending schemes were added to the Danish Growth Fund, which serves as a one-stop shop for access to finance for SME's (Annex I). Currently, the planned increase in public investment is envisaged to reach about 3.7 percent of GDP in 2023 (Fiscal Section).

46. However, more would be needed in view of Denmark's ambitious emission goals. In 2020, the authorities announced several initiatives that will increase green private and public investment (Green Tax Reform, Green Restart). To reach Denmark's emission targets, investment can play a relevant role (Fiscal Section). To support climate mitigation, important areas for investment, and sizeable amounts, have been proposed by the Danish National Energy and Climate Plan (DNEC 2019). Depending on different considerations, adaptation investment needs are also likely significant. Staff analysis shows that investment needs for climate adaptation could be as high as 1.7 percent of GDP annually during 2020–2030, including in building new coastal protection infrastructure as well as in upgrading investment projects and retrofitting existing assets exposed to rising sea levels.[61] Unofficial information indicates that about DKK 50–75 billion (2.1–3.1 percent of GDP in total) might be necessary to guard Denmark against climate risks. Hence, fiscal space should be used to raise public investment as much as efficiently possible, while being compliant with the Budget Law and the medium-term objective. The authorities should also consider further incentives for increasing private investment. A prompt definition of the tax framework for green investment, including the level and base of carbon taxation, would provide clarity for private investment.



Source: Danish National Energy and Climate Plan, 2019



Source: IMF Fiscal Monitor October 2020.

47. Further measures can be taken to incentivize investment and raise productivity growth. By raising investment and productivity—and along with policies to bolster labor supply—these measures would also boost potential growth, limiting the pandemic-induced scarring.

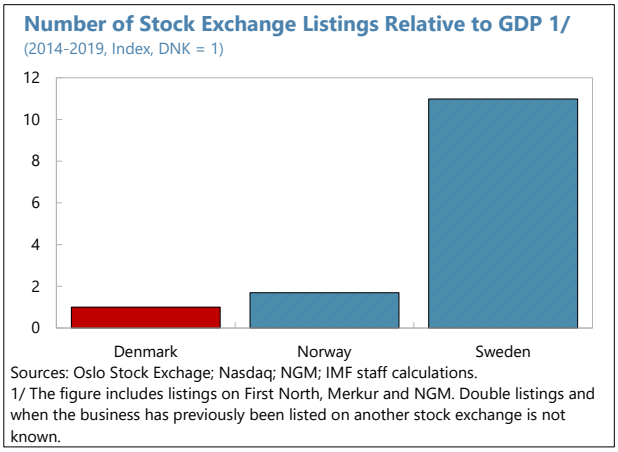
- **Nurture an adequate environment for high productivity sectors to expand.** These include KIS that exhibit high productivity growth; thus, expanding these sectors is important to raise overall productivity. ICT investment—which tend to be positively associated with productivity and a more dynamic business environment—will likely increase with the expansion of KIS, which

[61] See Annex 3 for details of estimates of adaptation costs.

are typically ICT-intensive.[62] Therefore, ensuring an adequate supply of human capital by enabling the provision of technical and digital skills, would support the expansion of these sectors.

- **Strengthening the institutional framework for competition and encourage broad-based innovation.** Stronger competition could foster investments and innovation and improve resource allocation. Staff welcomes the recent implementation of the European Competition Network directive (ECN+) which aims to make national competition authorities more effective enforcers and to ensure the proper functioning of the internal market. Promoting further collaboration between universities and businesses should be considered (Article IV 2019).

- **Improved access to equity finance.** The equity market for SMEs and the number of initial public offerings are relatively small in Denmark (Copenhagen Economics 2018). Better access to equity finance would improve funding options for new, small, or high-technology firms that might be credit constrained due to lack of collateral. Reviewing regulation for pension funds and ensuring that adequate resources are available for investment vehicles like the Danish Growth Capital Fund, by which pension sector and public resources are invested in SMEs, could further support equity financing (Article IV 2019).



- **Rebalancing taxation for start-ups and high-technology firms.** Relaxing the cap on the use of carry-forward losses should be considered, as such a cap might pose a challenge for cash-constrained start-ups which tend to be initially loss making. Reducing the taxation of dividends, while ensuring regulations are in place to minimize avoidance, would encourage equity investment in start-ups and high-technology firms. Assessing how to properly implement an incremental Allowance for Corporate Equity (ACE) should be considered, as ACE would reduce the debt bias and the cost of capital (SIP 2018).

Implications for Potential Growth

48. Denmark is turning the pandemic threat into opportunities to advance the economy of the future, by furthering investments, and enhancing human capital. Prudent fiscal and financial policies before the pandemic led to a build-up of substantial buffers. These were deployed swiftly during the pandemic and helped limit the immediate impact on activity (Annex I). Going forward,

[62] Denmark is one of the most digitalized economies in the world. However, ICT investment in KIS (as share of gross value added) has been on a downward trend since the early 2000s and was lower than in many peers (Annex 3, Article IV 2019).

policy measures in Denmark—during the crisis, and in the recovery phase—should help limit scarring and advance the transition to the economy of the future.

49. Denmark should continue boosting potential growth, support vulnerable groups and limit scarring. The recovery phase offers an opportunity to lift public and private investments thereby boosting potential growth (Structural Policies section). By facilitating labor market reallocation, the Danish "flexicurity" model—along with the continuation of the pension reform—would support labor supply. Staff analysis shows that these policies are key to raise potential growth and limit scarring (Annex Box VII.1). Other salient features of the Danish system—universal health care and generous social welfare support (Balasubramanian et al., 2021)—should help safeguard vulnerable groups.[63]

Authorities' Views

50. The authorities want to "restart" the economy by raising productivity and investment, including in green and digital sectors. In addition to planned increases in public investment, the authorities note the role of the private sector to step up green investment. The authorities acknowledge that investment needs for climate adaptation could be sizeable. They point to a forthcoming national climate adaptation strategy that will include an assessment of the investment needs. To enhance equity financing and reduce debt-bias, the authorities agree that the ACE could increase investments but note the significant administrative challenges associated with its implementation. They broadly agree that upgrading capital markets could improve access to equity finance for SMEs and that growth of KIS is an important contributor to continued productivity growth. Regarding Denmark's competition framework, the authorities note the recent implementation of the ECN+ directive in March 2021 and that it is too early to assess its efficiency. The authorities agree that various initiatives that raise labor supply and investments would boost potential growth thereby reduce scarring.

STAFF APPRAISAL

51. Activity declined in 2020 driven by weak private consumption and net exports. But the contraction was milder than in peer countries, in part, thanks to unprecedented policy support that has cushioned the impact of the pandemic. The external position was stronger than the level consistent with medium-term fundamentals and desirable policies. The near-term outlook is for a rebound in activity, but risks remain high and dominated by pandemic developments. High and increasing household debt amid accelerating housing valuations remains a key vulnerability. Policies should support the recovery, safeguard the most vulnerable groups, enhance macrofinancial resilience, and facilitate green and digital transitions.

52. Denmark's public finances are sound with substantial fiscal space to support the recovery and facilitate the economy's green and digital transformations. Fiscal policy should

[63] Income inequality in Denmark is low by international standards (Figure 1).

prioritize COVID crisis support, facilitate reallocation, and support reforms for the economic transformation. If the recovery falters, Denmark should deploy its substantial fiscal space as needed. Once the recovery is fully entrenched, a plan to return to the medium-term objective of neutral stance remains appropriate.

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

54. The banking system is profitable, liquid, and highly capitalized, though in a challenging environment. Measures to support households and corporates mitigated liquidity and credit risks but impairments are likely to increase further once policy support is unwound. As the recovery solidifies, targeted prudential tools should be deployed to maintain financial stability. Staff welcome improvements to the AML/CFT framework which led to a third consecutive FATF upgrade of Denmark's technical compliance ratings. The robust implementation of reforms should continue.

55. High and increasing household leverage amid accelerating housing valuations warrant tightening prudential tools and deploying coordinated tax and housing supply policies. The authorities should shift focus toward income-based measures, as LTV caps are less binding in the current environment with high house price growth. The authorities should tighten DTI restrictions for all loans irrespective of LTV ratios. DTI caps could be differentiated based on borrowers' riskiness. Tighter limits on income-based measures for interest-only and floating-rate mortgages should also be considered. Mortgage interest deductibility should be reduced in a manner consistent with the overall tax framework. Policies to promote housing supply should be considered.

56. As the recovery gains traction, labor market policies should be fine-tuned, shifting emphasis from exceptional support to other measures embedded in flexicurity. Enhancements to the flexicurity model along with complementary policies helped cushion the impact of the pandemic on the labor market. Once the recovery is entrenched, exceptional support should sunset. More focus should be given to measures in *flexicurity* that facilitate matching and the reallocation of labor from contracting to expanding sectors through upskilling and education especially for the young, unskilled and foreign-born. To support labor supply over the long-term, it is critical to continue with the implementation of the pension reform that links retirement age to life-expectancy. Other measures, that would increase labor supply and alleviate inactivity traps should be considered, including a comprehensive tax reform that uses targeted in-work benefits. Improvements to the provision of after-hours public childcare should be pursued. Simplifying the certification of foreign degrees would help attract skilled foreign labor.

57. The recovery offers a unique opportunity to address pre-pandemic legacies and build forward better by boosting productivity growth and investments. More is needed to achieve Denmark's highly ambitious climate goals. Hence, public investment should be raised as much as efficiently possible, while being compliant with the Budget Law and the medium-term objective. A prompt definition of the tax framework for green investment, including the level and base of carbon taxation, would reduce uncertainty and provide further incentives for private investments. To further

boost productivity growth, the authorities should continue to foster the environment for high productivity sectors to expand, encourage broad-based innovation, and improve access to equity finance. By reducing the cap on the use of carry-forward losses more start-up and high technology firms could be fostered. Consideration should be given on how to implement an ACE, as it would reduce the debt bias and the cost of capital.

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

Proposed Decision

The following decision, which may be adopted by a majority of votes cast, is proposed for adoption by the Executive Board.

The Executive Board endorses the thrust of the staff appraisal in the report for the 2021 Article IV consultation with Denmark (SM/21/84, 05/27/2021).

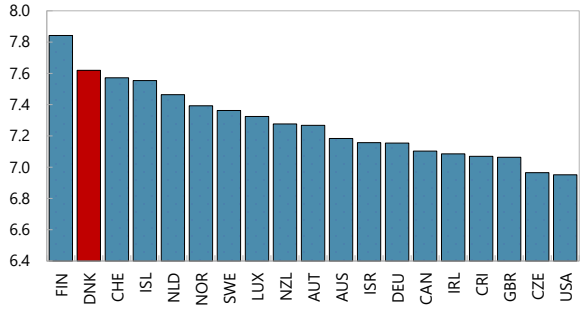
It is expected that the next Article IV consultation with Denmark will take place on the standard 12-month cycle.

Figure 1. Denmark: Context

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

Happiness Score, 2018-2020 1/

(Index)

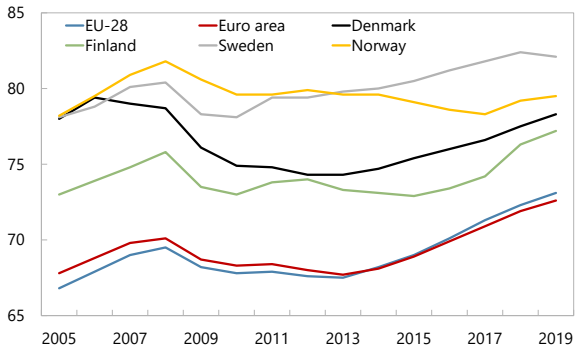


Source: World Happiness Report 2021.
1/ Higher numbers mean more happiness. Caution is needed in interpreting scores for any individual country as the quality of underlying data can vary.

…amid high levels of employment following structural reforms.

Employment Rates

(Percent of population)

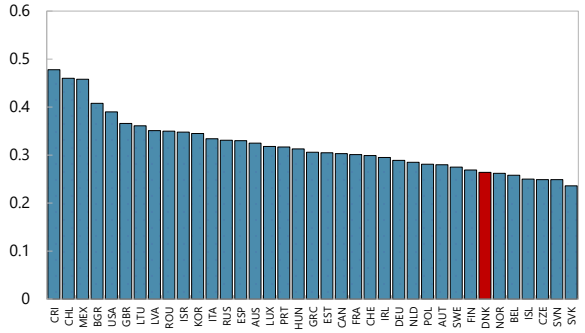


Source: Eurostat.

Inequality is low by international standards..

Gini Coefficients, Latest available data 1/

(Percent of disposable income)

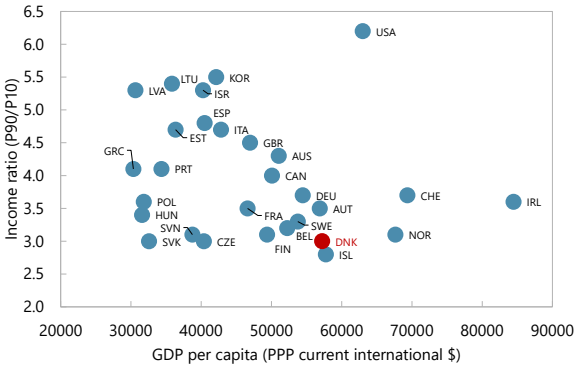


Source: OECD.
1/ Lower numbers mean less income inequality.

…with high average income and low dispersion.

Income Levels and Income Inequality

(2018 or most recent year)

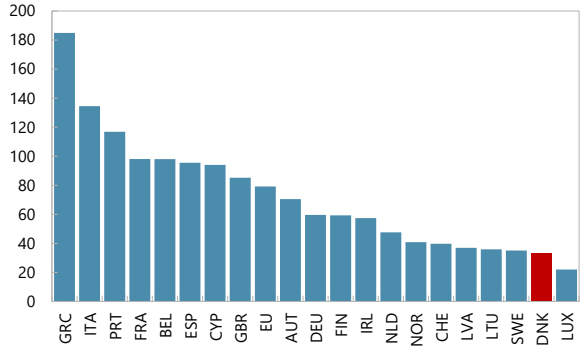


Sources: World Bank WDI; OECD.

Public debt remained one of the lowest in the region in the runup to the pandemic, providing substantial buffers.

General Government Gross Debt, 2019

(Percent of GDP)

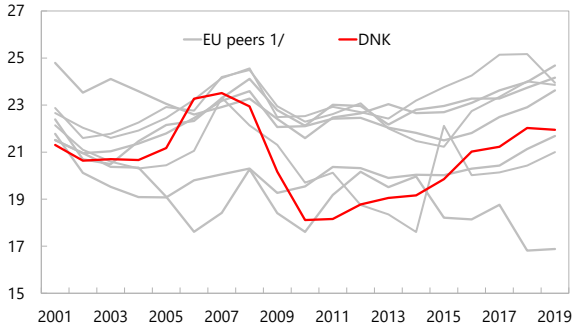


Sources: IMF, World Economic Outlook; and IMF staff calculations.

Investment rate saw some pick-up after lagging peers for some time following the GFC.

Total Investment

(Percent of GDP)



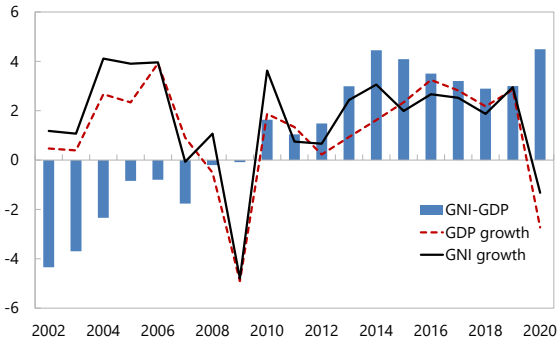
Sources: Haver Anaytics; and IMF staff calculations.
1/ EU peers are AUT, BEL, FIN, FRA, DEU, LUX, NLD and SWE.

Figure 2. Denmark: Recent Developments

The pandemic hit Danish activity but the impact was one of the lowest in the region…

Denmark: GDP and GNI

(Percent)

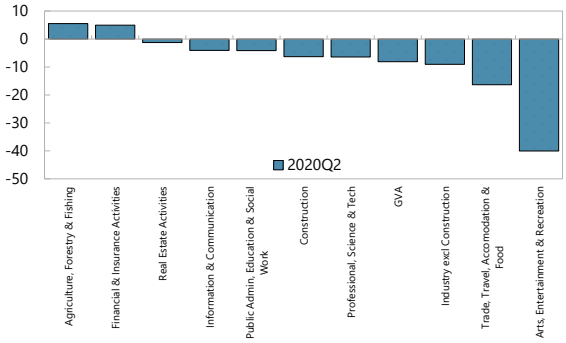


Sources: Statistics Denmark; and IMF staff calculations.

…with some sectors hit worse than others.

Sectoral GVA Growth, Average 2020Q2

(YoY percentage change)

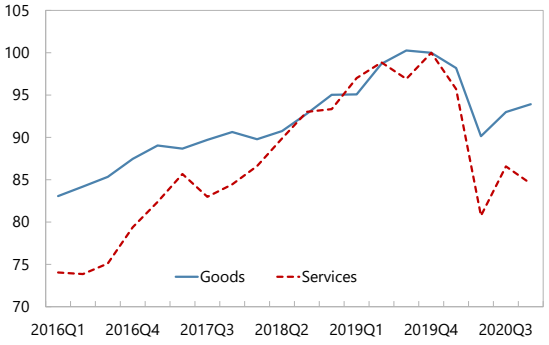


Sources: Eurostat and IMF staff calculations.

Exports declined sharply mainly driven by services exports and to a lesser extent, goods exports…

Exports of Goods and Services

(Index; 2019Q4 = 100)

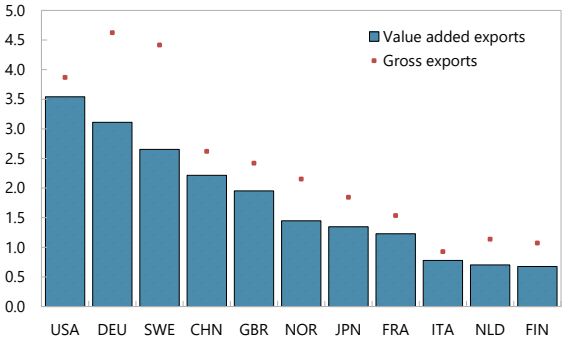


Sources: Statistics Denmark; and IMF staff calculations.

…as the pandemic hit major economies and trading partners, weakening external environment appreciably.

Denmark's Top Export Destinations

(Percent of GDP, 2015)

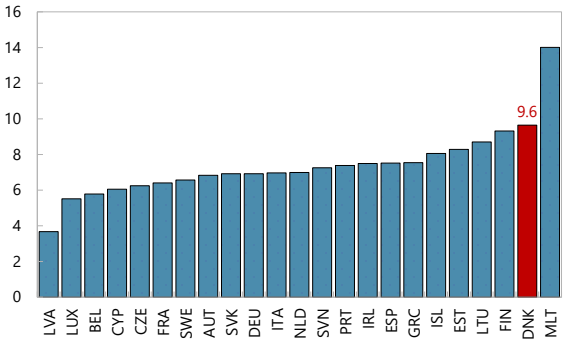


Sources: OECD TiVA; and IMF staff calculations.

Denmark undertook one of the fastest vaccination rollouts in the EU, laying the ground for a recovery…

Vaccination Administrated

(Percent of total population; as of March 11, 2021)

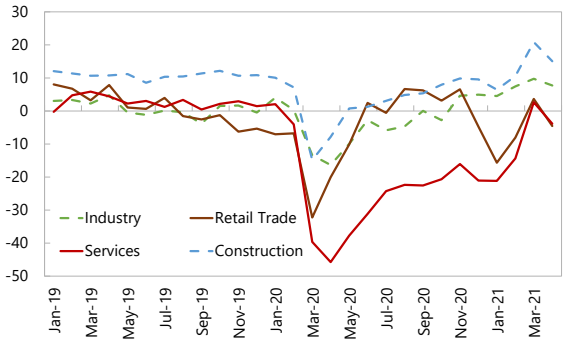


Sources: Bloomberg Finance L.P.; IMF WEO; IMF staff calculations.

…but the rebound is likely to be uneven across sectors.

Confidence Indicators

(Net figures; adjusted)

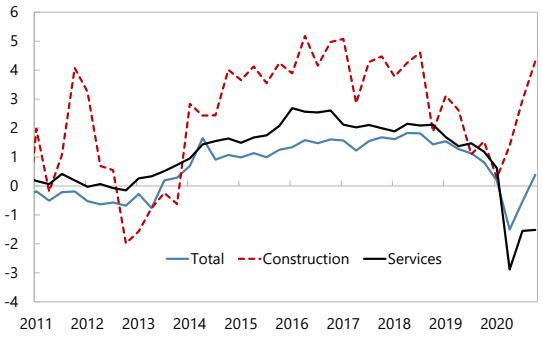


Sources: Haver Analytics; IMF staff calculations.

Figure 3. Denmark: Labor Market Developments

At the onset of the pandemic, employment growth dropped but has recently recovered aided by the construction sector.

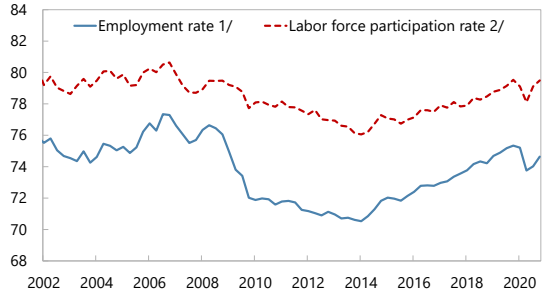
Employment Growth
(Yoy, percent, SA)



Sources: Statistics Denmark; and IMF staff calculations.

Employment and participations rates continue to rise…

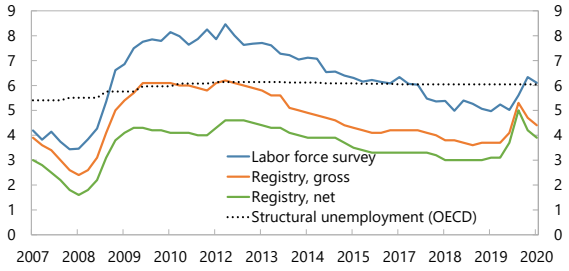
Labor Market Rates
(Percent of working age (15-64 years old) population, SA)



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

… as unemployment trends down but continues to be above pre-pandemic rates.

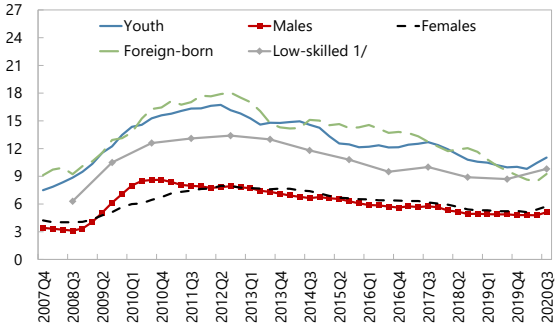
Unemployment Rates 1/
(Percent of labor force, SA)



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.

Unemployment rates among the young, low-skilled and foreign born remain elevated.

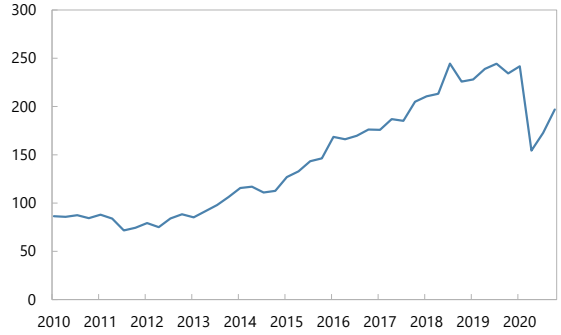
Unemployment Rates by Different Groups
(Percent of each group's labor force; 4-quarter moving average)



Sources: Eurostat and IMF staff calculations.
1/ Unemployment rate by skill (i.e. educational attainment) is annual.

Vacancies have recovered almost half of their drop …

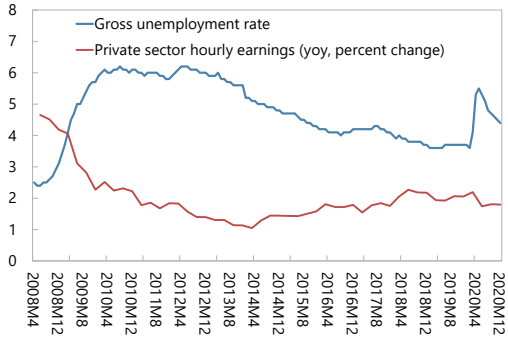
Job Vacancies
(Per 1,000 unemployed, SA)



Source: Statistics Denmark.

…while wage growth has moderated.

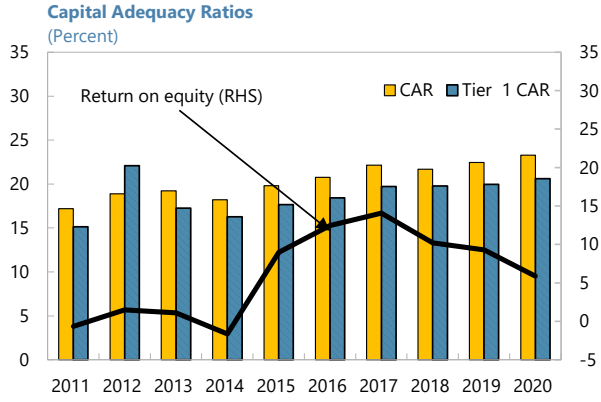
Unemployment Rate and Private Sector Hourly Earnings
(Percent)



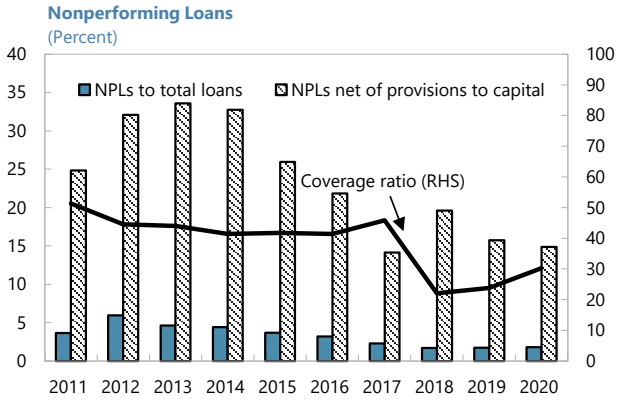
Sources: Statistics Denmark; and IMF staff calculations.

Figure 4. Denmark: Financial System Indicators

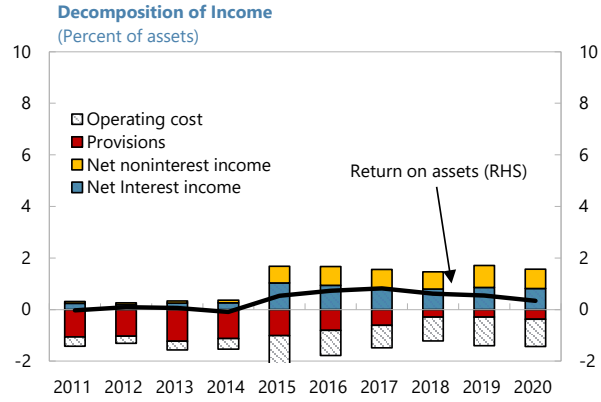
Capital adequacy ratios are healthy though increased impairments weighed on profitability.



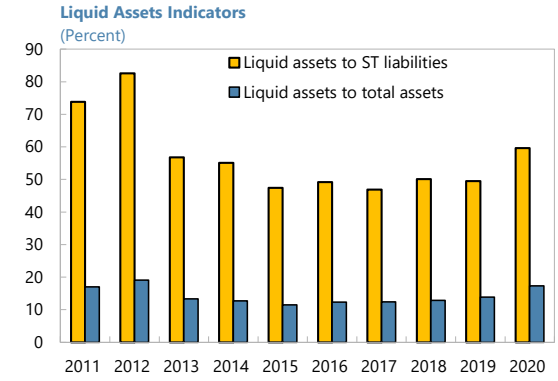
Nonperforming loans net of provisions to capital remain low.



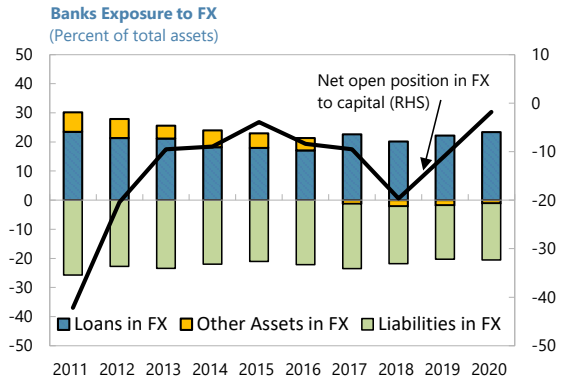
Lower net interest and fee income combined with higher provisions reduced bank earnings.



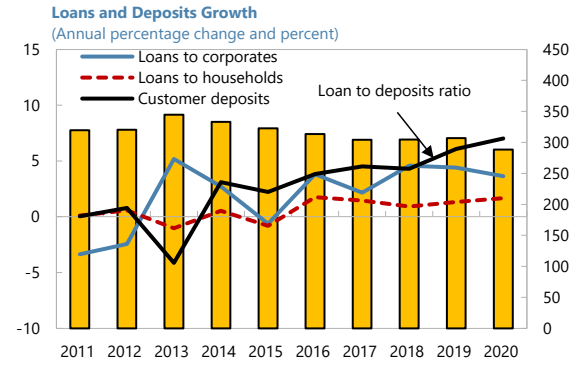
Liquidity remains high.



FX exposures have remained steady.



Tax deferrals supported corporate liquidity, propping up customer deposits.



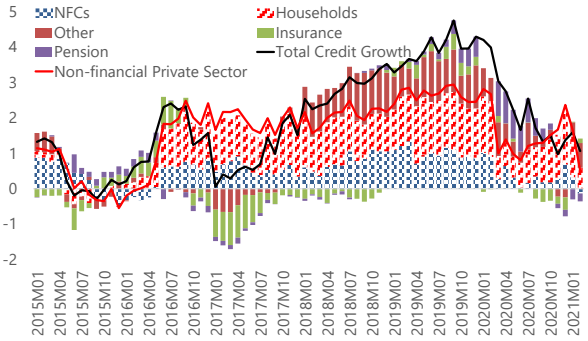
Sources: IMF Financial Soundness Indicators and IMF Staff calculations.

Figure 5. Denmark: Housing Market Developments

Credit growth accelerated in 2020H2 driven by mortgage lending growth to households and small businesses…

Credit Growth

(Percent, y-o-y)

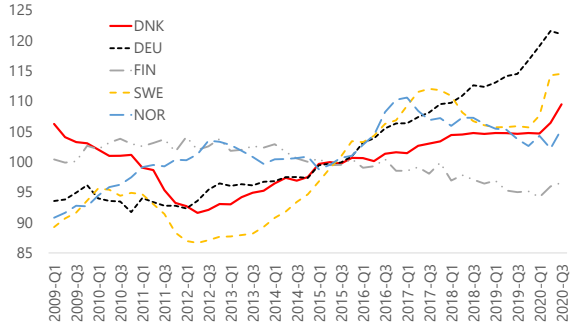


Sources: Danmarks Nationalbank; IMF staff calculations.

… and housing valuations increased markedly.

Price to Income Ratio

(Index, 2015=100)

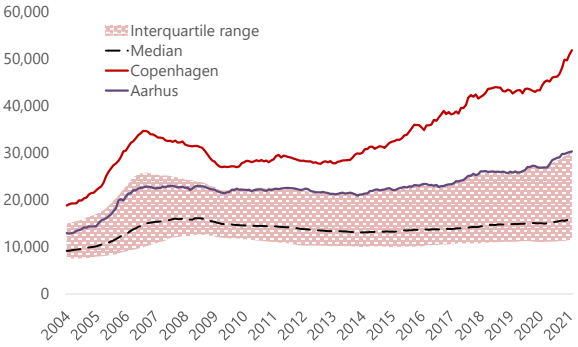


Source: OECD.

Single family home prices increased particularly in the capital region…

Regional Prices for Single Family Homes

(DKK per m2)

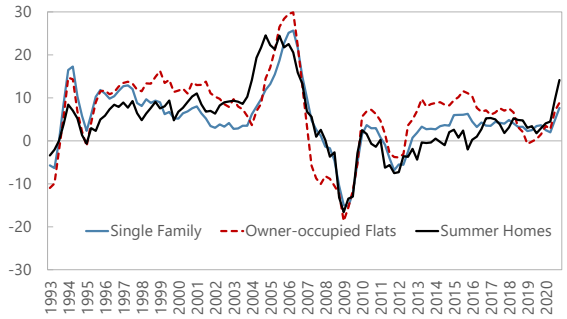


Sources: Statistics Denmark, IMF staff calculations.

…as did prices for summerhouses.

Property Price Growth by Category

(Percent)

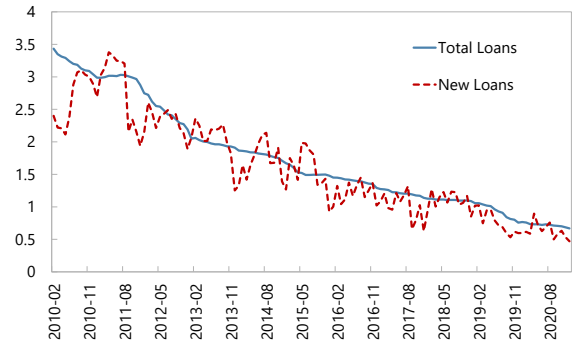


Sources: Statistics Denmark, Haver Analytics, IMF staff calculations.

Mortgage rates continued to decline…

Average Mortgage Rates

(Percent, net of administration fee)

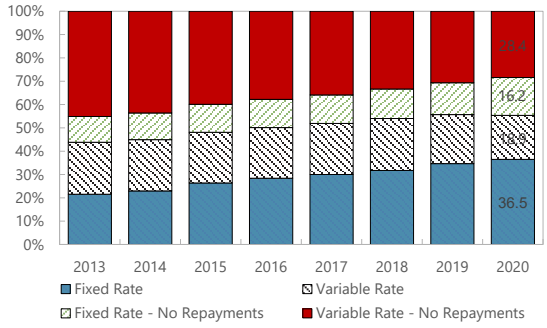


Sources: Danmarks Nationalbank, IMF staff calculations.

…and the variable rate mortgage share further decreased while the no-amortization fixed rate share increased.

Stock of Residential Mortgages by Type

(Percent of Total)

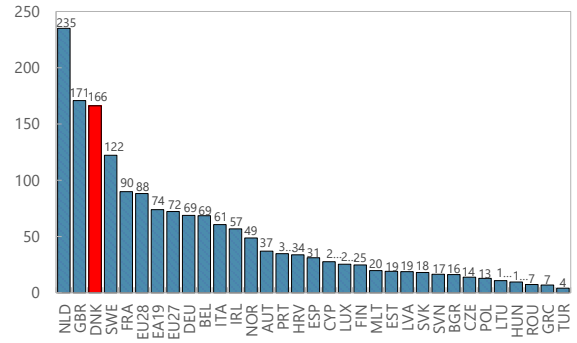


Sources: Danmarks Nationalbank, Statistics Denmark.

Figure 5. Denmark: Housing Market Developments (concluded)

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

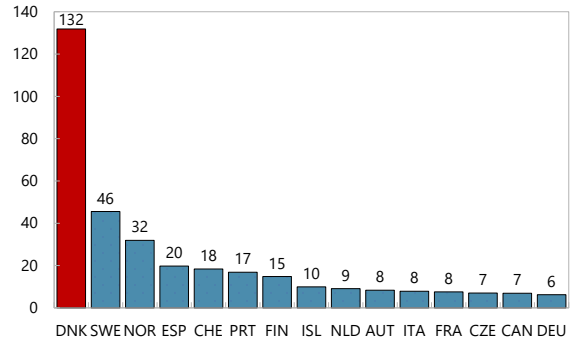
Household Pension & Insurance Assets, 2019
(Percent of GDP)



Source: Eurostat.

…which has facilitated the development of the world's largest mortgage covered bond market…

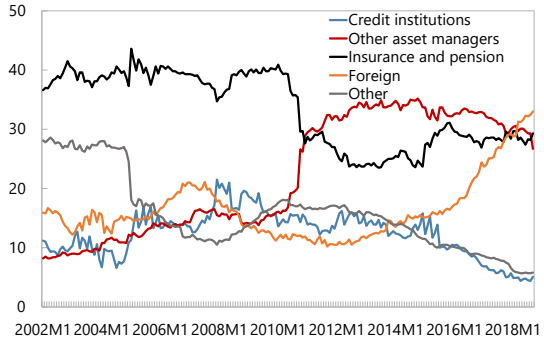
Mortgage Covered Bond Markets
(Outstanding amount, 2016; percent of GDP)



Sources: European Covered Bond Council; and IMF WEO.

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

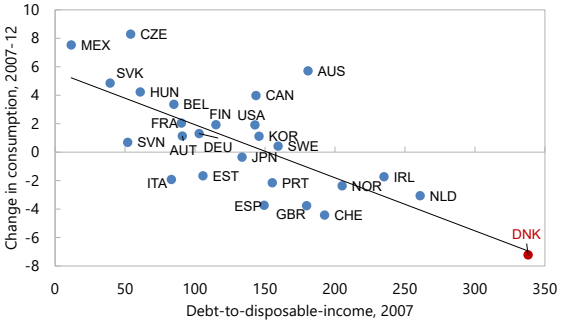
Investors in Danish Covered Mortgage Bonds Over Time
(Percent)



Source: Danmarks Nationalbank.

…linking household consumption to real estate shocks.

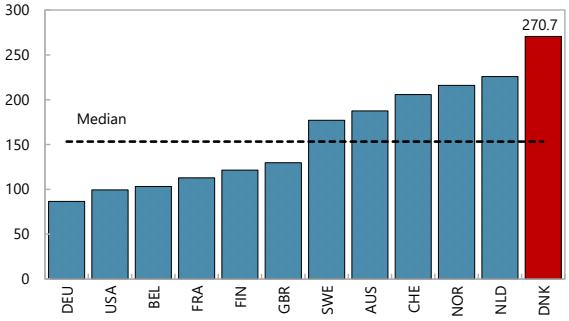
Household Leverage and Consumption 1/
Percent



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

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

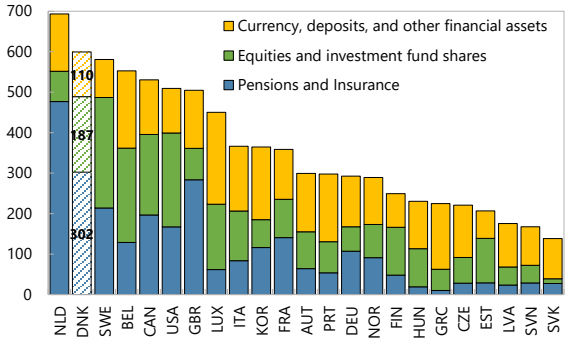
Household and NPISH Outstanding Debt to Gross Disposable Income
(Percent, 2017)



Sources: Haver Analytics; and IMF staff calculations.

…and these large liabilities are counterbalanced by large housing and pension assets.

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



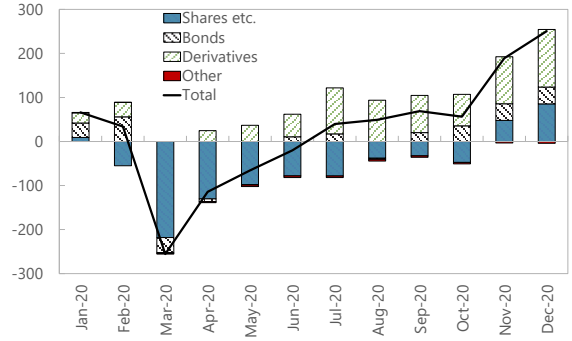
Sources: OECD; and Fund staff calculations.

Figure 6. Denmark: Pension and Insurance Sector Developments

Pension funds experienced large market losses in 2020Q1 but have since recovered.

Pension Fund Performance in 2020

(DKK Billions)

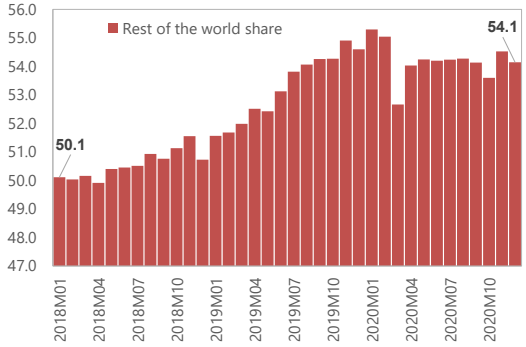


Source: Danmarks Nationalbank.

Pension and insurance companies expanded their geographical exposure…

Insurance and Pension Fund Foreign Exposure Share

(Percent)

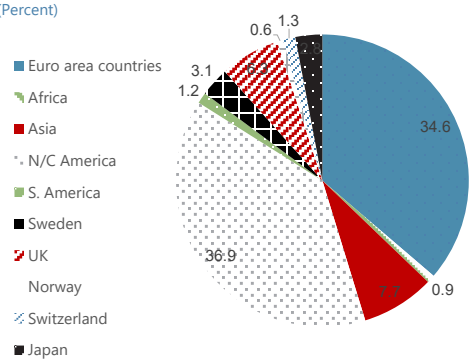


Source: Danmarks Nationalbank.

…with large exposure to US markets.

Insurance and Pension Fund Foreign Exposures

(Percent)

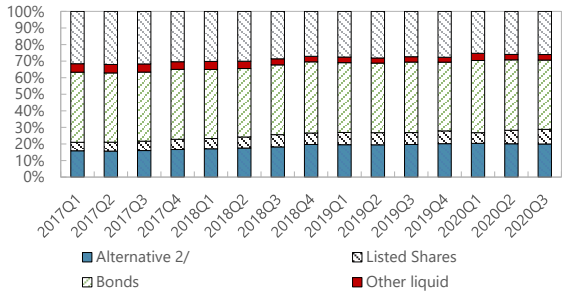


Sources: Danmarks Nationalbank, IMF staff calculations.

The low rate environment has pushed pension and insurance companies into alternative investments….

Insurance and Pension Fund Asset Composition 1/

(Percent)

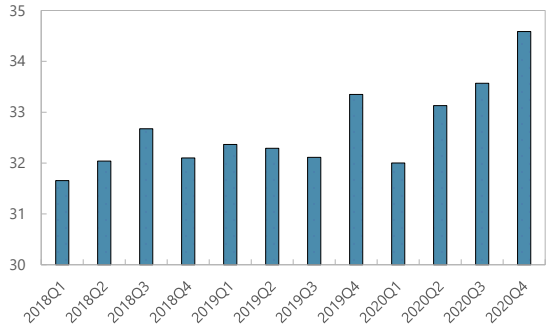


Sources: Danmarks Nationalbank, IMF staff calculations.
1/ Decomposition does not permit Danish investment fund-look through. Other liquid includes deposits and receivables.
2/ Alternatives include unlisted shares, other equity, and direct lending.

Danish insurers have transferred some of this market risk to customers…

Market Rate Product Share of Insurance Provisions

(Percent)

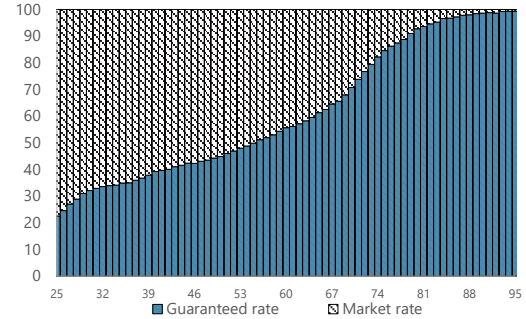


Sources: Danmarks Nationalbank, IMF staff calculations.

… who tend to be younger and have shifted to unit-linked products.

Retirement Savings Rate Type by Age 1/

(Percentage share of number of contracts)



Sources: Statistics Denmark, Danmarks Nationalbank.
1/ Includes retirement savings in life insurance companies, pensions funds and company pension funds.

Table 1. Denmark: Selected Economic and Social Indicators, 2018–26

	2018	2019	2020 est.	2021	2022	2023 proj.	2024	2025	2026
Supply and Demand (change in percent)									
Real GDP	2.2	2.9	-2.7	2.6	3.3	1.9	1.8	1.8	1.8
Final domestic demand	2.5	1.7	-0.5	2.7	2.6	2.3	2.1	2.1	2.1
Private consumption	2.7	1.4	-1.9	2.8	3.6	2.3	2.2	2.2	2.2
Public consumption	0.3	1.2	-0.1	3.2	0.1	0.9	0.9	0.9	0.9
Gross fixed investment	4.8	2.8	2.1	2.1	3.5	3.7	3.0	3.0	3.0
Net exports 1/	-0.5	1.7	-2.1	0.1	0.2	0.1	0.1	0.1	0.1
Gross national saving (percent of GDP)	30.2	31.6	31.0	30.8	31.0	31.0	31.0	31.0	31.0
Gross domestic investment (percent of GDP)	23.1	22.7	23.2	23.0	23.6	23.6	23.7	23.8	23.9
Potential output	1.8	1.8	1.7	1.8	2.2	1.9	1.8	1.8	1.8
Output gap (percent of potential output)	1.7	2.8	-1.7	-1.0	0.0	0.0	0.0	0.0	0.0
Labor Market (change in percent) 2/									
Labor force	0.9	1.5	-0.2	0.2	0.4	0.4	0.4	0.4	0.4
Employment	1.7	1.6	-0.8	0.3	0.6	0.6	0.6	0.4	0.4
Harmonized unemployment rate (percent)	5.1	5.0	5.6	5.6	5.4	5.2	5.0	5.0	5.0
Prices and Costs (change in percent)									
GDP deflator	0.6	0.7	2.3	1.9	1.4	2.1	2.2	2.2	2.2
CPI (year average)	0.7	0.7	0.3	1.1	1.5	1.8	2.0	2.0	2.0
Public Finance (percent of GDP) 3/									
Total revenues	51.2	53.0	52.8	50.9	50.2	50.1	49.7	50.1	50.1
Total expenditures	50.5	49.2	54.0	54.3	51.1	50.7	50.3	50.1	50.1
Overall balance	0.7	3.8	-1.1	-3.3	-0.9	-0.7	-0.6	0.0	0.0
Primary balance 4/	0.3	3.5	-1.5	-3.6	-1.3	-1.0	-0.9	-0.2	-0.2
Cyclically-adjusted balance (percent of potential GDP)	-0.6	1.7	0.1	-2.6	-1.0	-0.7	-0.6	0.0	0.0
Structural balance (percent of potential GDP) 5/	-0.3	0.5	0.3	-0.5	-0.3	-0.1	-0.1	0.0	0.0
Gross debt	33.8	33.0	42.2	40.7	41.2	41.6	41.8	41.9	41.9
Money and Interest Rates (percent)									
Domestic credit growth (end of year)	3.5	4.3	...	...	...	...	...	...	...
M3 growth (end of year)	-2.9	2.6	...	...	...	...	...	...	...
Short-term interbank interest rate (3 month)	-0.3	-0.4	...	...	...	...	...	...	...
Government bond yield (10 year)	0.4	-0.2	...	...	...	...	...	...	...
Balance of Payments (percent of GDP)									
Exports of goods & services	56.3	58.3	54.3	55.7	56.4	56.5	56.6	56.6	56.6
Imports of goods & services	50.4	51.0	47.9	49.1	50.0	50.1	50.3	50.4	50.4
Trade balance, goods and services	5.9	7.4	6.5	6.7	6.4	6.4	6.3	6.3	6.1
Oil trade balance	-0.4	-0.5	-0.4	-0.7	-0.8	-0.8	-0.9	-1.0	-1.1
Current account	7.0	8.9	7.8	7.7	7.3	7.3	7.2	7.2	7.0
International reserves, changes	-0.3	-0.9	-0.1	...	...	...	...	...	...
Exchange Rate									
Average DKK per US$ rate	6.3	6.7	...	...	...	...	...	...	...
Nominal effective rate (2010=100, ULC based)	100.1	99.4	...	...	...	...	...	...	...
Real effective rate (2010=100, ULC based)	95.5	91.8	...	...	...	...	...	...	...
Memorandum Items									
Nominal GDP (Bln DKK)	2254	2335	2324	2431	2546	2647	2755	2867	2983
GDP (Bln USD)	357	350	...	...	...	...	...	...	...
GDP per capita (USD)	61731	60300	...	...	...	...	...	...	...

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, 2018–26

	2018	2019	2020 est.	2021	2022	2023 proj.	2024	2025	2026
				Billions of DKK					
Current Account	158.2	206.8	181.2	186.7	186.7	192.9	199.4	205.2	210.3
Balance on Goods	78.8	121.4	116.4	128.5	120.9	123.7	128.4	132.4	136.3
Merchandise exports f.o.b.	754.0	804.7	773.4	839.4	859.8	884.8	921.4	957.7	993.0
Merchandise imports f.o.b.	675.2	683.3	657.0	710.9	738.8	761.1	793.0	825.3	856.7
Balance on Services	53.7	50.2	34.3	33.9	42.8	45.4	46.2	47.0	47.1
Exports of services, total	514.7	557.1	489.3	515.6	577.1	611.6	638.2	665.9	694.1
Imports of services, total	461.0	506.8	455.0	481.7	534.2	566.2	591.9	618.9	647.0
Balance on Income	25.7	35.2	30.4	24.3	22.9	23.8	24.8	25.8	26.8
Capital and Financial Account	107.5	150.2	97.9	188.2	188.2	194.5	201.0	206.9	212.1
Capital transfer, net	0.2	1.8	0.7	0.7	0.8	0.8	0.8	0.9	0.9
Financial Account	107.3	148.4	97.2	187.4	187.4	193.7	200.2	206.1	211.2
Direct investment, net	-10.6	51.7	31.1	33.1	35.6	23.3	34.4	38.9	52.4
Abroad	41.0	4.2	59.5	62.4	66.2	55.2	67.6	73.5	88.3
In Denmark	51.6	-47.5	28.3	29.3	30.7	31.9	33.2	34.6	36.0
Portfolio investment, net	331.3	38.2	-8.7	49.8	56.4	65.7	56.8	-6.9	-3.4
Assets	135.6	151.0	247.5	161.4	180.7	194.7	196.0	203.2	227.8
Liabilities	-195.8	112.8	256.2	111.5	124.2	129.0	139.2	210.0	231.2
Financial derivatives, net	-17.2	-21.7	-19.3	-20.0	-20.9	-21.7	-22.6	-23.6	-24.5
Other investment, net	-189.2	101.5	96.1	124.5	116.4	126.5	131.6	197.6	186.8
Reserve assets	-7.0	-21.3	-2.0	0.0	0.0	0.0	0.0	0.0	0.0
Net errors and omissions	50.7	56.6	83.2	-1.5	-1.6	-1.6	-1.7	-1.8	-1.8
				Percent of GDP					
Current Account	7.0	8.9	7.8	7.7	7.3	7.3	7.2	7.2	7.0
Balance on Goods	3.5	5.2	5.0	5.3	4.8	4.7	4.7	4.6	4.6
Merchandise exports f.o.b.	33.5	34.5	33.3	34.5	33.8	33.4	33.4	33.4	33.3
Merchandise imports f.o.b.	30.0	29.3	28.3	29.2	29.0	28.7	28.8	28.8	28.7
Balance on Services	2.4	2.2	1.5	1.4	1.7	1.7	1.7	1.6	1.6
Exports of services, total	22.8	23.9	21.1	21.2	22.7	23.1	23.2	23.2	23.3
Imports of services, total	20.5	21.7	19.6	19.8	21.0	21.4	21.5	21.6	21.7
Balance on Income	1.1	1.5	1.3	1.0	0.9	0.9	0.9	0.9	0.9
Capital and Financial Account	4.8	6.4	4.2	7.7	7.4	7.3	7.3	7.2	7.1
Capital transfer, net	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial Account	4.8	6.4	4.2	7.7	7.4	7.3	7.3	7.2	7.1
Direct investment, net	-0.5	2.2	1.3	1.4	1.4	0.9	1.2	1.4	1.8
Abroad	1.8	0.2	2.6	2.6	2.6	2.1	2.5	2.6	3.0
In Denmark	2.3	-2.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Portfolio investment, net	14.7	1.6	-0.4	2.0	2.2	2.5	2.1	-0.2	-0.1
Assets	6.0	6.5	10.7	6.6	7.1	7.4	7.1	7.1	7.6
Liabilities	-8.7	4.8	11.0	4.6	4.9	4.9	5.1	7.3	7.8
Financial derivatives, net	-0.8	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Other investment, net	-8.4	4.3	4.1	5.1	4.6	4.8	4.8	6.9	6.3
Reserve assets	-0.3	-0.9	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Net errors and omissions	2.2	2.4	3.6	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Memorandum items:									
Net oil and oil-related exports	-0.4	-0.5	-0.5	...	...	...	...	...	...
Net sea transportation receipts	2.6	2.9	3.0	...	...	...	...	...	...
Current Account net of items above	4.9	6.4	5.2	...	...	...	...	...	...
Reserves coverage (months of imports)	4.7	4.5	5.1						
Gross External Debt	138.3	137.7	151.7	...	...	...	...	...	...
Gross Domestic Product	2,254	2,335	2,324	2,431	2,546	2,647	2,755	2,867	2,983

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

Table 3. Denmark: International Investment Position, 2012–20

	2012	2013	2014	2015	2016	2017	2018	2019	2020
					Billions of DKK				
Assets	5,133	5,328	5,832	5,956	6,503	6,912	6,832	7,580	8,041
Direct investment	1,388	1,412	1,516	1,627	1,785	1,833	2,006	2,030	1,987
Equity	945	982	1,089	1,184	1,321	1,367	1,499	1,438	1,412
Debt instruments	443	430	427	443	464	466	508	592	575
Portfolio investment	2,086	2,206	2,643	2,704	2,935	3,100	3,148	3,762	4,037
Equity	749	920	1,061	1,180	1,315	1,521	1,537	1,889	2,108
Investment fund shares	166	197	264	271	317	363	365	421	437
Debt securities	1,171	1,088	1,319	1,253	1,303	1,217	1,246	1,452	1,492
Fin. deriv. (other than reserves)	131	69	100	68	40	59	26	68	153
Other investment	1,016	1,161	1,113	1,114	1,295	1,456	1,192	1,274	1,423
Reserve assets	512	480	460	442	449	465	461	446	441
Liabilities	4,448	4,608	4,974	5,275	5,395	5,697	5,353	5,785	6,612
Direct investment	826	806	987	1,015	1,187	1,183	1,291	1,267	1,301
Equity	518	513	655	663	823	830	927	840	843
Debt instruments	308	292	332	352	364	353	364	427	459
Portfolio investment	2,120	2,297	2,649	3,072	2,985	3,251	2,845	3,335	4,046
Equity	575	739	958	1,314	1,133	1,363	1,132	1,492	1,990
Investment fund shares	32	54	55	64	83	107	82	104	113
Debt securities	1,513	1,503	1,636	1,695	1,769	1,781	1,630	1,739	1,942
Financial derivatives	0	0	0	0	0	0	0	0	0
Other investment	1,501	1,506	1,338	1,188	1,223	1,263	1,217	1,183	1,265
Net Investment Position	686	720	858	680	1,108	1,216	1,480	1,795	1,428
Direct Investment	562	607	529	612	598	650	716	763	685
Portfolio Investment	-34	-91	-5	-368	-51	-151	303	427	-8
Other Investment	-485	-345	-225	-73	72	192	-25	91	157
					Percent of GDP				
Assets	270.9	276.1	294.4	292.5	308.5	315.2	303.2	324.6	346.0
Direct investment	73.2	73.2	76.5	79.9	84.7	83.6	89.0	86.9	85.5
Equity	49.9	50.9	55.0	58.1	62.7	62.4	66.5	61.6	60.8
Debt instruments	23.4	22.3	21.5	21.8	22.0	21.2	22.5	25.3	24.7
Portfolio investment	110.1	114.3	133.4	132.8	139.2	141.4	139.7	161.1	173.7
Equity	39.6	47.7	53.6	57.9	62.4	69.3	68.2	80.9	90.7
Investment fund shares	8.8	10.2	13.3	13.3	15.0	16.6	16.2	18.0	18.8
Debt securities	61.8	56.4	66.6	61.6	61.8	55.5	55.3	62.2	64.2
Fin. deriv. (other than reserves)	6.9	3.6	5.0	3.3	1.9	2.7	1.1	2.9	6.6
Other investment	53.6	60.2	56.2	54.7	61.4	66.4	52.9	54.6	61.2
Reserve assets	27.0	24.9	23.2	21.7	21.3	21.2	20.4	19.1	19.0
Liabilities	234.7	238.8	251.0	259.1	256.0	259.8	237.5	247.8	284.6
Direct investment	43.6	41.7	49.8	49.9	56.3	53.9	57.3	54.3	56.0
Equity	27.4	26.6	33.1	32.6	39.0	37.8	41.1	36.0	36.3
Debt instruments	16.3	15.2	16.7	17.3	17.3	16.1	16.1	18.3	19.7
Portfolio investment	111.9	119.0	133.7	150.9	141.6	148.2	126.3	142.8	174.1
Equity	30.3	38.3	48.4	64.5	53.8	62.2	50.3	63.9	85.7
Investment fund shares	1.7	2.8	2.8	3.1	3.9	4.9	3.6	4.4	4.9
Debt securities	79.9	77.9	82.6	83.2	83.9	81.2	72.4	74.5	83.6
Financial derivatives	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other investment	79.2	78.1	67.5	58.3	58.0	57.6	54.0	50.7	54.5
Net Investment Position	36.2	37.3	43.3	33.4	52.6	55.4	65.7	76.9	61.5
Direct Investment	29.6	31.4	26.7	30.0	28.4	29.7	31.8	32.7	29.5
Portfolio Investment	-1.8	-4.7	-0.3	-18.1	-2.4	-6.9	13.4	18.3	-0.4
Other Investment	-25.6	-17.9	-11.3	-3.6	3.4	8.8	-1.1	3.9	6.8

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

Table 4. Denmark: GFSM 2001 Statement of Government Operations, 2018–26

(Billions of DKK)

	2018	2019	2020 est.	2021	2022	2023 proj.	2024	2025	2026
General Government									
Total Revenues	1154.7	1238.1	1227.8	1238.3	1277.6	1325.7	1369.7	1437.3	1495.4
Personal Income Taxes	536.1	555.4	581.0	600.4	600.7	622.1	647.4	673.8	701.0
Pension Return Taxes	13.8	63.4	48.0	9.7	22.9	18.5	19.3	34.4	35.8
Company Taxes	61.5	71.3	61.1	63.2	66.2	68.8	71.6	74.5	77.6
Taxes on Goods and Services	318.8	320.0	323.0	316.0	356.4	370.6	385.7	401.4	417.6
Social Contributions	18.7	19.3	16.3	17.0	17.8	18.5	19.3	20.1	20.9
Interest and Dividends	26.3	24.3	19.9	24.3	22.9	26.5	24.8	22.9	23.9
Other revenues	179.5	184.5	178.5	207.7	190.6	200.7	201.5	210.2	218.7
Total Expenditures	1139.1	1149.9	1254.5	1319.2	1301.5	1343.4	1385.6	1436.1	1494.1
Expense	1064.6	1077.7	1174.4	1231.7	1209.9	1245.5	1289.1	1338.6	1392.7
Public Consumption	536.5	546.9	565.9	604.6	611.7	634.0	658.3	683.4	709.6
Public Subsidies	38.1	38.2	68.7	70.5	40.7	39.7	38.6	40.1	41.8
Interest Expenditures	18.0	17.3	11.9	17.0	12.7	18.5	16.5	17.2	16.4
Social Benefits	393.5	403.0	424.0	437.5	442.9	455.3	473.9	493.1	513.1
Other Expenditures	78.5	72.4	103.9	102.1	101.8	97.9	101.9	104.7	111.9
Net Acquisition of Nonfinancial Assets	74.5	72.1	80.1	87.5	91.6	97.9	96.4	97.5	101.4
Gross operating balance	90.1	160.4	53.4	6.6	67.7	80.3	80.5	98.7	102.8
Net lending/borrowing	15.6	88.3	-26.7	-80.9	-24.0	-17.7	-15.9	1.3	1.3
Net financial transactions	14.6	89.0	-32.0	..	..	..	..	..	..
Net acquisition of financial assets	-5.5	111.3	214.5	..	..	..	..	..	..
Currency and deposits	-29.0	-45.8	60.5	..	..	..	..	..	..
Securities other than shares	37.1	59.9	11.5	..	..	..	..	..	..
Loans	12.5	13.3	65.0	..	..	..	..	..	..
Shares and other equity	1.8	6.9	18.7	..	..	..	..	..	..
Insurance technical reserves	0.0	0.0	0.0	..	..	..	..	..	..
Financial derivatives and employee stock options	2.1	0.1	-8.3	..	..	..	..	..	..
Other financial assets	-30.1	76.8	67.1	..	..	..	..	..	..
Net incurrence of liabilities	-20.1	22.3	246.6	..	..	..	..	..	..
Currency and deposits	-0.1	-0.4	0.9	..	..	..	..	..	..
Securities other than shares	-28.4	9.1	201.7	..	..	..	..	..	..
Loans	4.2	0.2	6.8	..	..	..	..	..	..
Shares and Other Equity	0.0	0.0	0.0	..	..	..	..	..	..
Insurance Technical Reserves	0.0	0.0	0.0	..	..	..	..	..	..
Other liabilities	4.2	13.4	37.2	..	..	..	..	..	..

Sources: Statistics Denmark and Fund staff calculations.

Table 5. Denmark: GFSM 2001 Statement of Government Operations, 2018–26

(Percent of GDP)

	2018	2019	2020 est.	2021	2022	2023 proj.	2024	2025	2026
General Government									
Total Revenues	51.2	53.0	52.8	50.9	50.2	50.1	49.7	50.1	50.1
Personal Income Taxes	23.8	23.8	25.0	24.7	23.6	23.5	23.5	23.5	23.5
Pension Return Taxes	0.6	2.7	2.1	0.4	0.9	0.7	0.7	1.2	1.2
Company Taxes	2.7	3.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Taxes on Goods and Services	14.1	13.7	13.9	13.0	14.0	14.0	14.0	14.0	14.0
Social Contributions	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Interest and Dividends	1.2	1.0	0.9	1.0	0.9	1.0	0.9	0.8	0.8
Other revenues	8.0	7.9	7.7	8.5	7.5	7.6	7.3	7.3	7.3
Total Expenditures	50.5	49.2	54.0	54.3	51.1	50.7	50.3	50.1	50.1
Expense	47.2	46.2	50.5	50.7	47.5	47.0	46.8	46.7	46.7
Public Consumption	23.8	23.4	24.4	24.9	24.0	23.9	23.9	23.8	23.8
Public Subsidies	1.7	1.6	3.0	2.9	1.6	1.5	1.4	1.4	1.4
Interest Expenditures	0.8	0.7	0.5	0.7	0.5	0.7	0.6	0.6	0.6
Social Benefits	17.5	17.3	18.2	18.0	17.4	17.2	17.2	17.2	17.2
Other Expenditures	3.5	3.1	4.5	4.2	4.0	3.7	3.7	3.6	3.7
Net Acquisition of Nonfinancial Assets	3.3	3.1	3.4	3.6	3.6	3.7	3.5	3.4	3.4
Gross operating balance	4.0	6.9	2.3	0.3	2.7	3.0	2.9	3.4	3.4
Net lending/borrowing	0.7	3.8	-1.1	-3.3	-0.9	-0.7	-0.6	0.0	0.0
Net financial transactions	0.6	3.8	-1.4	..	..	..	..	..	..
Net acquisition of financial assets	-0.2	4.8	9.2	..	..	..	..	..	..
Currency and deposits	-1.3	-2.0	2.6	..	..	..	..	..	..
Securities other than shares	1.6	2.6	0.5	..	..	..	..	..	..
Loans	0.6	0.6	2.8	..	..	..	..	..	..
Shares and other equity	0.1	0.3	0.8	..	..	..	..	..	..
Insurance technical reserves	0.0	0.0	0.0	..	..	..	..	..	..
Financial derivatives and employee stock options	0.1	0.0	-0.4	..	..	..	..	..	..
Other financial assets	-1.3	3.3	2.9	..	..	..	..	..	..
Net incurrence of liabilities	-0.9	1.0	10.6	..	..	..	..	..	..
Currency and deposits	0.0	0.0	0.0	..	..	..	..	..	..
Securities other than shares	-1.3	0.4	8.7	..	..	..	..	..	..
Loans	0.2	0.0	0.3	..	..	..	..	..	..
Shares and Other Equity	0.0	0.0	0.0	..	..	..	..	..	..
Insurance Technical Reserves	0.0	0.0	0.0	..	..	..	..	..	..
Other liabilities	0.2	0.6	1.6	..	..	..	..	..	..
Memorandum items									
Primary Balance 1/	0.3	3.5	-1.5	-3.6	-1.3	-1.0	-0.9	-0.2	-0.2
Structural Balance 2/	-0.3	0.5	0.3	-0.5	-0.3	-0.1	-0.1	0.0	0.0
One-off Measures 2/ 3/	-0.3	1.2	-0.2	-2.1	-0.7	-0.6	-0.4	0.0	0.0
Cyclically Adjusted Balance 2/	-0.6	1.7	0.1	-2.6	-1.0	-0.7	-0.6	0.0	0.0
Gross Debt	33.8	33.0	42.2	40.7	41.2	41.6	41.8	41.9	41.9
Gross Domestic Product (Bln. Kroner)	2,254	2,335	2,324	2,431	2,546	2,647	2,755	2,867	2,983

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, 2012–19

	2012	2013	2014	2015	2016	2017	2018	2019
				Billions of DKK				
Assets	1,956	1,959	2,034	1,977	2,090	2,190	2,273	2,480
Financial assets	1,024	1,015	1,074	993	1,071	1,131	1,172	1,353
Monetary gold and SDR	0	0	0	0	0	0	0	0
Currency and deposits	220	218	272	228	156	182	153	107
Securities other than shares	116	102	67	68	70	70	108	170
Loans	164	176	180	184	189	188	202	215
Shares and other equity	415	416	425	420	467	489	524	594
Insurance technical reserves	1	2	1	2	1	1	1	1
Financial derivatives and employee stock options	11	6	5	5	4	4	7	8
Other financial assets	97	95	125	87	183	197	177	257
Capital stock net of depreciation	932	944	959	984	1,019	1,060	1,101	1,128
Liabilities	1,149	1,095	1,172	1,088	1,167	1,157	1,150	1,208
Financial liabilities	1,149	1,095	1,172	1,088	1,167	1,157	1,150	1,208
Monetary gold and SDR	0	0	0	0	0	0	0	0
Currency and deposits	15	15	23	24	24	20	20	20
Securities other than shares	837	764	831	737	734	719	696	732
Loans	154	163	165	170	173	176	180	181
Other financial assets	143	152	153	157	231	236	248	267
Net worth	807	864	862	889	923	1,033	1,123	1,273
Financial net worth	-125	-80	-98	-95	-96	-26	23	145
				Percent of GDP				
Assets	103.2	101.5	102.6	97.1	99.1	99.9	100.9	106.2
Financial assets	54.0	52.6	54.2	48.8	50.8	51.6	52.0	57.9
Monetary gold and SDR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Currency and deposits	11.6	11.3	13.7	11.2	7.4	8.3	6.8	4.6
Securities other than shares	6.1	5.3	3.4	3.4	3.3	3.2	4.8	7.3
Loans	8.7	9.1	9.1	9.0	9.0	8.6	8.9	9.2
Shares and other equity	21.9	21.5	21.4	20.6	22.2	22.3	23.3	25.4
Insurance technical reserves	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Financial derivatives and employee stock options	0.6	0.3	0.2	0.2	0.2	0.2	0.3	0.3
Other financial assets	5.1	4.9	6.3	4.3	8.7	9.0	7.8	11.0
Capital stock net of depreciation	49.2	48.9	48.4	48.3	48.4	48.3	48.8	48.3
Liabilities	60.6	56.7	59.1	53.4	55.4	52.8	51.0	51.7
Financial liabilities	60.6	56.7	59.1	53.4	55.4	52.8	51.0	51.7
Monetary gold and SDR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Currency and deposits	0.8	0.8	1.2	1.2	1.1	0.9	0.9	0.9
Securities other than shares	44.2	39.6	41.9	36.2	34.8	32.8	30.9	31.3
Loans	8.1	8.5	8.3	8.3	8.2	8.0	8.0	7.8
Other financial assets	7.5	7.9	7.7	7.7	10.9	10.8	11.0	11.4
Net worth	42.6	44.8	43.5	43.6	43.8	47.1	49.8	54.5
Financial net worth	-6.6	-4.1	-4.9	-4.7	-4.6	-1.2	1.0	6.2
Memorandum items:								
Nominal GDP (in billions of DKK)	1,895	1,930	1,981	2,036	2,108	2,193	2,254	2,335

Sources: Eurostat, Statistics Denmark and Fund staff calculations.

Table 7. Denmark: Financial System Indicators, 2013–20 1/

(Percent)

	2013	2014	2015	2016	2017	2018	2019	2020
Deposit-taking institutions: Total								
Regulatory capital to risk-weighted assets	22.3	21.0	21.8	23.2	23.8	23.3	24.6	25.3
Regulatory Tier I capital to risk-weighted assets	19.5	18.5	19.5	20.7	21.4	21.5	22.0	22.5
Core / Common Equity Tier 1 capital to risk-weighted assets	16.7	17.3	17.8	18.3	19.3	19.0	19.5	20.6
Nonperforming loans net of provisions to capital	22.4	22.0	17.8	14.2	11.0			
Nonperforming loans net of provisions to capital (new IFRS9)					14.4	16.3	12.3	13.4
Bank provisions to Nonperforming loans	51.0	50.3	50.5	51.0	54.3			
Bank provisions to Nonperforming loans (new IFRS9)					46.9	42.2	44.7	38.3
Nonperforming loans to total gross loans	8.7	8.2	6.9	5.3	4.3			
Nonperforming loans to total gross loans (new IFRS9)					4.9	4.7	3.8	4.1
Sectoral distribution of loans to total loans, of which								
Nonfinancial corporation	37.0	37.3	39.5	39.4	41.2	41.6	38.1	41.2
Households (including individual firms)	32.0	32.5	32.8	34.2	33.4	31.0	32.8	32.8
ROA (aggregated data on a parent-company basis) 2/	0.4	0.4	0.8	1.0	1.2	0.9	0.7	0.4
ROA (main groups on a consolidated basis) 3/	0.4	0.3	0.5	0.7	0.7	0.6	0.5	0.3
ROE (aggregated data on a parent-company basis) 2/	5.7	5.6	9.1	14.1	14.2	10.2	8.2	4.8
ROE (main groups on a consolidated basis) 3/	6.9	6.4	10.2	13.2	14.0	10.2	9.4	5.5
Interest margin to gross income	64.2	60.0	54.4	50.8	46.9	50.0	48.4	47.7
Noninterest expenses to gross income	47.2	55.5	55.2	49.4	46.7	52.5	55.0	60.4
Liquid assets to total assets	30.9	27.3	31.4	32.8	34.4			
Liquid assets to total assets (new IFRS9)					22.2	19.9	19.1	25.7
Liquid assets to short-term liabilities	49.8	42.0	50.3	51.9	54.8			
Liquid assets to short-term liabilities (new IFRS9)					28.5	24.7	23.4	30.9
Foreign currency position	1.2	1.7	1.5	1.5	1.6	1.4	1.1	0.6

Source: Danish Financial Supervisory Authority.

Note: Data for 2020 is through Q3.

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. Policy Responses to COVID-19

Grants to business:

- Temporary compensation scheme for companies' fixed costs.
- Temporary compensation scheme for self-employed and freelancers.
- Compensation scheme for the cancellation and postponement of events (e.g. concerts).
- Sickness benefit reimbursement to employers of sick employees.
- Temporary compensation scheme for freelancers with mixed income.
- Temporary compensation scheme for the media, artists, folk schools, night schools, and seasonally dependent sectors during Christmas seasons.

Employment support & Unemployment benefits:

- Temporary wage compensation.
- A pool of 120 million DKK for initiatives in case of large-scale dismissals.
- Prolonged access to unemployment benefits including self-employed.
- More flexible work-sharing arrangement and creation of a new work-sharing arrangement; suspension of employer financing for work-sharing participation.
- Suspension of 225-hours work requirement to receive social assistance.
- Economic support for high-risk employees.
- Increased access to the economic reward for senior employees.
- A pool of 30 million DKK for initiatives in case of dismissals in small and medium size enterprises.

Boosting business activity:

- Boosting the construction sector and dependent industries as well as increasing liquidity for businesses in general.
- Tax deductions for businesses' R&D expenses were increased to 130 percent.
- Increased tax deductions for summerhouse owners.
- Emergency funds for restaurants to boost activity.
- Emergency funds for construction companies.

Upskilling and Education:

- Unskilled and skilled workers with outdated training are granted the right to higher unemployment benefits if they begin a vocational education.

- The short courses for vocational education and training, which help unemployed adapting to new jobs here and now, are unified, strengthened and simplified.
- Funds for upgrading skills.
- Allocation of 50 million DKK to ensure an enhances reskilling effort in local areas particularly affected by the crisis.
- Economic support to independent residential schools, independent vocational schools and other boarding schools.

Consumption support to Households:

- Release of frozen holiday pay. Due to a new holiday pay law in 2020, one year's worth of holiday pay was frozen until employees retire. The frozen holiday pay is prematurely released to the employees in 2020 and 2021 to stimulate the economy.
- Economic support for parents of children affected by COVID-19.
- Persons who has received a public welfare benefit (unemployment benefit, social pension or student grant) for April 2020 receive 1000 DKK.

Deferred taxes:

- Temporary deferral of payment deadlines for A-taxes (withholding tax) and labour market contributions in 2020.
- Temporary deferral of payment deadlines for VAT rates for large businesses.
- Temporary extension of tax periods for VAT for small and medium sized enterprises.
- Temporary deferral of payment deadlines for B-taxes (provisional tax paid by self-employed businessmen).
- Temporary deferral of payment deadlines for payroll tax for certain businesses.
- Temporary deferral of payment deadlines for A-taxes (withholding tax) and labour market contributions in 2021.
- Advanced payments of tax credits for deficits related to R&D.

Loans:

- Interest free loans based on VAT rates and payroll tax rates.
- Interest free loans based on A-taxes (withholding tax) and labour market contribution (2020 & 2021); deferral of payment deadlines for such loans to November 2021.

- Loans and equity to start-ups and high growth enterprises. The Danish Growth Fund established two new lending schemes—targeted early-stage companies and venture-backed companies—as well as increase their equity investments.
- Temporary extending the borrowing capacity for students.

Guarantees:

- Two new loan guarantee schemes administered by Vækstfonden (The Danish Growth Fund), one for large companies and one for small and medium enterprises (SMEs).
- Credit guarantee for Scandinavian Airlines (SAS).
- Liquidity guarantee schemes for SMEs and large companies with export related activities administered by EKF Denmark's Export Credit Agency.
- Strengthening the Travel Guarantee Fund.
- Reinsurance scheme targeted companies using trade credit insurance.

Equity:

- Recapitalization of SAS AB.
- Established a recapitalization fund under which the Danish state will contribute as an investor of last resort. It will be operational till end 2023 (DKK 10 bn).

Annex II. Risk Assessment Matrix (January 11, 2021)[1]

(Potential Deviations from Baseline)

Source of Risks and Relative Likelihood (High, medium, or low)	Impact if Risk is Realized (High, medium, or low)	Policy Response
Medium **Prolonged pandemic.** The disease proves harder to eradicate, requiring costly containment efforts and prompting persistent behavioral changes rendering many activities unviable. Prolonged support—while needed to cushion the economy—exacerbates stretched asset valuations, fueling financial vulnerabilities. **Faster containment.** Pandemic is contained faster than expected due to the rapid production and distribution of vaccines, boosting confidence and economic activity.	**High** Demand in contact intensive services remains low for longer. Financial markets reassess real economy risks leading to a repricing of risk assets. Household, CRE and corporate vulnerabilities worsen, affecting banks. **High** Strong confidence impact in the near term; activity recovers faster than expected over the medium term.	Keep providing adequate support to the health system. Fully use available fiscal space to support households and businesses overcome liquidity needs while encouraging necessary reallocation of resources.
Medium **Sharp rise in global risk premia exposes financial vulnerabilities.** A reassessment of market fundamentals (e.g., in response to adverse COVID-19 developments) triggers a widespread risk-off event. Risk asset prices fall sharply and volatility spikes, leading to significant losses in major non-bank financial institutions. Higher risk premia generate financing difficulties for leveraged firms (including those operating in unviable activities) and households, and a wave of bankruptcies erode banks' capital buffers.	**High** Tighter financial conditions would weigh on households and undermine consumption. Adverse spillover to other (viable) sectors through lower incomes and intermediate input demand. Higher unemployment due to bankruptcies and pressures on the social security system.	Reduce vulnerabilities of household and financial sectors by expanding macroprudential toolkit, with particular attention to lower-income groups. Stand ready to release buffers and to provide emergency liquidity. Deploy cyclical fiscal support as needed.
Medium **Accelerating de-globalization.** Despite renewed efforts to reach multilateral solutions to existing tensions, geopolitical competition leads to further fragmentation. Reshoring and less trade reduce potential growth.	**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 eventually impacting domestic demand and growth.	Allow automatic stabilizers to operate. If necessary, provide additional fiscal support. Move ahead with structural reforms and let flexicurity operate to facilitate sectoral reallocation of capital and labor.
Medium **Failure to address macrofinancial risks.** These include high household leverage amid elevated house valuations, new money laundering cases, and close interlinkages across the Nordic financial system.	**High** A housing bust cycle would affect highly-indebted households, with severe knock-on effects on the broader economy. New money laundering cases could negatively impact confidence in the financial sector. A marked reversal of high house prices in the Nordic region would adversely affect financial conditions, given close linkages of the regional banking system.	Continue vigilant financial surveillance and make use of available tools to discourage further build-up of housing debt. Address bottlenecks in rental market and zoning policies, especially in urban areas. Continue implementation of regulatory agenda to bolster banks' buffers and efforts to further strengthen AML/CFT supervision. After the shock, support liquidity as needed.

[1] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path. 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. The conjunctural shocks and scenario highlight risks that may materialize over a shorter horizon (between 12 to 18 months) given the current baseline. Structural risks are those that are likely to remain salient over a longer horizon.

Annex III. On the Status of Denmark's Transition to a Green Economy

1. Although Denmark is a leader in green technology, environmental challenges persist. It is ranked second (after Iceland) in MIT's Green Future Index, which is assessing 76 countries on their progress and commitment toward building a low carbon future. Denmark has one of the most ambitious climate targets in the world and wants to reduce Greenhouse Gas Emissions (GHG) by 70 percent in 2030. In practice, this means that Denmark must slash projected emissions for 2030 in half, a goal that dwarfs even the momentous target recently announced by the EU of cutting emissions 55 percent over the same horizon. Since the mid-90s, Denmark has successfully decoupled its emissions from economic activity, while renewables rose from 15 to 35 percent of total primary energy supply over the last decade.[1] It is one of the first countries to develop and implement a green energy strategy based on a broad political agreement.[2] It is also a leader in wind energy and its patents have the highest level of specialization in environmental technology among OECD countries supporting its strong position in green exports. By contrast, it has had the highest levels of municipal waste per capita in the OECD since 2007.[3] And in spite of strong pollution management, Denmark still faces excessive levels of nitrogen discharges into its coastal waters, of which only 1.7 percent are in good ecological status. While emissions in most sectors decreased, they remained flat or even increased in the agricultural and transportation sectors respectively. This keeps particle pollution in cities and agricultural ammonia emissions high and brings the number of premature deaths caused by air pollution above the OECD average.[4]

2. The authorities have taken several steps to foster the transformation to a green economy. In 2018 authorities committed to increase investment in clean energy innovation by doubling funding to the Danish Energy Technology Development and Demonstration Programme to DKK 580 million (0.02 percent of GDP) by 2020. The 2018 Energy Agreement plans a gradual increase in state funding for research and development (R&D) in green technology to DKK 1 billion (0.04 percent of GDP) by 2024. Another DKK 1.5 billion has been budgeted by the government to fund green R&D in 2020. To reduce emission in the transportation and agricultural sectors, the authorities aim to invest in public transportation and agricultural emission mitigation and innovation. A new political agreement on infrastructure investment (March 2019) envisages increasing railway investment in coming years to DKK 51.5 billion (2.2 percent of GDP).[5] Authorities

[1] OECD Environmental Performance Reviews, Denmark(2019).

[2] *Energy agreement*. In June 2018, the government entered into a politically broad agreement to enhance Denmark's international strengths within renewable energy, energy efficiency, research and energy regulation. The agreement ensures three new large offshore wind farms, a new pool for wind power and solar energy, a targeted energy saving campaign and targeted strengthening of energy and climate research.

[3] The cost of waste management services is among the highest in OECD Europe. Municipalities have considerable autonomy in waste management planning, including on the treatment of most waste. Heavy investment by municipalities in incineration plants has created excess capacity.

[4] OECD Environmental Performance Reviews, Denmark (2019).

[5] In addition, there are plans to buy new electric trains, which could cost as much as DKK 20 billion (0.9 percent of GDP).

will also allocate DKK 2 billion over 2020–2029 to reduce GHG emissions from agriculture. A partnership between the government and two large agricultural organizations was established to co-ordinate R&D on GHG mitigation techniques in agriculture.[6] In addition, a new "Green Future Fund" which manages DKK 25 billion (1.1 percent of GDP) was established in 2020.[7] Furthermore, Denmark wants to intensify export promotion activities in the energy sector to a total of DKK 174 million from 2019 to the end of 2024 to advance its leading role in green energy exports.[8] In 2020, the authorities have announced several initiatives under the Green Tax Reform (Annex Box III.1) that will increase public investments (e.g. off-shore wind farms) and facilitate a green transformation. Currently, the planned increase in public investment is envisaged to reach about 3.7 percent of GDP in 2023 (Convergence Programme 2021). In addition, the Danish pension industry has pledged to invest DKK 350 bn in the green transition by 2030 (Danish Energy Agency, Climate Programme, 2020).

Annex Box III.1. Green Tax Reform

The Green Tax Reform targets a green restart of the Danish economy. Phase 1 (2021–25) would provide a net easing of about 4.5 billion DKK (around 0.2 percent of 2020 GDP) over the next five years. This comprises of a total tax relaxation of about 5.2 billion DKK which is partly offset by energy tax increases of about 715 million DKK. The relaxation—phased-in starting 2021—seeks to promote green investment via incentives such as increased deductions for climate-related business restructuring. The increase in energy taxes is phased-in only during 2023–25.

Green Tax Reform Phase 1: Tax and Duty Reductions and Increase (million DKK)

	2021	2022	2023	2024	2025	2021-25
Relaxation in total	1,130	1,510	1,140	875	600	**5,255**
Raise the limit for immediate depreciation	500	380	290	220	180	**1,570**
Investment window in 2021 and 2022	620	1,020	740	540	400	**3,320**
Maintenance of bottom deduction in sulfur tax	10	10	10	10	10	**50**
Expanding the business pool	0	100	100	105	10	**315**
Tax increase	0	0	-170	-185	-360	**-715**
Net easing	**1,130**	**1,510**	**970**	**690**	**240**	**4,540**

Source: Ministry of Taxation and Ministry of Finance.

However, from the emission standpoint, more needs to be done. According to the proposal, Phase 1 is expected to reduce emissions by only about ½ million ton of CO_2 emissions in 2025, and a further reduction of 16 million tons is needed to reach Denmark's 70 percent target by 2030 (Green Tax Reform 2020).

[6] The authorities have set up a "growth team" for green energy and environmental technology. It aims to "strengthen green growth through strong frameworks for market-driven business development, … and making recommendations for how digital and other technological opportunities can best be exploited."

[7] The fund will contribute to the green transition in Denmark and abroad including development and deployment of new technologies, conversion of energy systems to renewable energy, storage and efficient energy use etc. and promote global export of green technologies, particularly in regard to wind. (DNEC December 2019)

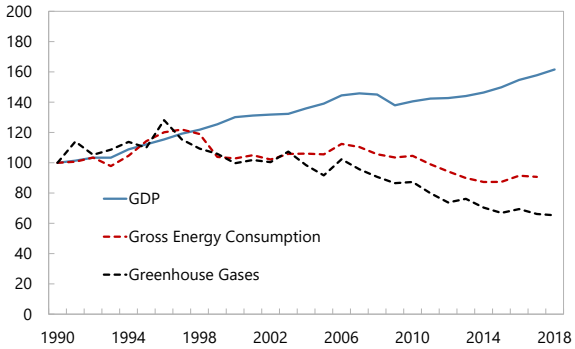
[8] OECD Environmental Performance Reviews, Denmark (2019)

Annex Figure III.1. Denmark's Green Transformation

Denmark has successfully decoupled its economic growth from energy consumption and greenhouse gas emission.

GDP Decoupled from Energy and Emission in the Late 90's

(Index, 1990=100)

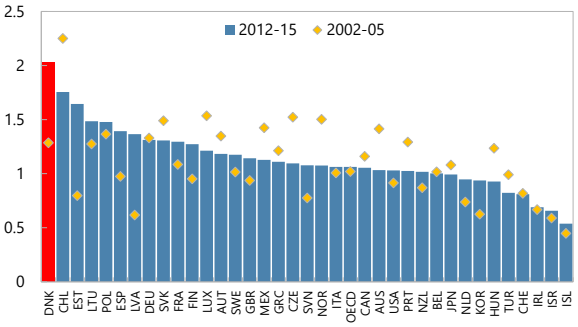


Source: Statistics Denmark.

Its patents have the highest level of specialization in environmental technology among OECD countries…

Relative Advantage in the Specialization of Environmental Technologies, 2002-05 and 2012-15

(Index)

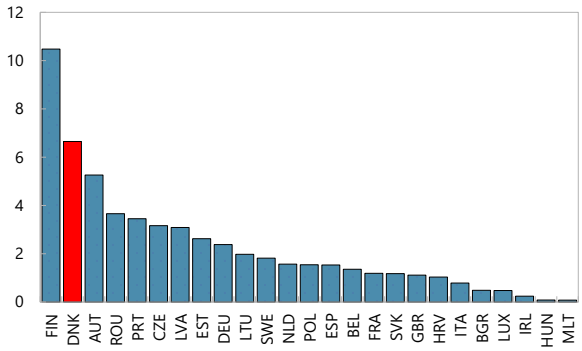


Source: OECD.

…. supporting its strong position in green exports such as wind turbines.

Share of Green Exports, 2016

(Percent)

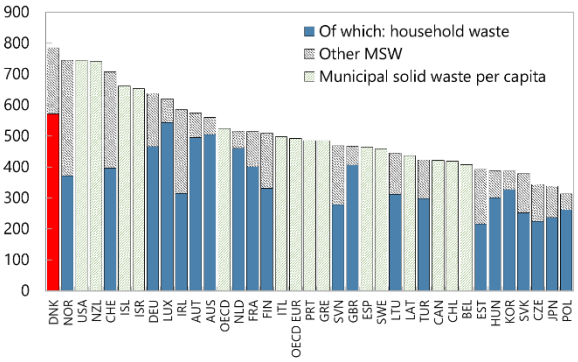


Sources: Eurostat; and IMF staff calculations.

However, it has had the highest levels of municipal waste per capita in the OECD.

Municipal Waste Generation Per Capita, 2017

(Kilogram per capita)

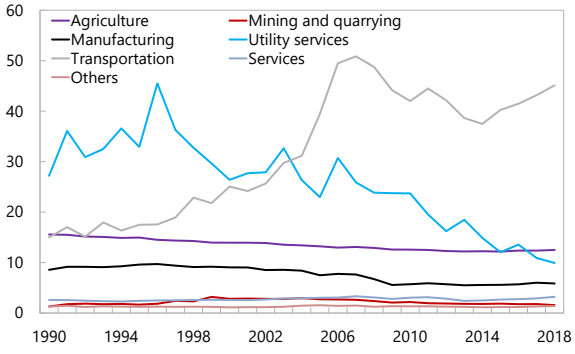


Sources: OECD (2019). "Municipal waste". *OECD Environmental Statistics* (database).

While emissions in most sectors decreased, they remained flat or even increased in the agricultural and transportation sectors…

Greenhouse Gas Emissions Per Sector

(1,000,000 tonnes, in CO2 equivalents)

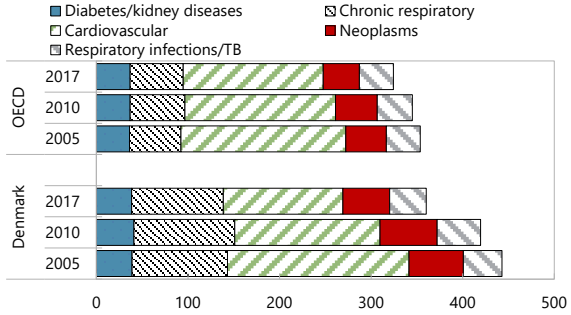


Source: Statistics Denmark.

….this keeps particle pollution in cities high and brings the number of premature deaths caused by air pollution above the OECD average.

Number of Premature Deaths Caused by Ambient PM Pollution in Denmark and in the OECD, 2005-17

(Per million inhabitants)



Sources: OECD (2018), "Exposure to air pollution", OECD Environment Statistics (database).

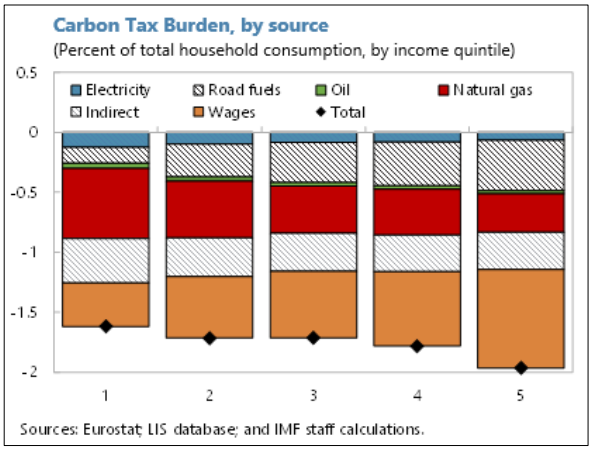
3. Denmark's transformation to a green economy provides an opportunity to lift investment for climate mitigation. The Danish Energy Agency (2021) estimates that the 70 percent GHG-reduction target will be missed by 15 percent. To achieve its emission goals by 2030, the Danish National Energy and Climate Plan (DNEC December 2019) estimates that accumulated public and private investment needs are equal to DKK 100–180 billion (4.3–7.8 percent of GDP or about 0.4 percent of GDP annually). The new Green Tax Reform is estimated to reduce the emission gap by 4 percentage points. But unless the carbon tax is raised substantially, the 70 percent target would be missed. The Danish Economic Council estimates that if Denmark were to raise the carbon tax to USD 190 per ton of CO_2 uniformly it would meet the 70 percent target. However, this estimate assumes that carbon capture and storage—a new technology—will contribute about 1/3 of the total reduction in 2030, if this technology will only be able to provide half the storage capacity then the price would have to increase to more than USD 315 per ton.[9] But, it is difficult to forecast the impact of this steep increase and to gauge its political acceptability. In any case, a prompt definition of the tax framework, including the level and base of carbon taxation is recommended, as it would reduce uncertainty and provide incentives for private investment.

4. A new IMF working paper takes a closer look at Denmark's carbon pricing strategy. Fund work (Batini et al. 2020) has shown that a robust and predictable carbon price provides across-the-board incentives for households and firms to adopt low-carbon technologies. The paper suggests that setting up a comprehensive strategy with enhanced carbon pricing as its centerpiece, with reinforcing mitigation incentives across different sectors, and measures to ensure households and firms are not hit hard, may offer better chances to achieve the 2030 target. Carbon pricing can be scaled up by applying a domestic carbon surcharge to power and industry emissions, and by automatically ramping up the domestic carbon tax on transportation and building emissions. Imposing a border carbon adjustment would be an especially important addition since it would address domestic competitiveness and leakage concerns, at least until this instrument is implemented at the EU level. Sectoral instruments would need to play an important role as well. One way to do so involves introducing "feebates," a revenue-neutral, sliding scale of *fees* on products or activities with above-average emission rates and a sliding scale of *rebates* on products or activities with below-average emission rates.[10]

[9] Danish Economic Council "Economy and Environment, 2020: Summary and Recommendations" (March, 2021)

[10] Feebates, for example, could be applied to the vehicle sector, which is the largest source of domestically generated emissions from transportation in Denmark. A basic feebate scheme with a price of $1,000 per ton of CO2 would imply that a full electric Tesla Long Range AWD Model 3 would receive a subsidy of $14,000 while imposing a tax of $6,000 on its gasoline counterpart, the Audi A5. By closing the retail price gap between the pricier electric vehicles and traditional ones, a feebate of this kind can encourage sales of zero-emission cars.

5. Mitigation policies should be part of a comprehensive fiscal reform that addresses distributional concerns. Staff analysis suggests that a carbon price of $100 per ton of CO_2 in 2030 would impose an average burden on households of 1.8 percent of consumption by making consumption goods pricier. Such a carbon tax is estimated to collect around 1.6 percent of total consumption in tax revenues, close to the average burden. By recycling these revenues—along with an additional fiscal adjustment of 0.2 percent—the household burden can be alleviated at minimal fiscal cost. Alternatively, the carbon revenues could be used to lower Denmark's high marginal tax rates—this would help incentivize labor supply.



6. Targeted measures to reduce emission in the agricultural sector should be taken. The agricultural sector accounts for approximately 20 percent of total GHG emissions—currently double the share of an average EU country—and takes up more than 60 percent of the surface area. The use of subsidies under the EU's Common Agricultural Policy (CAP) hampers price-based policies that could encourage investments as most farmers operate on low margins and depend on CAP subsidies.[11] Thus, several non-price policies have been widely used in varying scope and intensity across EU members within the CAP framework to encourage emission reduction in agriculture. Most efforts with a large-scale and long-term mitigation impact, such as managing biogenic emissions (e.g., installation of fermentation facilities for biogas generation), will require significant (upfront) investments that are not fully self-financing at the moment. Thus, consideration should be given to subsidies and increasing the budget to convert environmentally valuable farmland into natural sites through the Multifunctional Land Redistribution Fund, including through the mobilization of private funds.

7. Considerable investments are necessary for climate adaptation, such as preparations for rising sea levels and stronger and more frequent natural disasters. Staff analysis shows that investment needs for climate adaptation could be as high as 1.7 percent of GDP annually between 2020 and 2030, including in building new coastal protection infrastructure as well as in upgrading investment projects and retrofitting existing assets exposed to rising sea levels.[12] Unofficial information suggest that DKK 50–75 billion (2.1-3.1 percent of GDP) might be necessary to guard

[11] This argument is conditional on the persistence of EU subsidies for agriculture. Re-scaling CAP resources overall would very likely raise the effectiveness of price-based measures as the sector consolidates but also raises socio-economic challenges (i.e., labor force flexibility and skills mismatches, food security, etc.).

[12] The estimate for coastal protection uses new projections of coastal protection construction cost (Nicholls and others, 2019) and relies on a Dynamic Interactive Vulnerability Assessment (DIVA) climate model. Upgrading cost for new infrastructure projects are computed as the annual investment projections on average over 2020–25, multiplied by the estimated share of exposed assets, and by a unit cost of 15 percent (Rozenberg and Fay, 2019). Retrofitting cost are computed as the public capital stock (from the IMF's 2019 Investment and Capital Stock Dataset), multiplied by the estimates share of exposed assets and by a unit cost of 50 percent.

Denmark against these climate risks but there is no nationally agreed number yet. A national climate adaptation strategy that will include an assessment of the investment needs is expected to be finalized by end-2022.

Annex IV. Debt Sustainability Analysis

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

(in percent of GDP unless otherwise indicated)

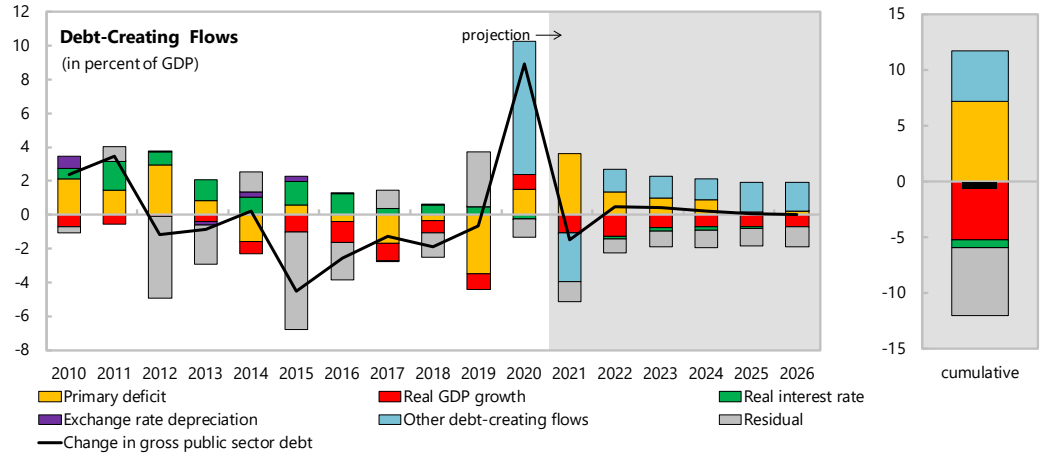
Debt, Economic and Market Indicators [1/]

	Actual			Projections					
	2010-2018 [2/]	2019	2020	2021	2022	2023	2024	2025	2026
Nominal gross public debt	41.0	33.3	42.2	40.7	41.2	41.6	41.8	41.9	41.9
Public gross financing needs	6.1	1.2	6.3	7.5	6.6	12.4	8.7	7.5	6.9
Net public debt	16.4	12.2	15.0	17.5	17.7	17.7	17.6	16.8	16.1
Real GDP growth (in percent)	1.8	2.9	-2.7	2.6	3.3	1.9	1.8	1.8	1.8
Inflation (GDP deflator, in percent)	1.2	0.7	2.3	1.9	1.4	2.1	2.2	2.2	2.2
Nominal GDP growth (in percent)	3.0	3.6	-0.5	4.6	4.7	4.0	4.1	4.1	4.0
Effective interest rate (in percent) [4/]	3.6	2.3	1.5	2.0	1.0	1.6	1.7	2.0	2.3

As of May 06, 2021		
Sovereign Spreads		
EMBIG (bp) 3/		27
5Y CDS (bp)		8
Ratings	Foreign	Local
Moody's	Aaa	Aaa
S&Ps	AAA	AAA
Fitch	AAA	AAA

Contribution to Changes in Public Debt

	Actual			Projections							
	2010-2018	2019	2020	2021	2022	2023	2024	2025	2026	cumulative	debt-stabilizing
Change in gross public sector debt	-0.7	-0.7	8.9	-1.5	0.5	0.4	0.2	0.1	0.0	-0.3	primary
Identified debt-creating flows	0.8	-3.9	10.0	-0.3	1.3	1.3	1.2	1.1	1.2	5.7	balance [9/]
Primary deficit	0.4	-3.5	1.5	3.6	1.3	1.0	0.9	0.2	0.2	7.2	1.0
Primary (noninterest) revenue and grants	52.6	52.0	52.0	49.9	49.3	49.1	48.8	49.3	49.3	295.8	
Primary (noninterest) expenditure	53.0	48.5	53.5	53.6	50.6	50.0	49.7	49.5	49.5	303.0	
Automatic debt dynamics [5/]	0.4	-0.4	0.7	-1.1	-1.5	-1.0	-0.9	-0.8	-0.7	-5.9	
Interest rate/growth differential [6/]	0.3	-0.4	0.7	-1.1	-1.5	-1.0	-0.9	-0.8	-0.7	-5.9	
Of which: real interest rate	1.0	0.5	-0.2	0.0	-0.2	-0.2	-0.2	-0.1	0.0	-0.7	
Of which: real GDP growth	-0.7	-0.9	0.9	-1.0	-1.3	-0.8	-0.7	-0.7	-0.7	-5.3	
Exchange rate depreciation [7/]	0.1	0.0	0.0	...	...	...	...	...	...	...	
Other identified debt-creating flows	0.0	0.0	7.8	-2.9	1.4	1.3	1.3	1.7	1.7	4.5	
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	
"Below the line" COVID measures; social housing bonds	0.0	0.0	7.8	-2.9	1.4	1.3	1.3	1.7	1.7	4.5	
Residual, including asset changes [8/]	-1.5	3.3	-1.1	-1.2	-0.8	-0.9	-1.0	-1.0	-1.2	-6.1	



Source: IMF staff calculations.

1/ Public sector is defined as general government.

2/ Based on available data.

3/ Long-term bond spread over German bonds.

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

5/ Derived as [(r - 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.

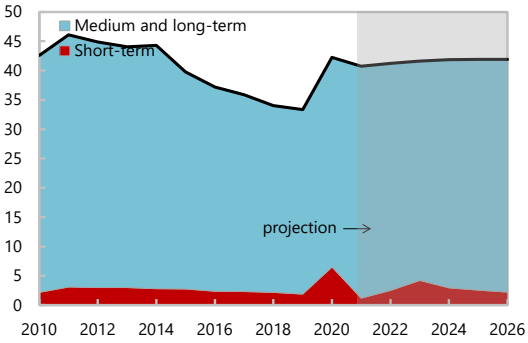
9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

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

Composition of Public Debt

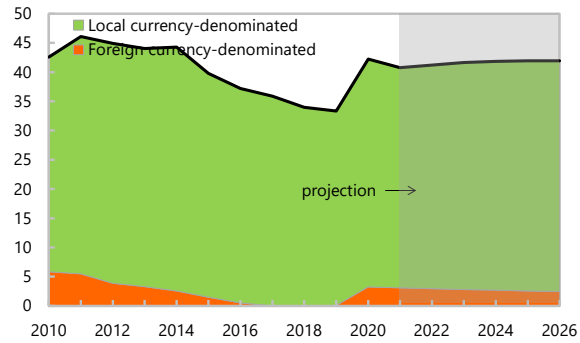
By Maturity

(in percent of GDP)

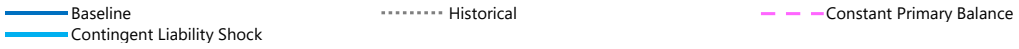


By Currency

(in percent of GDP)

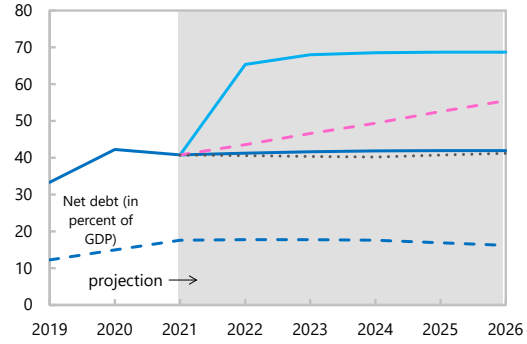


Alternative Scenarios



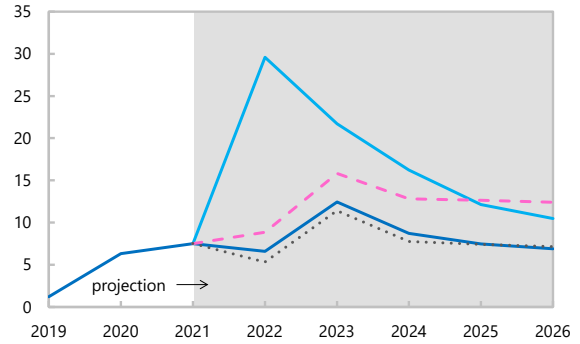
Gross Nominal Public Debt

(in percent of GDP)



Public Gross Financing Needs

(in percent of GDP)



Underlying Assumptions

(in percent)

Baseline Scenario	2021	2022	2023	2024	2025	2026
Real GDP growth	2.6	3.3	1.9	1.8	1.8	1.8
Inflation	1.9	1.4	2.1	2.2	2.2	2.2
Primary Balance	-3.6	-1.3	-1.0	-0.9	-0.2	-0.2
Effective interest rate	2.0	1.0	1.6	1.7	2.0	2.3
Constant Primary Balance Scenario						
Real GDP growth	2.6	3.3	1.9	1.8	1.8	1.8
Inflation	1.9	1.4	2.1	2.2	2.2	2.2
Primary Balance	-3.6	-3.6	-3.6	-3.6	-3.6	-3.6
Effective interest rate	2.0	1.0	1.5	1.6	1.9	2.1

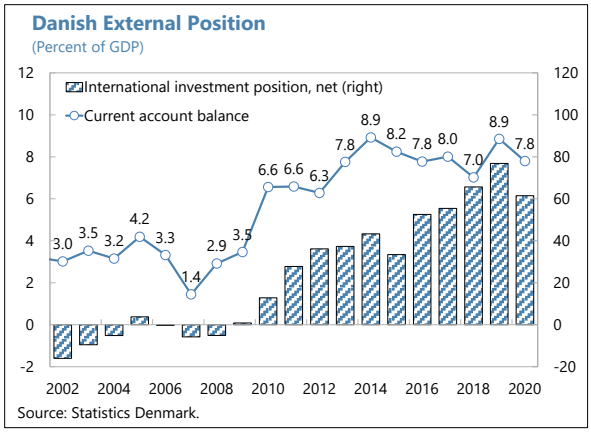
Historical Scenario	2021	2022	2023	2024	2025	2026
Real GDP growth	2.6	1.5	1.5	1.5	1.5	1.5
Inflation	1.9	1.4	2.1	2.2	2.2	2.2
Primary Balance	-3.6	0.0	0.0	0.0	0.0	0.0
Effective interest rate	2.0	1.0	1.9	2.7	3.2	3.7
Contingent Liability Shock						
Real GDP growth	2.6	1.5	0.1	1.8	1.8	1.8
Inflation	1.9	0.9	1.6	2.2	2.2	2.2
Primary Balance	-3.6	-24.2	-1.0	-0.9	-0.2	-0.2
Effective interest rate	2.0	1.1	3.5	3.2	3.0	3.2

Source: IMF staff calculations.

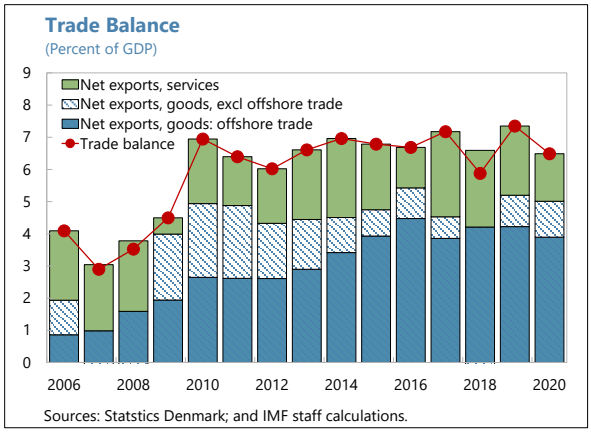
Annex V. External Sector Assessment

Staff assess the external position of Denmark in 2020 to be stronger than implied by medium-term fundamentals and desirable policies. The current account surplus has come down in 2020 to 7.8 percent of GDP amid a decline in net exports of services due to the fallout from the pandemic. The decrease reflects both a decline in savings and a rise in investment. The surplus remains high and is mainly driven by offshore activity of Danish multinational corporations and investment income. Structural polices aimed at raising investment, including climate- and digital-related, and through a gradual improvement in capital markets, would help reduce the surplus.

1. Denmark's external position has come down in 2020. The current account (CA) surplus in 2020 declined by 1.1 percentage points to 7.8 percent of GDP amid a decline in the export of services, mostly transport, construction, and information and technology (IT) services. However, the current account surplus remains above its pre-COVID average of 7.5 percent. The large increase in the external balance since 2009 has resulted in accumulation of foreign assets of 346 percent of GDP in 2020, via direct and portfolio investment by firms, pension funds, and households. Despite the CA surplus, the net international investment position (NIIP) decreased by about 15 percentage points to 61.5 percent of GDP in 2020. The decline in the NIIP was driven by a strong Danish stock market and a weaker dollar exchange rate.[1]



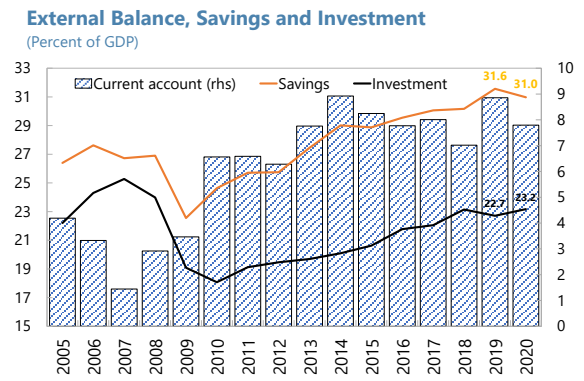
2. Offshore trade and investment income from abroad are significant drivers of the current account. Danish net exports of goods make up most of the trade balance (5.5 out of 6.4 percent of GDP in 2020). Importantly, in the last decade, an increasing share of exports is produced outside Denmark (3.9 percent of GDP in 2020 from less than 1 percent fifteen years ago). This can be explained by the growing integration of Danish firms in global value chains and the activities of large Danish multinational corporations in merchanting and processing



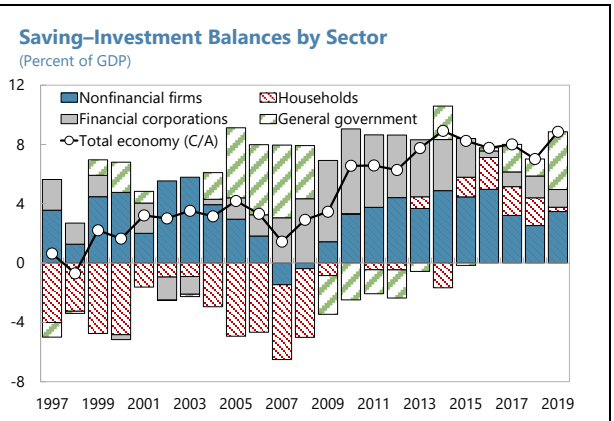
[1] The Danish stock market outperformed foreign stock markets. Therefore, the value of foreign investors' Danish shares has increased more than the value of Danes' foreign shares. Negative exchange rate changes also contributed to an isolated decline. The dollar exchange rate is particularly significant for the IIP as a large part of Danes' foreign assets are invested in dollar assets (Danmarks Nationalbank, 2021).

trades.[2] The large international investment position also generates considerable income from abroad, as Danish residents have invested significantly in foreign assets which usually yield more than foreigners' holdings of Danish assets.

3. In line with the declining CA, investments have picked up while savings have declined in 2020. Investments rose to 23.2 percent of GDP (increasing by 0.5 percentage points from 2019) and savings declined to 31 percent of GDP (decreasing 0.6 percentage points from 2019). After the GFC, savings and investment declined considerably, but savings recovered more quickly. Nonfinancial firms reduced their investment and sought to repair their balance sheets by deleveraging. Following a large housing price decline, households sought to repay part of their large debt and increased their savings in the process.[3] Investment recovered more slowly after the crisis. This resulted in a sizeable increase of the net lending position (savings minus investment) of nonfinancial firms. This partially explained the increase in the current account surplus, along with the increased need of banks to shore up capital by retained earnings (i.e., savings).



Sources: Statistics Denmark; and IMF staff calculations.

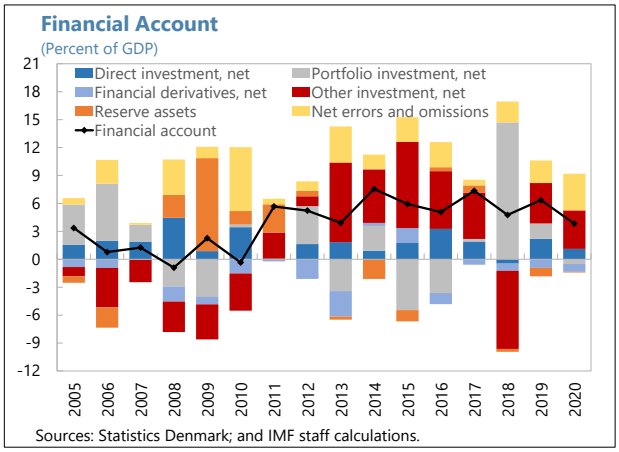


Sources: Statistics Denmark; and Fund staff calculations.

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

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

4. Capital outflows have also declined in 2020 on account of lower portfolio and direct investment. The capital and financial account has decreased by 2.4 percentage points in 2020 to 4.2 percent of GDP driven by lower portfolio investments and direct investments which decreased by 2 and 0.6 percentage points respectively. Other investments (such as the provision of loans, insurance, pension, trade credits etc.) make up most of the financial account with 4.2 percent of GDP, followed by direct investment (1.3 percent of GDP) and portfolio investment (-0.4 percent of GDP). However, errors and omissions, that averaged 2.8 percent of GDP in the past three years, continue to blur the capital flow assessment.



5. Denmark's currency is pegged to the Euro. The peg has served Denmark well. The DN adjusts the interest rate spread relative to the ECB's monetary policy rate in response to krone pressures but also influences the exchange rate using interventions financed via its FX reserves. For example, in March when the pandemic hit, the central bank intervened to avert depreciation pressures as institutional investors unwound currency hedges following sharp declines in the value of their foreign exposures. Nevertheless, reserve assets stayed broadly the same at the end of the year at 19 percent of GDP (decreasing by a 0.1 percentage point) or 5.1 months of imports.

6. Staff assess the external position to be stronger than the level consistent with medium-term fundamentals and desirable policies, but this assessment is subject to important uncertainties. The IMF's External Balance Assessment model estimates the cyclically-adjusted current account position at 8.4 percent of GDP for 2020, a current account norm of 5.1 percent of GDP, and COVID-19 adjustors of 0.3 percent of GDP (consisting of adjustors for oil (0.0), tourism (0.0), tradable goods (0.1) and medical products (0.3)).[4] Considering these factors, staff

[4] Based on the EBA model (forthcoming External Sector Report), the COVID-19 adjustors are calculated as follows: **Oil adjustor:** Is based on (i) the estimated historical relationship between changes in the oil balance and the cyclically adjusted CA/GDP and (ii) the temporary component of the expected change in the oil balance in 2020. The latter is computed by subtracting the change in the projection for 2025 from the change in the projection for 2020. **Tourism adjustor:** Is based on (i) the estimated relation between changes in the tourism balance using annual data for 1986–2019 for the sample of EBA economies and the CA/GDP and (ii) the projected COVID-19 direct impact in 2020. The latter is based on high-frequency data for 2020 which is obtained from national authorities via CEIC. Forecasts for the services travel balance for 2020 use current available data, and assume that for the remaining of the year the travel balance will behave like the latest available observation, seasonally adjusted. **Tradable good adjustor:** Is based on a comparison of (i) the level of durables, nondurables, and services consumption that would have occurred in 2020:Q2–Q4 based on their 2019:Q2–Q4 shares in private consumption and the evolution of total private consumption in 2020; (ii) the actual level of durable, nondurable, and services consumption in 2020; and (iii) the import content of durable, nondurable, and services consumption. The impact of the associated rise in imports is allocated to exporters based on trade weights for durable and other goods. In order to avoid overlaps with medical and tourism factors, the calculations excludes consumption of medical and pharma goods from durables, and consumption of foreign travel from services. **Medical products adjuster:** Is based on UN Comtrade data for COVID-19 related medical products (based on the WTO 2020 note on "Trade in Medical Goods in the Context of COVID-19). The export data are adjusted

(continued)

assess the current account gap at around 3.6 percent, which indicates that the external position is stronger than the level consistent with medium-term fundamentals and desirable policies.[5] Although the CA declined in 2020, the assessment has not changed compared to last year when Denmark's external position was assessed to be stronger than the level implied by medium-term fundamentals and desirable policies. However, the estimated EBA norm for Denmark has been below the actual CA balance for the past ten years, suggesting that these estimates remain subject to uncertainties, as they don't appear to 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 funds generous pension incomes (with replacement rates among the highest in the OECD), create significant structural savings (see also DN 2017). The effect of higher mandatory individual savings on the national savings rate is subject to some debate. Some research suggests that higher mandated pension savings need not lead to higher national savings because of substitution effects and borrowing considerations by households (Samwick 2000). However, 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 an overestimation of the current account surplus.[6]

7. Structural polices aimed at raising investments would help reduce the surplus. The planned increases in public and private investments related to the green and digital transformation of the economy are expected to reduce the excess surplus. Equally, policies aiming at increasing equity financing through a gradual improvement in capital markets, could further support a decrease in the current account.

to subtract foreign value added (intermediate good imports) and these computed intermediate good imports are added to imports for each economy considered in the analysis. The intermediate imports are also allocated to exporters based on total goods export shares in 2020. Finally, the analysis computes the associated change in net exports in 2020 compared with 2019.

[5] Estimates based on the EBA model indicate that Denmark's cyclically adjusted fiscal stance—which was not as expansionary as in the rest of the world—may have contributed to the high CA.

[6] "*Globalisation implies that goods sold abroad by Danish firms to an increasing extent are completely or partially produced abroad. This complicates the interpretation of the developments in imports, exports, investment income and GDP, because they can be affected by the location of firms' head office and internal accounting structure.*"

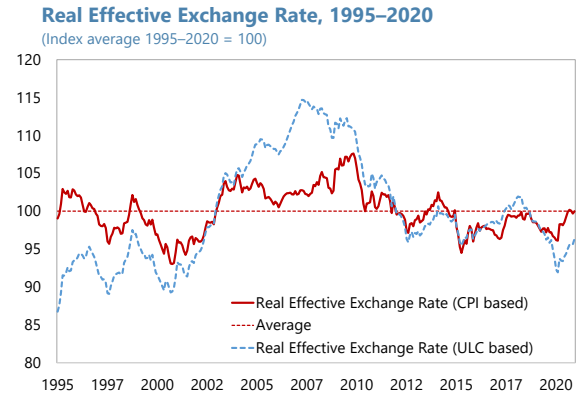
External Balance Assessment, 2020[1/]				
Methodology	EBA gap (percent of GDP)	COVID-19 Adj.	Staff Gap	REER gap (percent)
Current account analysis	3.3	0.3	3.6	-7.7
Index REER analysis	-			14.7
Level REER analysis	-			11.2
Sources: IMF External Sector Report; and Fund staff calculations.				
1/ Minus signs for the REER gaps indicate undervaluation.				

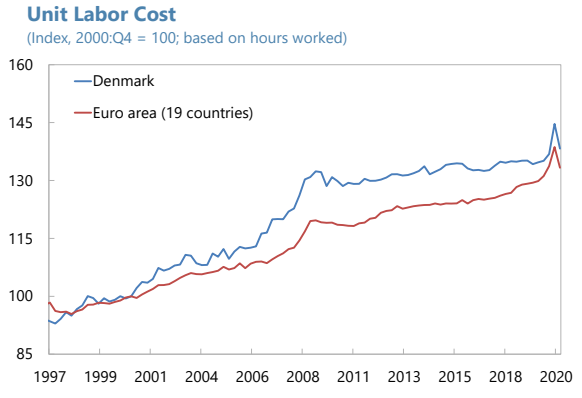
8. REER models and competitiveness indicators suggest different exchange rate assessments than the EBA gap, pointing to the difficulties associated to arriving at an overall external assessment.

- The staff CA gap implies a REER gap of -7.7 percent in 2020 (applying an estimated elasticity of 0.47), with a range between -5.5 to -9.8 percent.[7]

- The level real effective exchange rate (REER) model estimates that the krone is overvalued by about 11 percent. The index REER model estimates that the krone is overvalued by almost 15 percent. Meanwhile, the REER index based on inflation is at its 25-year average level (indicating no over- or undervaluation) whereas the ULC based REER suggests an undervaluation of about 5 percent.

- Competitiveness indicators do not suggest significant misalignment of the exchange rate. However, Denmark's unit labor cost has risen faster than in its major competitors—such as the euro area—for the past two decades making it less competitive. The has been counterbalanced by an increase in Denmark's terms of trade over the same period, reflecting the improvement of Danish export prices arising in high-value industries such as pharmaceuticals.





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

[7] The range of +/-1 percent of GDP is used to reflect uncertainty around the EBA estimated CA norm.

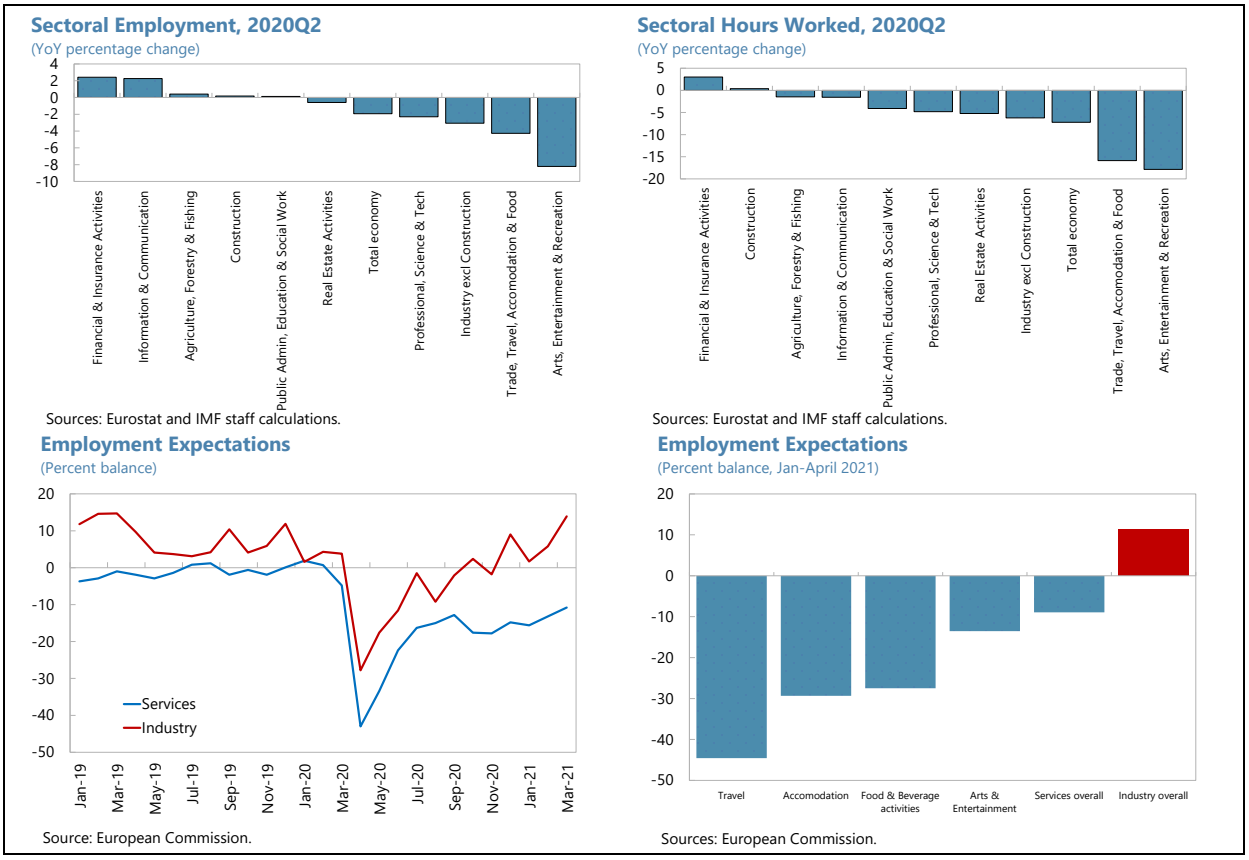
Annex VI. Authorities' Response to Past IMF Policy Recommendations

Past Policy Recommendations	Authorities' Actions
Fiscal Policy: In case of adverse shocks, Denmark's strong automatic stabilizers should operate fully; additional temporary loosening should be considered, while remaining anchored to the medium-term objective. Reduce high marginal and participation tax rates to promote labor supply. Increase reliance on in-work benefits and improve targeting to lower-income workers to alleviate inactivity traps and improve youth employment. Increase public investment to upgrade infrastructure.	Strong and swift fiscal support—including automatic stabilizers, discretionary support, and below-the-line measures—helped cushion the impact of the COVID crisis. While these resulted in an expected deterioration of public finances, authorities' fiscal plan, going forward, remains anchored to the medium-term objective. No progress on the high marginal and participation tax; in-work benefits and targeting to lower-income work. The fiscal plan includes raising public investment relative to the pre-COVID period.
Housing Market: Further tighten existing macroprudential measures to protect households form house price declines and higher interest rates, further reduce mortgage interest deductibility, lower rent controls, and relax zoning restrictions to increase supply.	Loan-to-value (LTV) limit remained at 95 percent. Some urban area zoning size restrictions have been relaxed.
Financial Sector: To improve the calibration of tools and support financial stability surveillance, staff recommended further refining frameworks to assess systemic risk. To strengthen AML/CFT supervision, it was advised to develop a comprehensive institutional risk assessment model; (ii) increase the depth of the DFSA's AML/CFT on-site inspections; (iii) further expand its sanctioning powers; and (iv) strengthen regional and international cooperation.	The DN used information from a newly implemented credit registry to improve calibration of their stress tests. The authorities' new institutional risk assessment model will become operational in June 2021. Number of DFSA's on-site inspections has been increased as well as its sanctioning powers. Authorities continue to strengthen cross-border cooperation via supervisory colleges.
Structural Reforms: Higher labor participation could be achieved by a comprehensive tax and benefit reform. Policies to improve employment in knowledge-intensive sectors including for the youth (VET), better integrate migrants (IGU), and reduce the gender gap by increasing flexibility in the provision of childcare services should be considered. Streamline the accreditation of foreign degrees to attract foreign qualified labor. To incentivize more investments, capital income tax reforms in the areas of dividend taxation, losses carried forward, R&D deductions, and business asset taxation should be considered. An ACE would reduce disincentives to invest. Improve institutional framework for competition and foster the business environment for high productive sectors (KIS).	In 2020 incentives to participate in VET have been increased to 110 percent of unemployment benefits. It was agreed to expand the IGU program end-2020 but female refugees have not been specifically targeted. A comprehensive tax and benefit reform was not considered and is currently not in the pipeline. The authorities raised R&D deductions earlier than planned to 130 percent in 2020. A digital partnership between the government and firms was established in 2021, it will provide recommendations on how companies can utilize digitalization. Other capital tax reforms including ACE have not been implemented. The European Competition Network directive (ECN+) has been implemented March 2021.

Annex VII. Labor Market Reallocation

As in many countries, in Denmark the impact of the pandemic diverged across sectors. Empirical analysis suggests that such an uneven sectoral impact—a reallocation shock—tends to weigh on the dynamics of unemployment, but active labor market policies (ALMP) can help mitigate that impact. As the Danish economy went into a lockdown, job retention schemes—built around the flexicurity model—helped cushion the impact of the pandemic. However, as the recovery gets traction, policies should shift from exceptional support to measures that include facilitating reallocation through ALMP.

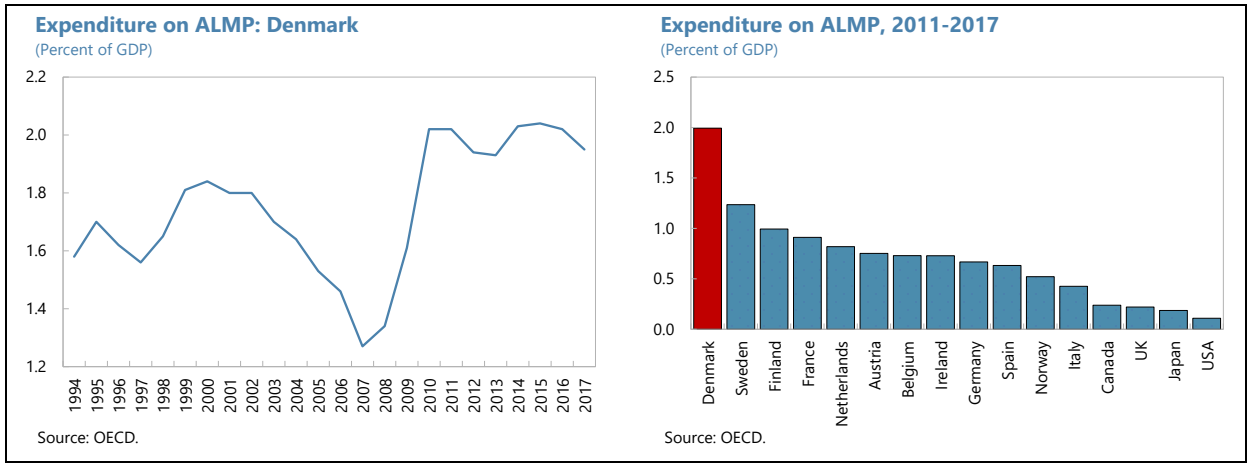
1. As in many countries, some sectors were hit disproportionally by the pandemic in Denmark. Sectors such as arts and entertainment, transportation, accommodation and food service, and wholesale and retail trade saw the sharpest drops in employment and hours worked during the initial peak of the pandemic. These sectors tend to be characterized by high contact intensity and tend to employ a larger share of specific cohorts such as the youth and the low-skilled (Basso et al. 2020). On the other hand, sectors such as finance and information and communication did relatively well.[1] Forward-looking indicators suggest that employment prospects across sectors will continue to be uneven in the near term. For instance, employment expectations in the services sector—especially travel, accommodation, and food—remain in the contractionary territory while the industry sector—on average—is expanding.



[1] Other countries also saw similar asymmetric sectoral impact during the pandemic (see IMF 2021).

2. Such an asymmetric sectoral impact—a reallocation shock—can weigh on the dynamics of unemployment. The channels include labor market search and matching frictions, time needed to plan new enterprises and business activities, and the fact that job creation tends to lag job destruction, especially in the near term (Barrero, Bloom, and Davis 2020). Several studies document that reallocation shocks can have an adverse impact on unemployment (e.g. Lougani, Rush, and Tave 1990; Chen et al. 2011; Vu and Wu 2020). Recent studies for the United States characterize the COVID crisis as a reallocation shock and highlight that it can weigh on unemployment (Barrero, Bloom, and Davis 2020; David 2020).

3. But active labor market policies (ALMP) can help mitigate the adverse impact. ALMP measures—such as hiring incentives, job search-and-matching assistance, upskilling, education, and retraining programs—can help displaced workers transition through periods of unemployment and facilitate reallocation. The Danish *flexicurity model* combines flexibility for businesses with security for its citizens through active labor market policies and a comprehensive income safety net; hence, it is well suited to facilitate labor market reallocation.[2] Denmark's spending on ALMP (as percent of GDP) has increased since the mid-1990s (though it dipped around the GFC), and remains one of the largest among OECD countries (Figure). Staff present an empirical assessment—i.e. a historical regularity—of the near-term impact of reallocation shocks on unemployment. The main contribution is to evaluate how ALMP matters for that impact which has not been explored in existing studies. The assessment deploys a panel estimation, but it draws inferences specific to Denmark based on its level of ALMP relative to other countries.



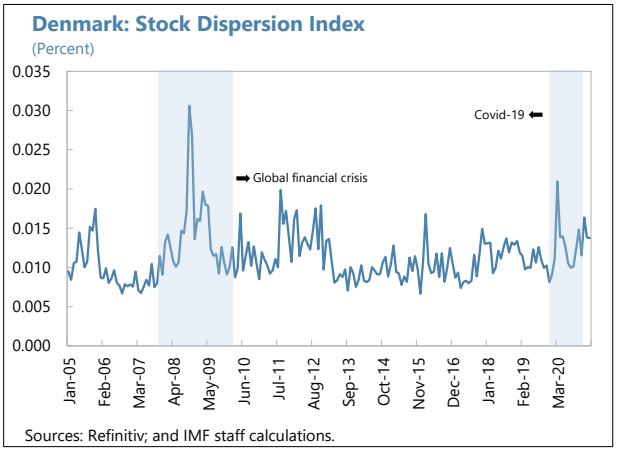
4. For an empirical assessment, reallocation shocks are first measured as the sectoral dispersion in stock returns. Following Vu and Wu (2020), the reallocation shock for a given economy at a given time is constructed as a dispersion index that captures the sectoral dispersion of

[2] Despite high union and collective bargaining coverage, Danish employers can hire and fire employees without large costs, so they can quickly adapt to changing market conditions. In return, laid-off workers are supported through an unemployment insurance fund with high replacement rates for low-income groups. In addition, they receive extensive job search services and educational training that is matched with current skill shortages, and employers that hire the unemployed or unskilled workers can receive subsidies.

stock returns for that economy during that time.[3] This yields a time series of an economy-wide reallocation shock which we then use to assess the impact on the economy-wide unemployment rate. The database is then compiled at the monthly frequency for a set of 15 economies during Jan 1995-Mar 2021.[4] The main advantage of using stock market data to measure reallocation shocks is that the information is forward-looking, timely, and that a long time series is available for estimation. A more direct measure such as expected level of employment across sectors/firms (as in Barrero, Bloom, and Davis 2020) is ideal, but such measures are not readily available for a wide set of countries and with sufficient time length. Using stock market data is also subject to the caveat of real-financial disconnect.

5. In a second step, unemployment rates are regressed on the estimated reallocation shocks deploying a local projections model (Jorda 2005)**.** The estimation deploys a panel framework at the monthly frequency and controls for lagged unemployment (for persistence), oil prices (proxy for common shocks), VIX (as measure of uncertainty), as well as country fixed effects. The estimated model is used to trace the unconditional response of unemployment rate to a reallocation shock. To assess the role of ALMP, we then include interaction terms in the model, interacting the reallocation shock with the level of ALMP expenditure.[5] This yields a framework where the response of unemployment rate due to a reallocation shock is conditional on the level of ALMP—this is the key novelty that allows us to evaluate the role of ALMP.

6. Estimated reallocation shocks tend to spike during periods of economic slowdown. The stock dispersion index in Denmark increased during the global financial crisis and during the pandemic. Other countries in the sample also exhibit a similar profile. These are consistent with the notion that periods of large dispersion in sectoral stock returns coincide with periods of weak economic performance (Vu and Wu 2020).[6]



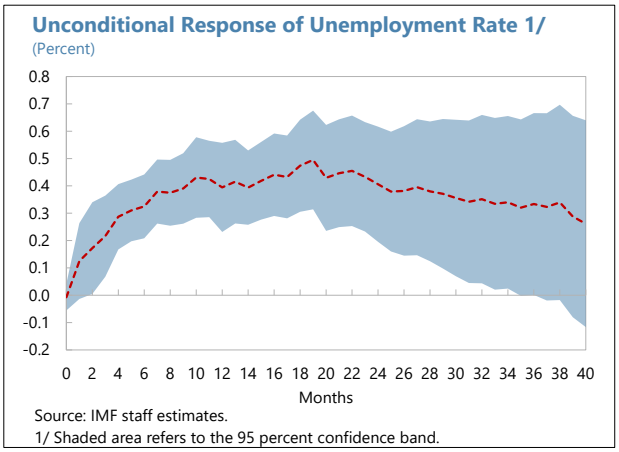
[3] A reallocation shock differs from a standard uncertainty shock in that the former captures sectoral dispersion in stock returns at a given point in time, while uncertainty typically refers to temporal dispersion in (aggregate) stock returns.

[4] We use Financial Times Stock Exchange (FTSE) stock indices at the industry level following *Industry Classification Benchmark* (ICB) structure. The set of 15 countries includes: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, the United Kingdom, and the United States. The stock dispersion index is calculated at the daily frequency which is then averaged to derive a monthly index for the econometric analysis. For robustness, we also looked at a more disaggregated industry classification based on data from Bloomberg.

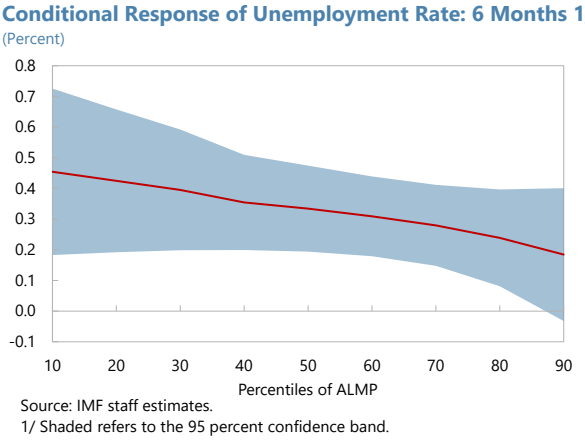
[5] The local projections model provides a flexible framework since it does not impose dynamic restrictions implicitly embedded in multivariate systems like VARs and can conveniently accommodate state-dependencies in the response functions.

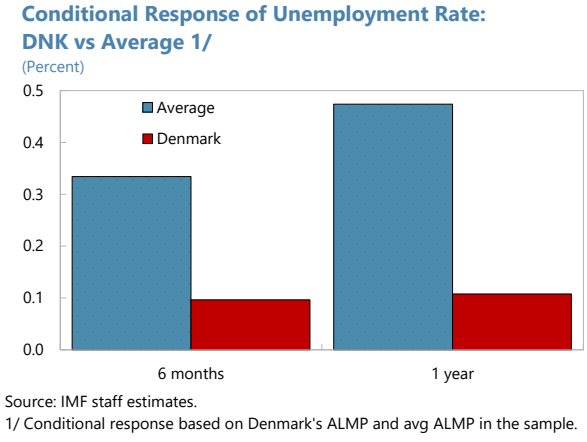
[6] This, however, does not necessarily imply that it is the same set of sectors that is hit worse across different episodes of economic slowdown.

7. The regression results suggest that reallocation shocks tend to adversely affect unemployment in the near term. In response to an adverse reallocation shock, the unconditional response of unemployment rate gradually increases, peaking at around 2 years. The impact is both statistically and economically significant: a reallocation shock calibrated to a size around the global financial crisis and the pandemic would result in unemployment rate increasing, on average, by about ½ percentage point in the near term.[7] While the impact is persistent, it dissipates after around 2 years and the results are also no longer statistically significant thereafter.[8]



8. Importantly, the conditional responses suggest that ALMP can mitigate the adverse impact of reallocation shock on unemployment. For instance, the conditional response of unemployment at the end of 6 months is smaller when ALMP is higher.[9] Given that Denmark has one of the highest ALMP among the OECD countries, these results suggest that reallocation shocks would have a much milder impact on Danish unemployment relative to other countries. For instance, the impact on unemployment rate, given Denmark's level of ALMP, would be only about one-third to one-fifth of that of an economy with the average level of ALMP in our sample.



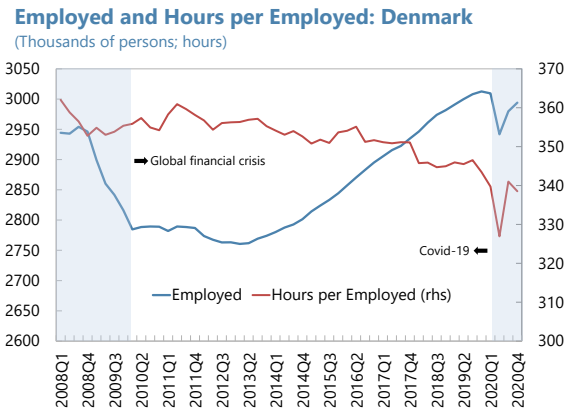


[7] The unconditional impulse response shows the average impact—across countries and time—of unemployment rate due to a reallocation shock in isolation. In addition to reallocation shocks, economic slowdowns (including the COVID crisis) are often buffeted with multiple shocks—encompassing both supply and demand—all of which would weigh on unemployment. Using a similar framework, Davis (2020) reports larger impact on US unemployment rate. Our sample, however, includes many European countries where the volatility of unemployment rate is much smaller relative to the United States. More broadly, to the extent that the pandemic shock possesses features not seen in recent history, some caution is warranted in relating the historical estimates from our exercise to the COVID episode.

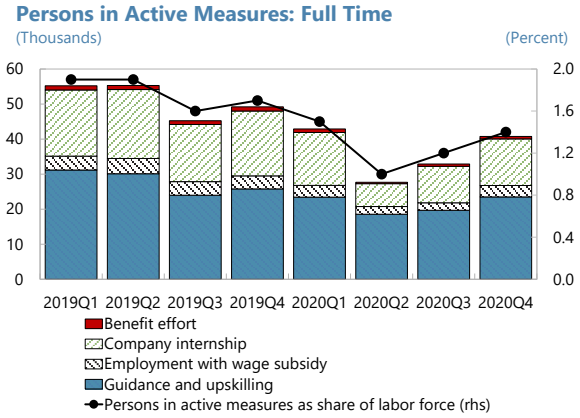
[8] Whether or not reallocation shocks have a permanent impact on unemployment is an important question. That said, the local projections framework—which tends to be more accurate for near-term projections—is not suitable to address this question.

[9] A similar result holds at the end of 1 year.

9. During the pandemic, job retention schemes—wage compensation and workshare arrangements—helped cushion the impact on the Danish labor market. The *flexicurity model* is typically characterized by labor market adjustment along the extensive margin (i.e. number of workers) as firing and hiring is relatively easy and costless. This was illustrated during the global financial crisis when unemployment rates increased sharply (Anderson 2012). However, during the pandemic, Denmark saw adjustment along the intensive margin (i.e. in terms of hours worked), as unemployment remained fairly stable while hours worked decreased. This was mainly due to newly introduced job retention schemes that aimed to enhance and complement the *flexicurity model* and shield labor markets against the pandemic shock. In addition to protecting incomes, these measures helped reduce job separations, loss of skills and human capital—which would allow employers to hire back more easily in the recovery phase, facilitating reallocation.[10] During 2020H1, amid the lockdown, activation declined as reflected by the lower number of persons in activation measures relative to pre-COVID. But as restrictions were eased subsequently, activation picked up with a focus on guidance and upskilling, and, to a lesser extent, company internship.



Sources: Haver Analytics; and IMF staff calculations.



Source: jobindsats.dk.

10. As the recovery gains traction, policies should shift from exceptional support to measures that include facilitating reallocation. More focus should be given to facilitate matching and the reallocation of labor from contracting to expanding sectors through upskilling and education. Specifically, policies could be designed to target the most-affected cohorts. For instance, activation measures that focus on training can be particularly relevant for the youth (IMF 2021). Beyond ALMP, complementary policies remain important for reallocation. The pandemic provides an opportunity to structurally improve the economy's resilience and growth prospects. For instance, reallocation towards greener jobs would support Denmark's climate goals. A high level of job creation—in addition to an effective activation policy—is essential for the financial viability of the Danish system (Anderson 2012). Hence, sound macroeconomic policies that support job creation (e.g. the pension reform that links retirement-age to life-expectancy) should endure. Such policies that boost labor supply—along with those that raise investment—would also help bolster potential growth, limiting the pandemic-induced scarring (Annex Box VII.1).

[10] Auray and Eyquem (2020) show, using a model-based analysis, that intensive margin adjustment during the pandemic would imply smaller and short-lived macroeconomic effects relative to extensive margin adjustment.

Annex Box VII.1 Potential Growth and Scarring: The Role of Policies

Recessions tend to result in permanent output losses—referred to as scarring—but policies can help limit those losses. The traditional view in business cycle studies is that that output returns to its pre-recession trend after a crisis. However, Cerra and Saxena (2008, 2017), show, using cross-country analyses, that *all* crises have permanent long-run costs in terms of output forgone. Therefore, crisis avoidance policies and building up buffers are even more important. Once the recession is underway, accommodative policies—including fiscal and monetary—can speed up the recovery (Cerra, Panizza, and Saxena 2013). In addition, output losses in the medium term also depend on the path of potential growth. Thus, policies to boost potential growth can help minimize scarring.

Staff present several scenarios to highlight the medium-term impact of these policies on potential growth. Potential growth is decomposed into labor and labor productivity. In the baseline, employment is assumed to increase by about 70k over 6 years, consistent with the assumed path of labor force and unemployment rate. Labor productivity—which reflects the sum of capital intensity and multi-factor productivity—is assumed to grow at about 1.2 percent in the medium term, up from about 0.8 percent pre-COVID.[1] These assumptions reflect the impact of the announced policy initiatives and institutional features in Denmark. In an adverse scenario, employment level is assumed to be some 25k smaller relative to the baseline—reflecting labor supply faltering due to reallocation bottlenecks and a reversal of the pension reform.[2] In a favorable scenario, labor productivity growth is assumed to increase by an additional 0.2 percentage point—roughly one-half standard deviation based on Denmark's historical data—reflecting an increase in capital intensity due to higher investment.

Staff analysis shows that these policies are key to raise potential growth and limit scarring. In the baseline, potential growth is projected to grow at about 1.8 percent in the medium term, implying an estimated medium-term output loss of about 1.1 percent relative to pre-COVID projections. The output loss in the adverse scenario is estimated to be higher at about 1.6 percent. The favorable scenario implies a smaller output loss at about 0.3. These scenarios underscore the importance of keeping up with labor supply—including though effective reallocation and the continuation of the pension reform—and efforts to increase investment, all of which would further limit scarring and support Denmark's transition to the economy of the future.[3]

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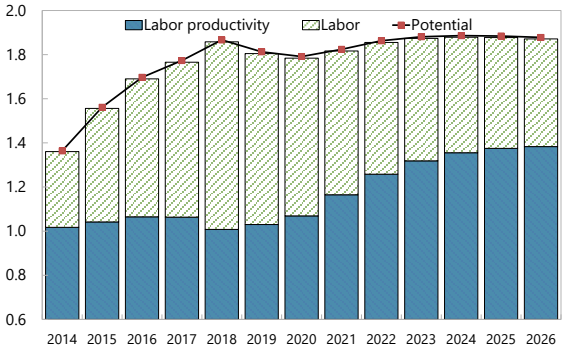
[1] Using a standard production function, labor productivity can be decomposed into capital intensity (capital-labor ratio) and multi-factor productivity, where the latter is derived as a residual after accounting for labor and capital stock. The assumed path of capital stock in the baseline is consistent with investment-output ratio increasing by about 1 percentage point over 6 years.

[2] For the purpose of illustration, the adverse and favorable scenarios assume similar near-term rebound as in the baseline. The scenarios mainly reflect alternative course of potential growth in the medium term, which is where actual output is assumed to converge.

[3] Keeping up with labor supply is also key for fiscal sustainability.

Potential growth is expected to recover and increase in the medium term, thanks to various policies…

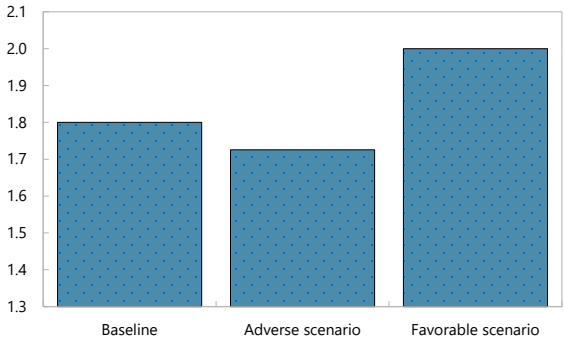
Potential Real GDP Growth and Contribution
(Percent, percentage point)



Sources: IMF World Economic Outlook; IMF staff calculations.

….policies to keep up with labor supply and boost productivity are key for potential growth…

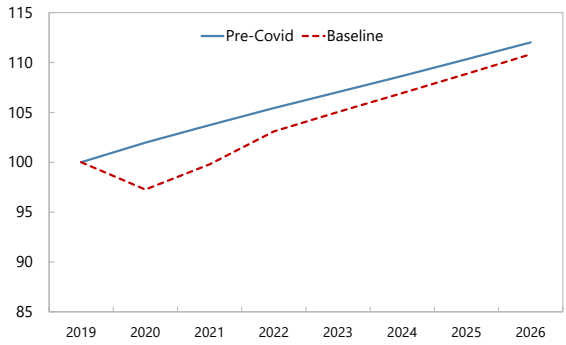
Potential Real GDP Growth in the Medium Term
(Percent)



Sources: IMF World Economic Outlook; IMF staff calculations.

…and while the pandemic would result in some expected scarring…

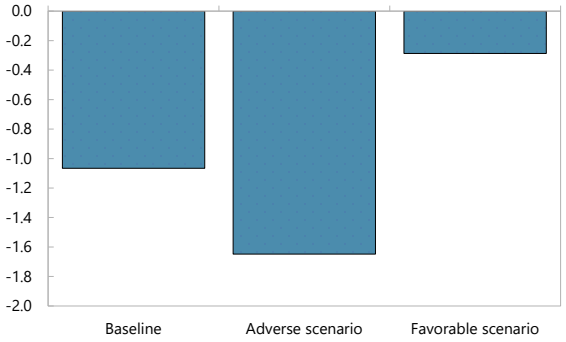
Real GDP Level
(Index; 2019 = 100)



Sources: IMF World Economic Outlook; IMF staff calculations.

…and can help further limit scarring.

Output Loss in the Medium Term
(Percent, relative to pre-COVID)



Sources: IMF World Economic Outlook; IMF staff calculations.

Annex VIII. Authorities' Response to Past FSAP Recommendations

Denmark: Key FSAP Short-Term Recommendations [1/]	
Recommendations and Authority Responsible for Implementation	**Status**
Banking and Insurance Supervision	
Expand budget envelop for DFSA to recruit and retain quality staff across full range of skills and experience and with a focus on non-financial risks (MIBFA).	Partially Implemented
Develop more detailed guidance on risk assessments to support supervisory judgement and ensure consistent outcomes (DFSA).	Implemented
Increase the number of insurance on-site inspections guided by a finalized risk assessment framework and strengthen the supervision of cross-border business (DFSA).	Partially Implemented
Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT)	
Test, finalize, and implement the DFSA's new institutional risk assessment model (DFSA).	Partially Implemented
Intensify AML/CFT on-site inspections of higher-risk financial institutions (DFSA).	Implemented
Systemic Liquidity	
Complete the framework for accepting credit claims as non-standard collateral (DN).	Partially Implemented
Seek greater domestic interagency information sharing and collaboration to enhance the operational preparedness for non-standard liquidity support (DN, DFSA).	Partially Implemented
Financial Crisis Management and Safety Nets	
Strengthen the autonomy of FSC, including by limiting the decision power of the MIBFA in resolution to situations when fiscal support is needed (MIBFA)	Not Implemented
Expedite the resolvability of SIFIs, particularly by finalizing the priority areas for resolution planning (FSC, DFSA)	Partially Implemented
Define strategies for liquidity assistance to institutions in resolution (FSC, DFSA, DN, MIBFA, MoF)	Partially Implemented
Develop and test a system-wide contingency and crisis communication plan (FSC, DFSA, DN, MIBFA, MoF)	Partially Implemented
[1/] ST: Short term (1-3 years).	

PRESS RELEASE

PR[21/XX]

Appendix I. Draft Press Release

IMF Executive Board Concludes 2021 Article IV Consultation with Denmark

FOR IMMEDIATE RELEASE

Washington, DC – [June 14, 2021]: The Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Denmark and endorsed the staff appraisal without a meeting.

Denmark entered the pandemic on a strong economic footing. The authorities decisively utilized Denmark's large policy space built over time to successfully navigate the crisis and lay the ground for a strong recovery. With one of the smallest contractions in Europe, the decline in real GDP in 2020 was mainly driven by weak private consumption and net exports. The swift and sizable fiscal response cushioned the impact on activity. Fiscal policy continues to support the recovery and public debt is sustainable. Unprecedented policy measures supported the labor market; thus, unemployment increased only slightly. The current account surplus declined mainly due to lower services' exports, but it remains high. A comprehensive financial policy package—together with measures to support households and corporates—helped mitigate financial stability risks. Macrofinancial vulnerabilities stem largely from accelerating housing price growth amid high and increasing household leverage.

The near-term outlook is for a rebound in activity. This is predicated on the continued rollout and increased availability of the vaccine by the second half of the year. With the expected lifting of restrictions, output growth is projected to rebound to 2.6 and 3.3 percent in 2021 and 2022 respectively. Activity will be supported by a recovery of private consumption and net exports. The momentum in investment should strengthen in 2022 on the back of various initiatives that incentivize green investment and digitalization. The labor market will continue to improve, supporting wages. With the projected recovery, the negative output gap is estimated to close by 2022. Thanks to various initiatives to raise investment and labor supply, potential growth will pick up in the medium term, thus helping to limit scarring from the pandemic.

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

Executive Board Assessment[2]

In concluding the Article IV consultation with Denmark, Executive Directors endorsed the staff's appraisal as follows:

Activity declined in 2020 driven by weak private consumption and net exports. But the contraction was milder than in peer countries, in part, thanks to unprecedented policy support that has cushioned the impact of the pandemic. The external position was stronger than the level consistent with medium-term fundamentals and desirable policies. The near-term outlook is for a rebound in activity, but risks remain high and dominated by pandemic developments. High and increasing household debt amid accelerating housing valuations remains a key vulnerability. Policies should support the recovery, safeguard the most vulnerable groups, enhance macrofinancial resilience, and facilitate green and digital transitions.

Denmark's public finances are sound with substantial fiscal space to support the recovery and facilitate the economy's green and digital transformations. Fiscal policy should prioritize COVID crisis support, facilitate reallocation, and support reforms for the economic transformation. If the recovery falters, Denmark should deploy its substantial fiscal space as needed. Once the recovery is fully entrenched, a plan to return to the medium-term objective of neutral stance remains appropriate.

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

The banking system is profitable, liquid, and highly capitalized, though in a challenging environment. Measures to support households and corporates mitigated liquidity and credit risks but impairments are likely to increase further once policy support is unwound. As the recovery solidifies, targeted prudential tools should be deployed to maintain financial stability. Staff welcome improvements to the AML/CFT framework which led to a third consecutive FATF upgrade. The robust implementation of reforms should continue.

High and increasing household leverage amid accelerating housing valuations warrant tightening prudential tools and deploying coordinated tax and housing supply policies. The authorities should shift focus toward income-based measures, as LTV caps are less binding in the current environment with high house price growth. The authorities should tighten DTI restrictions for all loans irrespective of LTV ratios. DTI caps could be differentiated based on borrowers' riskiness. Tighter limits on income-based measures for interest-only and floating-rate mortgages should also be considered. Mortgage interest deductibility should be reduced in a manner consistent with the overall tax framework. Policies to promote housing supply should be considered.

As the recovery gains traction, labor market policies should be fine-tuned, shifting emphasis from exceptional support to other measures embedded in flexicurity. Enhancements to the flexicurity model along with complementary policies helped cushion the impact of the pandemic on the labor market. Once the recovery is entrenched, exceptional support should sunset. More focus should be

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

given to measures in flexicurity that facilitate matching and the reallocation of labor from contracting to expanding sectors through upskilling and education especially for the young, unskilled and foreign-born. To support labor supply over the long-term, it is critical to continue with the implementation of the pension reform that links retirement age to life-expectancy. Other measures, that would increase labor supply and alleviate inactivity traps should be considered, including a comprehensive tax reform that uses targeted in-work benefits. Improvements to the provision of after-hours public childcare should be pursued. Simplifying the certification of foreign degrees would help attract skilled foreign labor.

The recovery offers a unique opportunity to address pre-pandemic legacies and build forward better by boosting productivity growth and investments. More is needed to achieve Denmark's highly ambitious climate goals. Hence, public investment should be raised as much as efficiently possible, while being compliant with the Budget Law and the medium-term objective. A prompt definition of the tax framework for green investment, including the level and base of carbon taxation would reduce uncertainty and provide further incentives for private investments. To further boost productivity growth, the authorities should continue to foster the environment for high productivity sectors to expand, encourage broad-based innovation, and improve access to equity finance. By reducing the cap on the use of carry-forward losses more start-up and high technology firms could be fostered. Consideration should be given on how to implement an ACE, as it would reduce the debt bias and the cost of capital.

Denmark: Selected Economic Indicators, 2018–26									
	2018	2019	2020	2021	2022	2023	2024	2025	2026
			est.			proj.			
Supply and Demand (change in percent)									
Real GDP	2.2	2.9	-2.7	2.6	3.3	1.9	1.8	1.8	1.8
Final domestic demand	2.5	1.7	-0.5	2.7	2.6	2.3	2.1	2.1	2.1
Private consumption	2.7	1.4	-1.9	2.8	3.6	2.3	2.2	2.2	2.2
Public consumption	0.3	1.2	-0.1	3.2	0.1	0.9	0.9	0.9	0.9
Gross fixed investment	4.8	2.8	2.1	2.1	3.5	3.7	3.0	3.0	3.0
Net exports 1/	-0.5	1.7	-2.1	0.1	0.2	0.1	0.1	0.1	0.1
Gross national saving (percent of GDP)	30.2	31.6	31.0	30.8	31.0	31.0	31.0	31.0	31.0
Gross domestic investment (percent of GDP)	23.1	22.7	23.2	23.0	23.6	23.6	23.7	23.8	23.9
Potential output	1.8	1.8	1.7	1.8	2.2	1.9	1.8	1.8	1.8
Output gap (percent of potential output)	1.7	2.8	-1.7	-1.0	0.0	0.0	0.0	0.0	0.0
Labor Market (change in percent) 2/									
Labor force	0.9	1.5	-0.2	0.2	0.4	0.4	0.4	0.4	0.4
Employment	1.7	1.6	-0.8	0.3	0.6	0.6	0.6	0.4	0.4
Harmonized unemployment rate (percent)	5.1	5.0	5.6	5.6	5.4	5.2	5.0	5.0	5.0
Prices and Costs (change in percent)									
GDP deflator	0.6	0.7	2.3	1.9	1.4	2.1	2.2	2.2	2.2
CPI (year average)	0.7	0.7	0.3	1.1	1.5	1.8	2.0	2.0	2.0
Public Finance (percent of GDP) 3/									
Total revenues	51.2	53.0	52.8	50.9	50.2	50.1	49.7	50.1	50.1
Total expenditures	50.5	49.2	54.0	54.3	51.1	50.7	50.3	50.1	50.1
Overall balance	0.7	3.8	-1.1	-3.3	-0.9	-0.7	-0.6	0.0	0.0
Primary balance 4/	0.3	3.5	-1.5	-3.6	-1.3	-1.0	-0.9	-0.2	-0.2
Cyclically-adjusted balance (percent of potential	-0.6	1.7	0.1	-2.6	-1.0	-0.7	-0.6	0.0	0.0
Structural balance (percent of potential GDP) 5/	-0.3	0.5	0.3	-0.5	-0.3	-0.1	-0.1	0.0	0.0
Gross debt	33.8	33.0	42.2	40.7	41.2	41.6	41.8	41.9	41.9
Money and Interest Rates (percent)									
Domestic credit growth (end of year)	3.5	4.3	...	...	...	...	...	...	...
M3 growth (end of year)	-2.9	2.6	...	...	...	...	...	...	...
Short-term interbank interest rate (3 month)	-0.3	-0.4	...	...	...	...	...	...	...
Government bond yield (10 year)	0.4	-0.2	...	...	...	...	...	...	...
Balance of Payments (percent of GDP)									
Exports of goods & services	56.3	58.3	54.3	55.7	56.4	56.5	56.6	56.6	56.6
Imports of goods & services	50.4	51.0	47.9	49.1	50.0	50.1	50.3	50.4	50.4
Trade balance, goods and services	5.9	7.4	6.5	6.7	6.4	6.4	6.3	6.3	6.1
Oil trade balance	-0.4	-0.5	-0.4	-0.7	-0.8	-0.8	-0.9	-1.0	-1.1
Current account	7.0	8.9	7.8	7.7	7.3	7.3	7.2	7.2	7.0
International reserves, changes	-0.3	-0.9	-0.1	...	...	...	...	...	...
Exchange Rate									
Average DKK per US$ rate	6.3	6.7	...	...	...	...	...	...	...
Nominal effective rate (2010=100, ULC based)	100.1	99.4	...	...	...	...	...	...	...
Real effective rate (2010=100, ULC based)	95.5	91.8	...	...	...	...	...	...	...
Memorandum Items									
Nominal GDP (Bln DKK)	2254	2335	2324	2431	2546	2647	2755	2867	2983
GDP (Bln USD)	357	350	...	...	...	...	...	...	...
GDP per capita (USD)	61731	6030	...	...	...	...	...	...	...

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.