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Addressing labour and skills  
shortages in a fast-changing  
economy

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OECD Economics Department Working Papers

# **Addressing labour and skills shortages in a fast-changing economy**

No. 1811



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## ABSTRACT/RÉSUMÉ

### Addressing labour and skills shortages in a fast-changing economy

The Danish labour market is strong, but tensions have increased since the pandemic. The post-pandemic recovery boosted labour demand, but structural factors, such as late labour market entry by the young, changing skills requirements and obstacles to the recruitment of migrants, contribute to persistent shortages and impact the wider economy. Lowering the effective tax rate on labour income could reduce disincentives to higher working hours and to moving from part-time to full-time employment. Adapting the workplace to an ageing population and adjusting early retirement schemes could help to extend working lives. Targeting the tenth grade to students with greater learning needs, reducing student allowances and introducing an income-contingent loan system for master's students could also encourage faster entry into the labour market. There is room to increase the recruitment of foreign-born workers, as well as improving their integration. The demographic, digital and green transitions will transform jobs and skills requirements, demanding an agile education and training system throughout the working life. Encouraging vocational education and training, notably by facilitating mobility between vocational and academic tracks, would ensure strong skills in areas where workers are lacking.

This Working Paper relates to the 2024 Economic Survey of Denmark

<https://www.oecd.org/economy/denmark-economic-snapshot/>

Keywords: Denmark, labour market, taxation, skills, education, gender, migration, pension

JEL: I28, J16, J20, J24, J26, J60, M53.

\* \*\* \* \*\* \* \*\* \* \*\* \*

### Faire face aux pénuries de main-d'œuvre et de compétences dans une économie en mutation rapide

Le marché du travail danois est solide, mais les tensions se sont accrues depuis la pandémie. La reprise qui a suivi la pandémie a stimulé la demande de main-d'œuvre, mais des facteurs structurels, tels que l'entrée tardive des jeunes sur le marché du travail, l'évolution des compétences requises et les obstacles au recrutement des migrants, contribuent à la persistance des pénuries et ont un impact sur l'ensemble de l'économie. L'abaissement du taux d'imposition effectif sur les revenus du travail pourrait réduire les freins à l'augmentation du temps de travail et au passage d'un emploi à temps partiel à un emploi à temps plein. L'adaptation du lieu de travail à une population vieillissante et l'ajustement des régimes de retraite anticipée pourraient contribuer à prolonger la durée de la vie professionnelle. Le fait de cibler la dixième année scolaire sur les étudiants ayant des besoins d'apprentissage plus importants, de réduire les allocations d'études et d'introduire un système de prêts conditionnés par le revenu pour les étudiants en master pourrait également favoriser une entrée plus rapide sur le marché du travail. Il est possible d'accroître le recrutement de travailleurs nés à l'étranger et d'améliorer leur intégration. Les transitions démographique, numérique et verte transformeront les emplois et les compétences requises, ce qui nécessitera un système d'éducation et de formation souple tout au long de la vie professionnelle. Encourager l'enseignement et la formation professionnels, notamment en facilitant la mobilité entre les filières professionnelles et universitaires, permettrait de garantir de solides compétences dans les domaines où les travailleurs font défaut.

Ce document de travail concerne l'Étude économique du Danemark de 2024

<https://www.oecd.org/economy/denmark-economic-snapshot/>

Mots clés : Danemark, marché du travail, fiscalité, compétences, éducation, genre, migration, retraite

JEL: I28, J16, J20, J24, J26, J60, M53.

# Table of contents

Addressing labour and skills shortages in a fast-changing economy	6
Introduction	6
A persistently tight labour market is undergoing major transitions	7
Attracting more qualified migrants could help address labour shortages	17
Strengthening the policy framework to remove work disincentives	20
Improving skills to thrive in the demographic, digital and green transitions	37
References	53

## FIGURES

Figure 1. Labour market performance has been strong	7
Figure 2. Tensions in the labour market persist despite the economic slowdown	8
Figure 3. Tensions in the labour market have been widespread	9
Figure 4. Public employment has increased, especially in the central administration	10
Figure 5. Labour shortages reflect an imbalance between labour demand and supply	11
Figure 6. Foreign-born workers have significantly contributed to employment growth	12
Figure 7. Unit labour costs have increased moderately	12
Figure 8. There is room to increase employment rates further	14
Figure 9. Working hours are low compared to other OECD countries	15
Figure 10. Population ageing will weigh on labour supply	16
Figure 11. The foreign-born population is lower than in many OECD countries	18
Figure 12. There is room to improve policies to attract migrants	20
Figure 13. Financial disincentives to work remain high for middle earners	22
Figure 14. Estimated impact of the 2023 reform of personal income taxation	23
Figure 15. Financial incentives to increase working hours are relatively low	25
Figure 16. Early retirement schemes reduce gaps across groups in life expectancy after retirement	27
Figure 17. Projected change in early retirement	28
Figure 18. Job mobility declines with age but hiring rates of older workers can improve	29
Figure 19. Working conditions could be improved	30
Figure 20. Labour market entry could be faster	31
Figure 21. There is room to improve policies to integrate migrants	33
Figure 22. Second-generation migrants are more likely to leave school early	35
Figure 23. Unmet mental healthcare needs have a significant cost	36
Figure 24. Despite strong digital skills, shortages in ICT skills have remained high	38
Figure 25. Despite high demand in the labour market, too few graduates opt for STEM studies	41
Figure 26. Occupational gender segregation in Denmark	43
Figure 27. There is a relatively high proportion of young adults with low educational attainment	46
Figure 28. Reported shortages of VET teachers are high and likely to persist	47
Figure 29. Participation in adult education is high, but could improve for low skilled workers	48
Figure 30. More LTC workers are needed to keep the ratio of caregivers to the elderly population constant, but tenure in the sector is low	50
Figure 31. The care sector often uses non-standard employment	51
Figure 32. Denmark could recruit more foreign-born care workers	51

## BOXES

Box 1. The ageing of the Danish labour force	16
Box 2. German migration policies to tackle labour shortages in medium-skill occupations	19
Box 3. Delivering modern employment services	21
Box 4. Labour income taxation in Denmark	23
Box 5. The prospects for rising voluntary early retirement among prosperous older workers	26
Box 6. The Danish early retirement schemes	28
Box 7. Promoting healthier and longer working lives at work	30
Box 8. Occupational gender segregation	42

# Addressing labour and skills shortages in a fast-changing economy

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## Introduction

Tensions in the Danish labour market increased dramatically after the pandemic. Employment has reached record high levels and recruitment difficulties worsened, especially in some sectors, such as construction, information and communications (ICT), and healthcare, where shortages have been persistent. While cyclical factors such as the fast post-pandemic recovery played an important role and similar trends can be seen in other countries, structural factors hold back the availability of labour, as reflected in low hours worked and late labour market entry by the young. Structural megatrends in terms of population ageing, the green transition, and digitalisation will transform labour demands and skills needs.

Against this background and while increasing the labour force is not an objective in itself, tackling and managing labour shortages is key. Shortages risk adding to supply-driven inflation pressures in the current environment and could trigger unwelcome competitiveness losses via increases in wages. Labour shortages are a barrier to investment and business dynamism, which can negatively affect economic growth. Shortages of labour in key sectors, such as long-term care and the public sector, could make it difficult to maintain living standards.

This working paper identifies where labour market tensions are likely to persist and intensify, the underlying causes, and proposes avenues to increase labour supply and address shortages. It presents policies to sustain labour force participation and to develop and better use the competences of the Danish workforce in the context of demographic changes, and the digital and green transitions. These include reducing the disincentives to work and retire later; better attracting and integrating migrants; encouraging the young to start work earlier; and providing the relevant skills to thrive in this changing environment, including policies to adapt the education system to future labour market needs.

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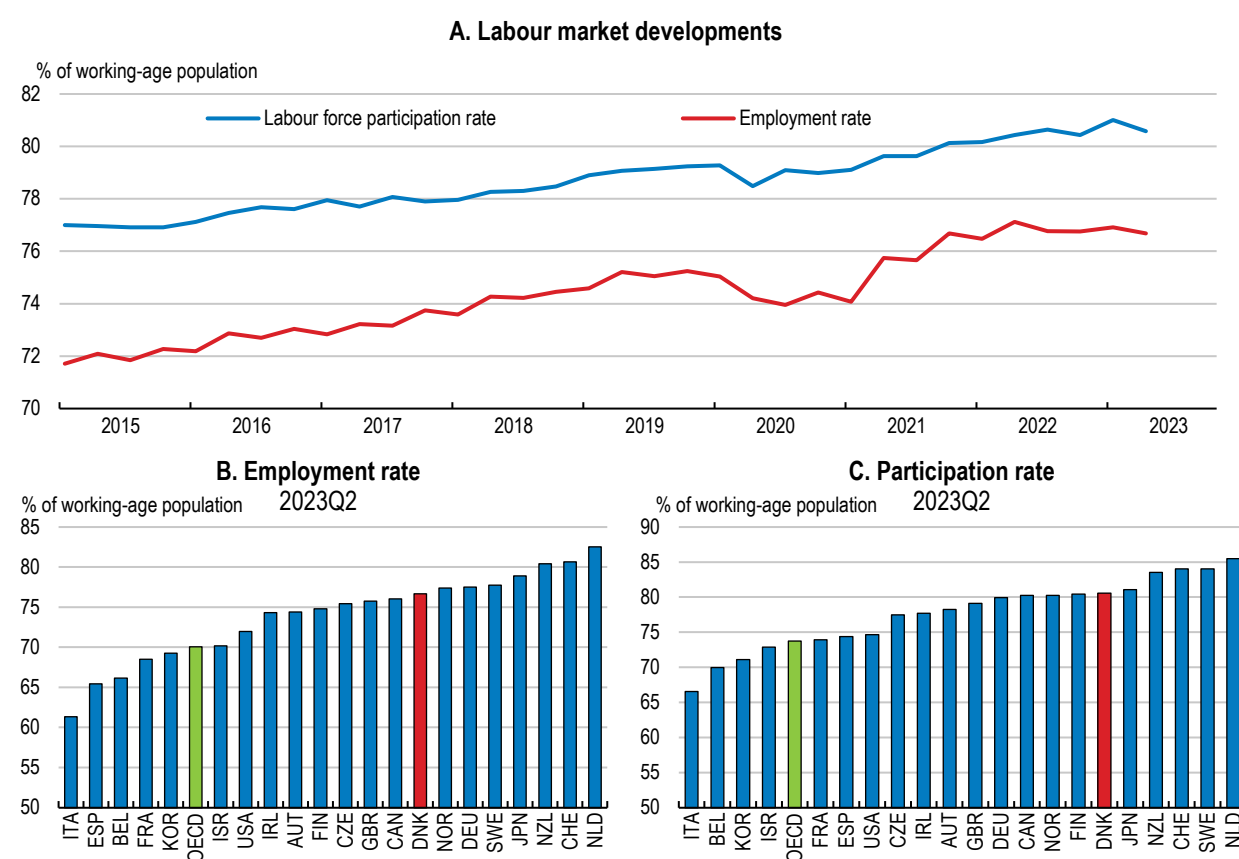
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## A persistently tight labour market is undergoing major transitions

### Despite the economic slowdown, structural factors are keeping the labour market tight

Denmark's labour market generally works well. The employment rate – the share of the working-age population in employment – has increased fast over the past decade and is relatively high compared to many other OECD countries (Figure 1). Rising labour market participation, including of groups with historically lower attachment to the labour market, notably older and foreign-born workers, and a falling number of unemployed have contributed to this performance. This reflects good economic conditions, a well-developed labour market institutional set-up, and policy measures that strengthened work incentives and integration programmes. Working conditions in Denmark are good by international standards, with low job strain (from high work demands and insufficient resources) and flexible working arrangements (OECD, 2018; European Working conditions Survey, 2021). Overall, gender gaps are low by OECD standards, with women's wages, participation, and employment rates close to those of men.

Figure 1. Labour market performance has been strong



Note: Panels A and B refer to the share of the population aged 15-64.

Source: OECD Short term labour market statistics.

The labour market has been resilient to economic shocks over the past few years and is very tight. During the COVID-19 crisis, the unemployment rate increased by around 1 percentage point, less than in most EU countries, and quickly returned to its pre-crisis level (Figure 2, Panel A). A temporary job retention scheme largely avoided substantial job losses, while allowing people to return to their jobs once the economy improved (OECD, 2021a). After the strong recovery in 2021 and despite some growth slowdown since 2022, employment has continued to grow until early 2023, reaching record high levels (Figure 2,

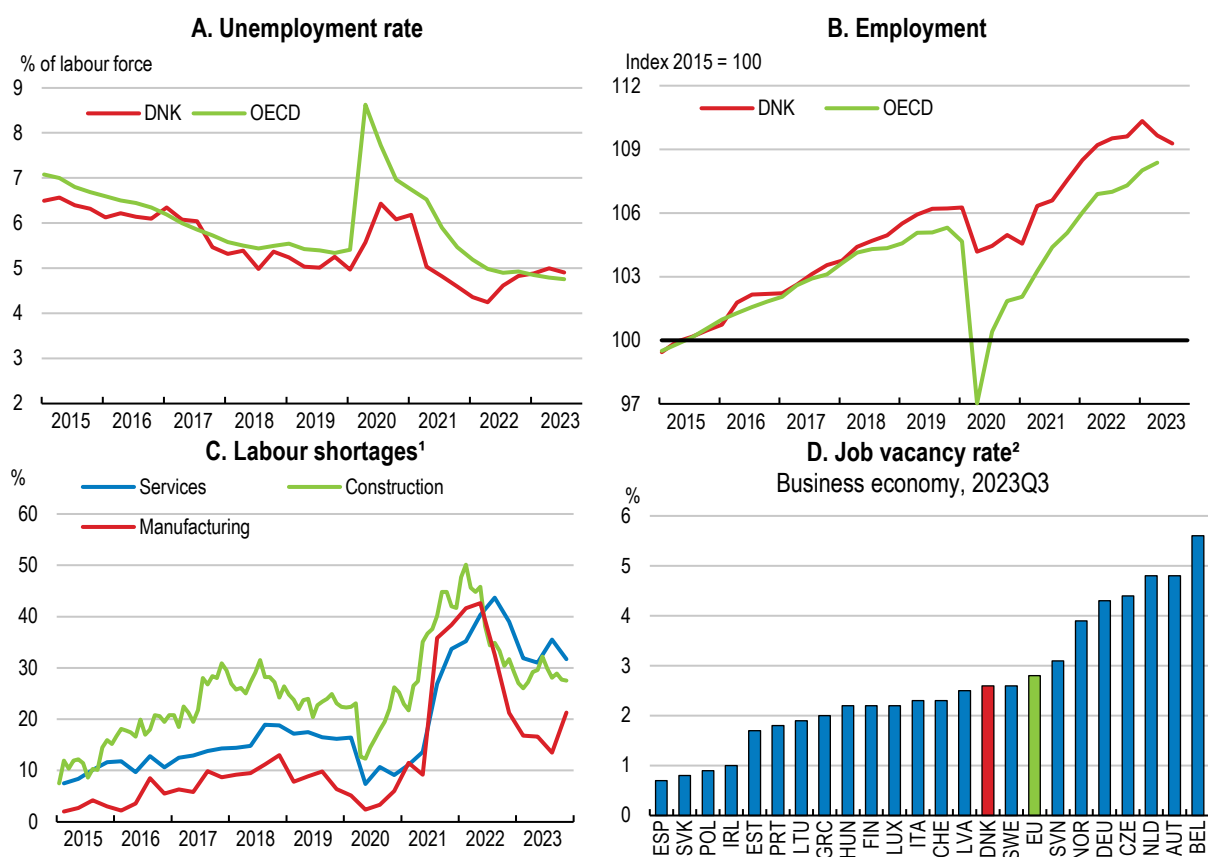


Panel B). The number of people not in employment (either unemployed or inactive) has declined steadily in recent years with an increasingly small fraction of this group available for work.

Strong labour demand combined with fewer available workers has led to an increasing number of firms reporting labour shortages. Labour shortages reported by firms peaked after the economy re-opened and still exceed their pre-crisis level (Figure 2, Panel C). Between September 2022 and February 2023, around one in four companies reported difficulties to recruit (STAR, 2023). The simultaneous increase in vacancies and decrease in unemployment drove the vacancies-to-unemployment ratio to all-time highs (Figure 5, Panel C). This has however declined since 2022, as has the number of failed recruitments attempts and the job vacancy rate (the number of job vacancies divided by the number of occupied and vacant posts), which now stands close to the EU average (Figure 2, Panel D).

Cyclical factors played a role in this tightness as the economy has rebounded, but structural trends have increasingly been driving labour market shortages, which predate the pandemic. Digitalisation and the green transition are altering the skill composition of labour demand, particularly given Denmark's ambitious climate goals, and this is also exacerbating the challenges of demographic change. Severe shortages are already prevalent in fields directly affected, such as long-term care and engineering, with labour supply falling increasingly short of demand (McGrath, 2021).

**Figure 2. Tensions in the labour market persist despite the economic slowdown**



1. Percentage of firms reporting shortages of labour as the main factor limiting their business.

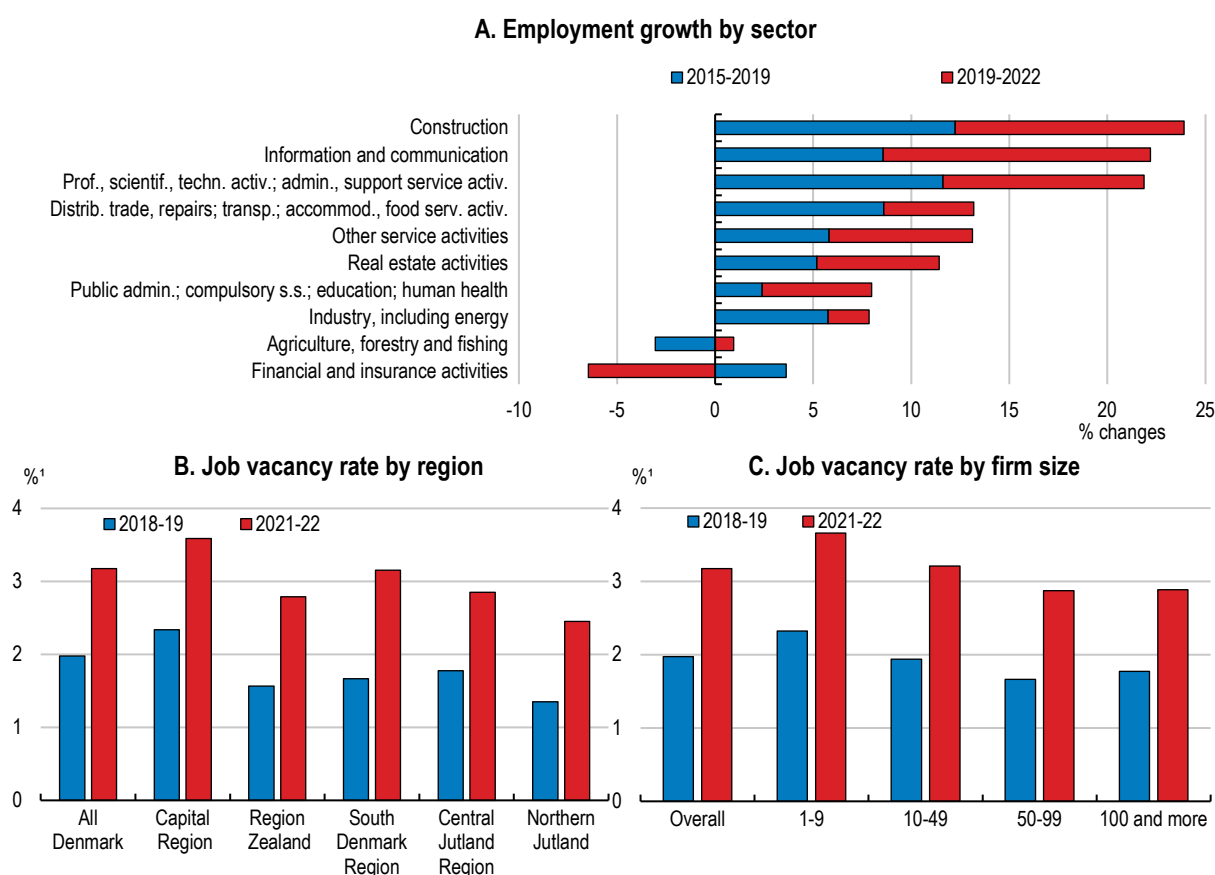
2. The job vacancy rate is the number of job vacancies as a percent of total occupied posts plus job vacancies

Source: OECD Analytical Database; DG ECFIN - Directorate General for Economic and Financial Affairs.; and Eurostat (JVS\_Q\_NACE2).

Employment has grown strongly in almost all sectors of the economy since 2015 and tensions in the labour market have increased in all regions and types of firms, making it difficult for businesses to operate at their desired production level (Figure 3). Staff shortages were reported by 42% of Danish businesses in the first

quarter of 2022, and 21.2% of employers identified labour shortages as the main factor limiting production in the fourth quarter of 2022, up from 6.4% in the fourth quarter of 2019 (European Commission, 2023a; EIB, 2023a). Labour shortages have been more pronounced and persistent for some activities and in small firms (STAR, 2023; Figure 3, Panels A and C). In the service sector, 39% of firms (in the fourth quarter of 2022) identified labour shortages as the main obstacle for carrying out business, higher than the EU average of 30%, and more than double the figure of 16% in the fourth quarter of 2019 (European Commission, 2023a). Construction has experienced intense skill shortages since the COVID-19 crisis, due to high demand for housing and government support for energy efficiency renovations. Tensions in ICT and healthcare have also accentuated, similar to other countries, during and in the aftermath of the pandemic (McGrath, 2021).

**Figure 3. Tensions in the labour market have been widespread**



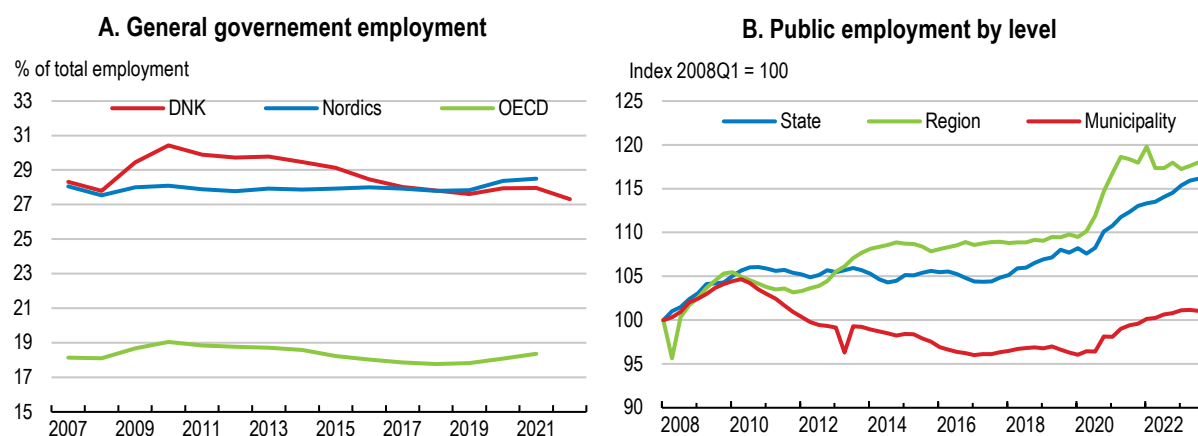
1. The job vacancy rate is the number of job vacancies as a percent of total occupied posts plus job vacancies.

Source: OECD Quarterly national accounts; and Statistics Denmark.

An important area of labour shortages is the public sector, particularly activities related to health and long-term care, given demographic changes (European Commission, 2023a). Public employment in Denmark accounts for around 30% of total employment, well above the OECD average, but comparable to other countries with strong welfare states (Figure 4). Public sector employment increased during the COVID-19 crisis and has not returned to its pre-crisis level yet. Employment growth has been relatively fast in the central administration and the regions (Figure 4, Panel B). Despite the increase, total public employment as a share of employment is below historical averages, which suggests this growth has not crowded out private sector employment. The number of public employees per 100 citizens was also below historical averages in 2022. Employment in municipalities is only just above the level in 2008, despite the decentralisation of and increasing demand for welfare services. Recruitment difficulties have been acute

in the healthcare and the long-term care sectors with lack of staff identified as the biggest challenge for Danish health authorities. For example, around 18% of advertised nursing positions were unfilled as of June 2023, only slightly down from around 25% before the pandemic (STAR, 2023), and a shortage of around 15,000 healthcare assistants and helpers is expected by 2035 (Ministry of Finance, 2023).

**Figure 4. Public employment has increased, especially in the central administration**

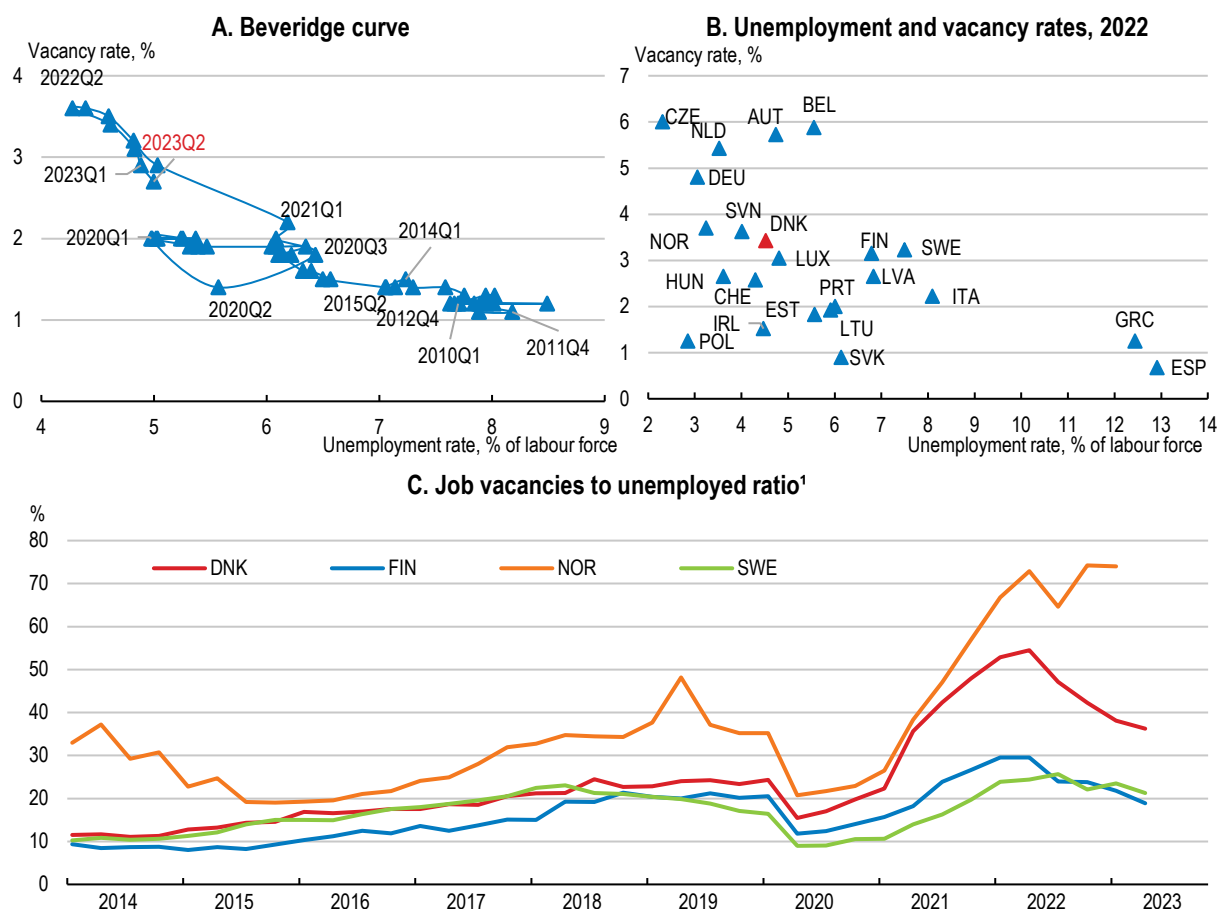


Source: OECD Analytical database; and OECD Government at a Glance; and Statistics Denmark.

Persistent labour shortages are detrimental to economic growth and well-being, and compound challenges related to demographic change. While raising employment is not an objective in itself, human capital is a key resource in the production process which cannot be perfectly substituted. Shortages can be particularly problematic for specialised skills needed to raise productivity, particularly in the ICT sector, and specific labour shortages can have a disruptive negative impact on the provision of essential goods and services, such as retail trade and healthcare, and reduce both the volume of potential output in the long run and the productivity of capital investment, thereby weighing on productivity growth and business dynamism. Labour shortages are viewed as the highest barrier to investment across all sectors and firm sizes in Denmark (EIB, 2023a). They can lower the quality of matching of workers and jobs, and shortages in knowledge-based services and ICT could impede the diffusion of technologies (Sorbe et al., 2019). As stressed in the 2019 *Economic Survey* of Denmark, the lack of skilled labour force could partly explain issues for new firms to scale up (OECD, 2019a). While increases in wages help to narrow the gap between labour demand and supply, caution is needed in the current inflationary environment to avoid excessive wage increases that might unduly harm competitiveness. It is also important to ensure the necessary allocation of resources across sectors in a sustainable way, which may not happen purely through wage changes even with Denmark's relatively flexible wage-setting system.

The growth in labour demand and shifts in relative demand between sectors have so far been facilitated by two features of the Danish labour market. First, the Danish labour market model, the so-called "flexicurity model", with low hiring and firing costs and decentralised wage negotiations, has allowed for swift adjustment. After the lockdowns, job mobility was high, with rapid reallocation and high turnover of workers (Danish Ministry of Finance, 2021). Indicators suggest labour shortages reflect the growing imbalance between labour demand and supply rather than a decline in matching efficiency. The Beveridge curve, which captures the relationship between the job vacancy rate and unemployment, shows an improvement in the matching of labour supply and demand over the past years (Figure 5).

Figure 5. Labour shortages reflect an imbalance between labour demand and supply

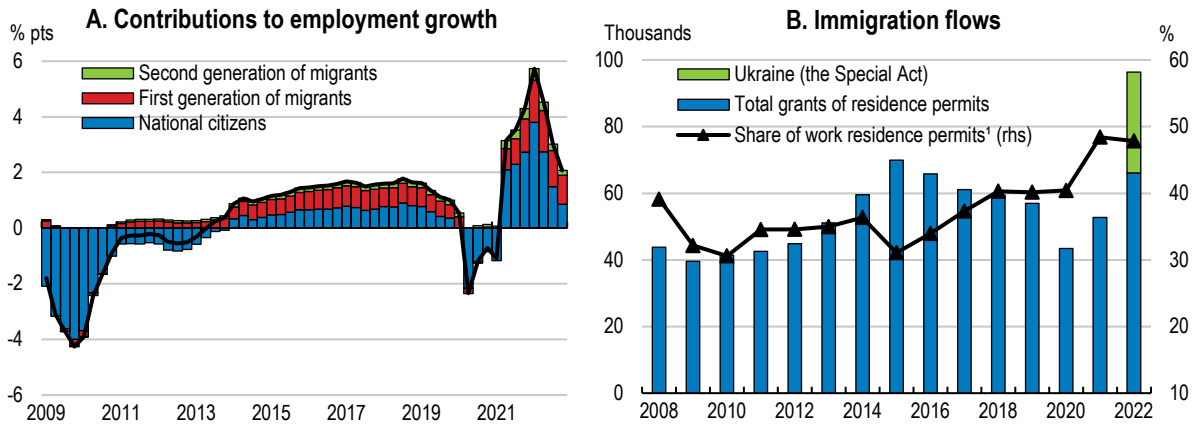


1. Job vacancies in business economy sectors.

Source: OECD Analytical Database; Eurostat (JVS\_Q\_NACE2).

Second, foreign-born workers have significantly contributed to employment growth, both through higher employment of foreign-born residents of Denmark and immigration (Figure 6). The employment rate of the foreign-born reached record highs in 2022 and continued to improve from around 66% before the pandemic to 69%, narrowing the gap to natives. After a halt in 2020, migration flows have accelerated significantly, with a relatively high share of labour migration. A record high number of 121,000 people immigrated to Denmark in 2022 (corresponding to around 2% of the Danish population), up from 76,000 in 2021, with net migration at around 58,000 (around 1% of the population). This was partly driven by around 30,000 Ukrainian refugees in that year, with around half finding employment by mid-2023. Around 12.2% of full-time workers in Denmark in 2022 were foreign-born, up from 5.7% in 2008. Of the foreign-born employed in Denmark end 2021, around half came to Denmark primarily for work, while refugees and family reunification account for most of the other half (Danmarks Nationalbank, 2022).

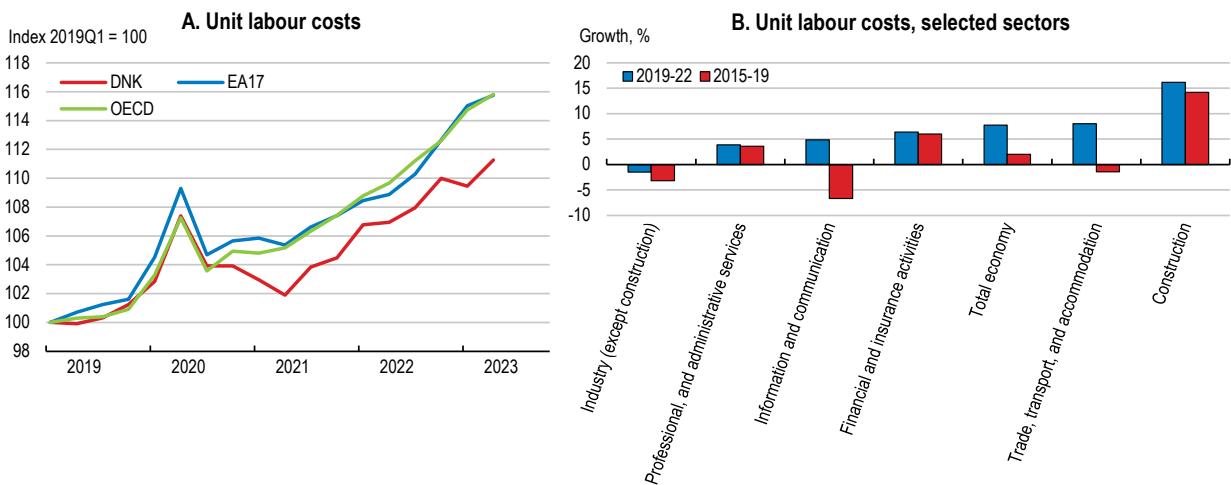
**Figure 6. Foreign-born workers have significantly contributed to employment growth**



1. Includes Work and EU/EEA, Wage-earners residence permits.  
Source: Statistics Denmark and OECD calculations.

The capacity to mobilise the domestic work force and to increase international recruitment to respond to growing labour demand likely helped to contain labour cost growth (Figure 7, Panel A). Labour shortages risk adding to supply-driven inflationary pressures and can trigger competitiveness losses as a result, but wages have not fully adjusted to strong inflation in 2021 and 2022 and indeed decreased significantly in real terms (OECD, 2024). Following the latest collective bargaining in spring 2023, wage growth is expected to accelerate but to be contained in the coming years. Nominal wages are set to accelerate to compensate for past high inflation and increase around 9-10% over the next two years (OECD, 2023a). Estimates of the impact of labour market tightness on wages suggest that the wage setting curve has been relatively flat at the firm level over the past years (Hoeck, 2022). However, there are large discrepancies across sectors, with a strong acceleration of labour cost inflation in construction and information and communication, both of which have performed very well with a strong demand for skills (Figure 7, Panel B).

**Figure 7. Unit labour costs have increased moderately**



Source: OECD Analytical Database; and Eurostat (NAMA\_10\_LP\_A21, NAMA\_10\_LP\_ULC)

**There remains room to mobilise the workforce more fully**

International comparisons suggest Denmark still has room to raise employment rates as, despite large improvements over the past years, they remain below levels seen in the best performing OECD countries (Figure 1, Panel B). There is substantial room to mobilise migrants more fully (Figure 8). While the

composition of migrants can vary across countries and Denmark has seen the employment rate for the foreign-born population increase by 12.1 percentage points since 2015, Denmark lags the best performing countries with respect to the employment of first-generation immigrants and even more so for second-generation children when both parents are immigrants, who have an employment rate barely above the EU average (Figure 8, Panel B).

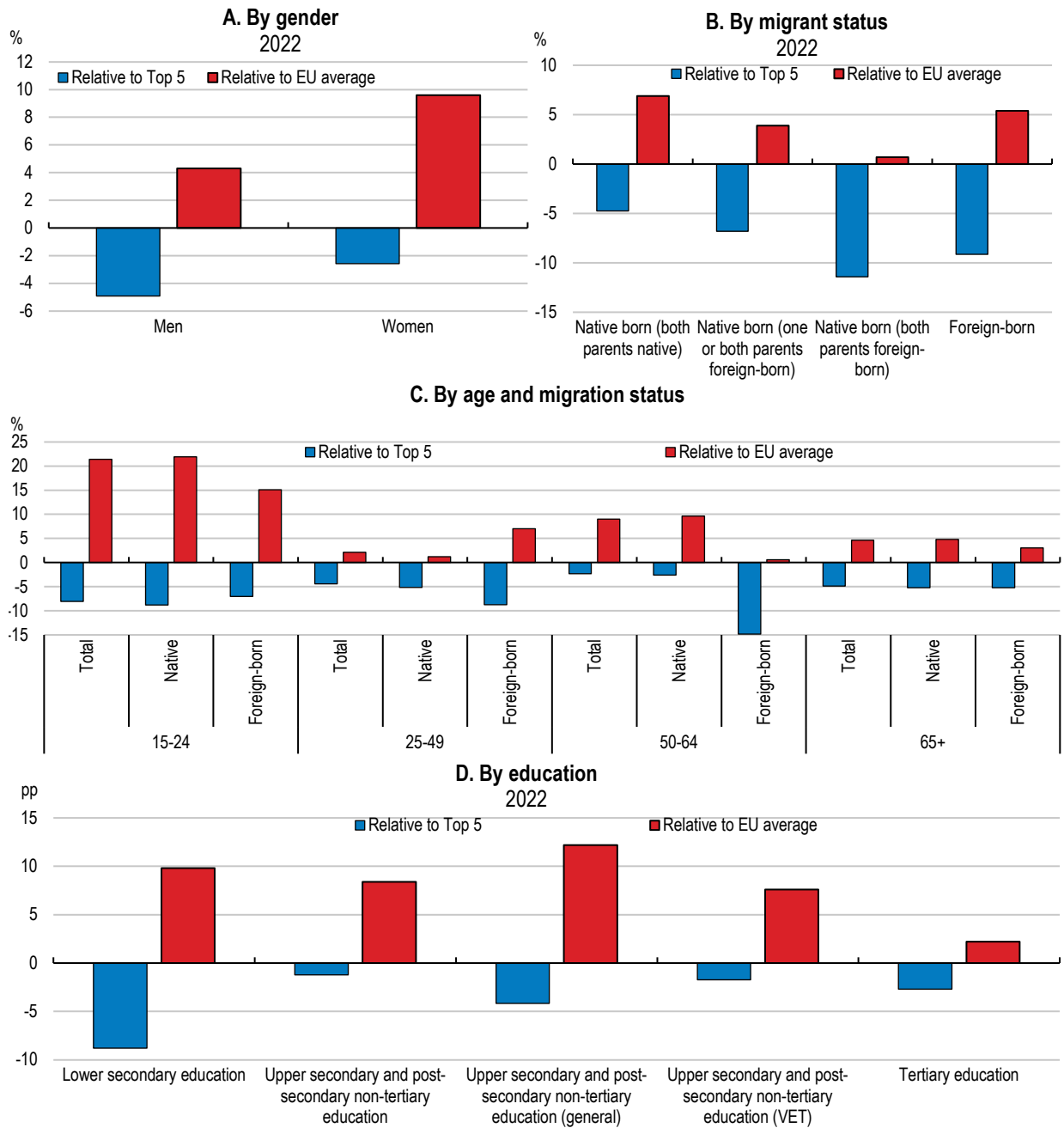
There is also room to improve employment rates among native workers. Prime age native workers exhibit unremarkable employment rates, just above the EU average (Figure 8, Panel C), and they have improved very little over the past years, increasing by only 0.4 percentage points since 2015. Employment rates of the older workforce have improved significantly lately, increasing by 7.8 percentage for 50-64 year olds since 2015, but there is still scope to increase employment rates further, particularly for those aged 65 and above (Figure 8, Panel C). The employment rate of those aged 15-24 years is high relative to the average but hides a relatively high incidence of part-time work (Figure 8, Panel C). There are also 6.7% of 15-24 year olds not in labour or education, below the EU average of 9.6%, but above Norway, Sweden, and Iceland. 23% of these are the children of parents with low skill levels, which emphasises the need for skills development, as Denmark also exhibits a larger employment gap relative to the best performing countries for the lowest educated (Figure 8, Panel D).

While employment rates are high, average working hours per worker are among the lowest in the OECD, alongside Germany and the Netherlands. Higher employment rates are typically associated with lower average hours as more people enter into the labour force and work part-time. The incidence of part-time work is higher in Denmark than in many OECD countries, and slightly higher than in the other Nordics (Figure 9, Panel A). There is a high incidence of part-time work amongst the young because most students work part-time (normally around 10-20 hours a week) alongside their studies. “Flex jobs”, a flexible job arrangement with reduced hours for those with limited work capacity, also adds to use of part-time (93,381 people were in flex jobs in 2022). The scheme allows those with disabilities and approved for flex jobs to maintain contact with the job market by working a limited number of hours. In addition to their agreed wage, a flexible salary allowance of no more than 98% of the maximum unemployment payment is paid from the municipality. Like in other OECD countries, women are overrepresented among part-time workers. Around 22% of employed women worked part-time in 2021, almost double the share of men (13%). Around 90% of part-time work was reported as voluntary in 2021, which points towards measures to remove distortions that may create a bias towards not working full time.

Working hours in full time jobs are amongst the lowest in the OECD (Figure 9). In general, working hours are laid out through collective agreements, with most agreements specifying a normal working week of 37 hours. This may reflect social preferences, as well as factors such as taxation. The average annual hours worked in Denmark is 1,363 hours, the second lowest in the OECD, and significantly lower than the OECD average of 1,716 hours with the incidence of part-time work also playing a role. Working hours have been on a declining trend over the past decade (Figure 9, Panel C). The gender gap in paid working hours slightly exceeds the EU and the Nordic average: on full time jobs, women work around two hours less than men per week on average (Figure 9, Panel B). However, like in most OECD countries, Danish women work on average one hour more per day on unpaid work, such as housework and childcare, than men (Bonke and Christensen, 2018; OECD, 2020c). Working hours for full-time workers in public services are also shorter: on average, public-sector employees work around 2 hours less per week compared to private sector employees. The abolition of a public holiday, the Great Prayer Day, from 2024 aims at raising worked hours per year and is estimated to increase labour supply between 0.14% and 0.34% depending on the methodology used (Minasyan, 2023). However, the positive impact of this measure might be muted in the long run should workers adjust working hours to restore their leisure time (DORS, 2023).

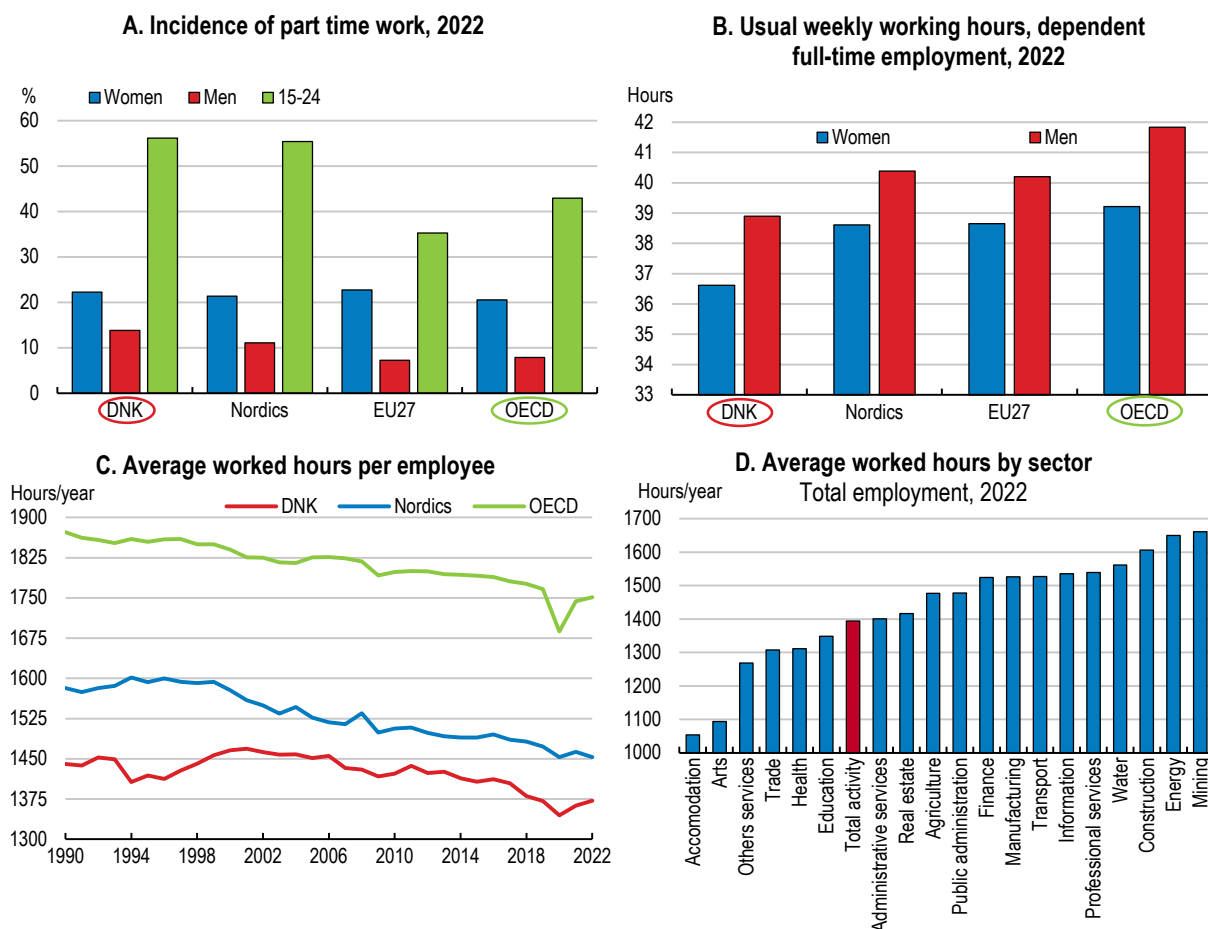
Figure 8. There is room to increase employment rates further

Difference in employment rates



Source: Eurostat.

Figure 9. Working hours are low compared to other OECD countries



Source: Statistics Denmark; OECD National accounts; and OECD Labour force statistics.

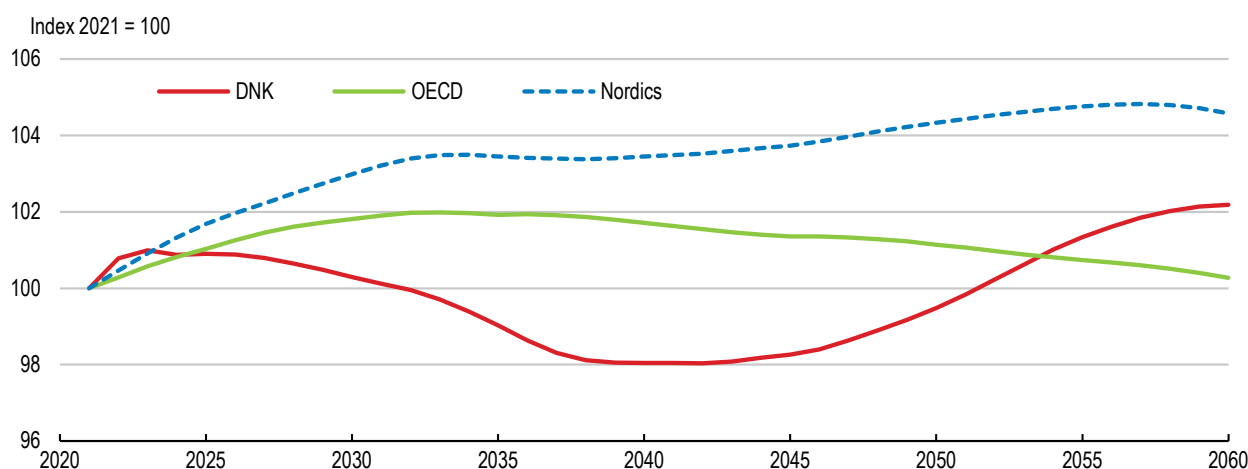
### Population ageing is slowing growth and changing the labour force

Population ageing is accelerating, slowing growth of the labour force and creating new pressures. The growth of the working age population has decelerated significantly over the past decade and is projected to turn negative between 2025 and 2040 before rebounding (Figure 10). The share of people close to retirement age in the working age population, people aged between 60 and 69, is projected to increase by around 2 percentage points by 2030. Increases in employment rates among 55+ year-olds, which is important due to population ageing, has however contributed to the fast ageing of employees (Figure 10), Greater job separation due to retirement implies an increase in job openings in all occupations by 2030 (CEDEFOP, 2018a). As working age cohorts decline and the dependency ratio increases, the ageing of the workforce will weigh on growth potential and complicate the recruitment needed to replace people retiring over the coming years.



**Figure 10. Population ageing will weigh on labour supply**

15-69 year-old population projections



Note: Population projections based on the “Main variant” scenario.

Source: United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition; and OECD Population projections database.

Reforms have been implemented to increase the effective retirement age and somewhat offset the effect of population ageing by raising labour supply among older workers (Box 1). The indexation of the retirement age to life expectancy is designed to mitigate the impact of growing longevity by increasing the length of working lives. The labour force is projected to continue growing as a result, but the annual growth rate is projected to decelerate significantly from around 0.7% over the past ten years to around 0.2% by 2040 (Danish Ministry of Finance, 2022). In addition, labour supply growth could fall below expectations, if the effective retirement age and older workers’ employment rates do not increase as fast as projected. Work capacity might not increase in line with life expectancy, especially in physically demanding occupations and self-financed early retirement could increase. This poses a risk to growth potential and for the sustainability of public finances (OECD, 2024).

### Box 1. The ageing of the Danish labour force

#### There are more older workers and people are working longer

The share of mature workers, defined as those aged 55+, has increased significantly since 1990, from 11% to 22% in 2021. It is set to continue to rise to around 26% by 2050 and to remain high as working lives are prolonged due to improving longevity and future increases in the effective retirement age.

Decomposing this increasing share of older workers shows that since 2015, the acceleration of the ageing of the workforce has mainly been driven by higher employment rates among older workers, rather than increases in the number of people in these groups. This has particularly been the case in industry as opposed to the public sector, which suggests a stronger retention capacity of older workers in industry. The employment rates of older workers contributed to the ageing of the workforce to a lesser degree in the public sector. Compared to a set of European countries, ageing has been faster in Denmark in most sectors, but not in public services, such as administration and education.

### Ageing has been more pronounced in some occupations

Using register and micro data allows for the identification of discrepancies across sectors and occupations on the degree and the pace of ageing in Denmark. While the share of older workers increased in aggregate by around 5 percentage points since 2010, this change was more pronounced in occupations with lower levels of qualifications when compared to the national average. Pension adequacy has not deteriorated, but the use of early retirement has declined, for which manual workers were over-represented.

The share of workers aged 55+ among employees is relatively high and is rising fast in occupations with acute recruitment difficulties, such as the healthcare and ICT sectors, as well as among manual workers in manufacturing and transport (operators, assembly, and transport workers).

Comparing age distributions across countries points to comparable ageing challenges in neighbouring countries, thus potential high competition for mobile skilled workers. Some occupations stand out as having a more pronounced and faster ageing both by Danish and international standards, including care workers, drivers, plant and machine operators, and science and engineering associate professionals.

A simple cross-country econometric analysis finds that occupations with higher shares of women, lower educated employees and more remote work have an above average share of older workers. By contrast, occupations with a strong employment growth, higher share of foreign-born workers and low job tenure have a lower share of older workers. No correlation was found with automation risks measured following Quintini and Nedelkoska (2018). Other empirical work finds that the share of older workers is not correlated with whether the occupation is green or brown (Causa et al., 2023).

Source: Own calculations based on EU LFS data.

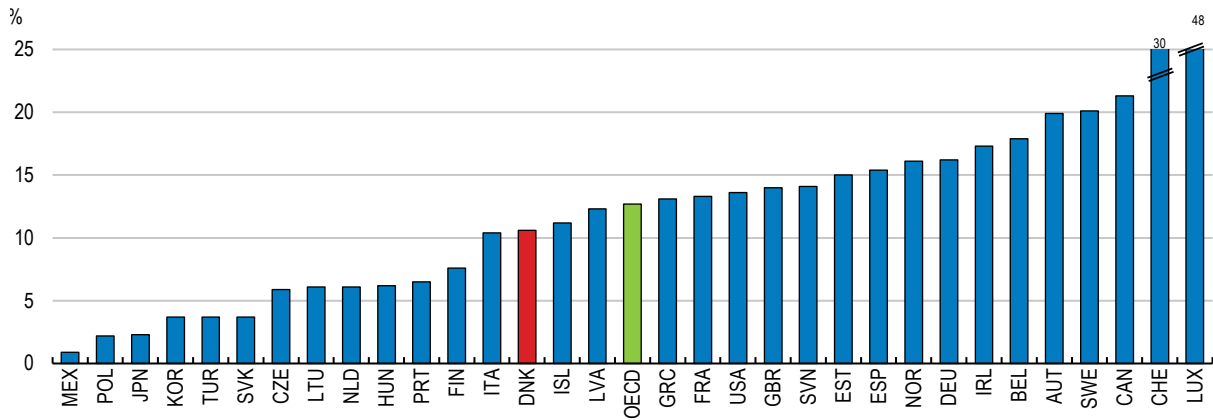
### Attracting more qualified migrants could help address labour shortages

Despite intensifying immigration over the past decade, Denmark has a relatively small foreign-born population compared to most OECD countries (Figure 11). Restrictive migration policy plays a role. Most foreign workers are from the EU as they can reside and work in Denmark under EU law (OECD, 2021a). The largest groups of immigrants are from Poland, Romania and Ukraine. The number of Ukrainian immigrants working in Denmark increased rapidly following the Russian invasion. Many of these Ukrainian immigrants are only entitled to a temporary residence permit under the Special Act, the Danish law on temporary residence permits for refugees from Ukraine.

Third-country foreign workers face stringent entry conditions based on strict employment, salary level or specific profession criteria. The minimum annual salary to recruit a non-EU resident is generally high (465,000 DKK, equivalent to around 87% of the average wage) and hinders recruitment of medium-skilled or newly trained employees. Since 2023, the pay limit was reduced to 375,000 DKK when the register-based unemployment rate is below 3.75%. The Positive List schemes for skilled workers and highly educated workers, that allow non-EU applicants to apply for residence and work permits in professions experiencing labour shortages, do not extend to all professions under stress. As of July 2023, the Positive List for People with a Higher Education includes 30 job titles, while the Positive List for Skilled Work includes 36, down from 46 job titles each for both lists in 2022.

**Figure 11. The foreign-born population is lower than in many OECD countries**

Share of foreign-born population, 2021 or latest year



Note: the OECD average is weighed.

Source: OECD International Migration Outlook 2022.

Recent policy changes have relaxed work visa rules for highly skilled migrants. The new lower pay limit will apply so long as seasonally adjusted register-based unemployment is below 3.75%. Changes also extended the post-study visa stay of foreign students after graduation; extended the Fast Track scheme, which allows certified companies to employ foreign nationals who meet certain conditions more quickly and easily, to companies with at least 10 employees instead of 20; and the set up a start-up visa scheme for entrepreneurs.

However, more could be done to facilitate international recruitments to meet skills shortages. The pay limit remains high, at around 70% of the average wage, and it should not be linked so tightly to overall demand conditions. The government plans to introduce a new scheme with lower limits for certified companies, but an annual quota will be set on the number of permits. The pay limit should also include other salary benefits, such as employee share options often used by start-ups. The Positive List for high skilled workers should be expanded to include experience-based knowledge in shortage areas. Recognition and validation of qualifications acquired abroad can be affected by uncertainty and lack of information regarding foreign educational systems. Denmark could take inspiration from Germany's introduction of the Skilled Workers Immigration Act (*Fachkräfteinwanderungsgesetz*) to allow medium-skilled migrants to be recruited from non-EU countries in specific occupations, including facilitating their access to training and reducing visa processing times (Box 2).

### Box 2. German migration policies to tackle labour shortages in medium-skill occupations

The Skilled Workers Immigration Act (Fachkräfteeinwanderungsgesetz) came into force in March 2020 to allow medium-skilled migrants to be recruited from non-European Economic Area countries in specific occupations. The Federal Ministry of the Interior issued 30,000 visas over the first year of the policy. The Act permits migrants with recognised qualifications to search and apply for these specific jobs, thereby making it easier for those with vocational training and/or practical professional knowledge to immigrate to Germany. The Act also aimed to reduce red tape and bureaucracy, while opening migrants' access to training. For example, the requirement on employers to prove there is no domestic worker who could fill the role was removed.

Further changes were agreed in March 2023 to further relax the rules and speed up the process. Many medium-skilled migrants come to Germany under apprenticeship contracts, therefore the strict criteria for the recognition of skills acquired abroad was relaxed. The requirement for a professional qualification in a specific field was replaced by two years of educational experience plus two years of professional experience. Skilled workers can start working in Germany even while their qualifications are being certified. A new feature of the reform was also added, the points-based Opportunity Card (Chancenkarte), which allows non-EU migrants to enter Germany even without a job offer if they meet certain criteria including qualifications, work experience, German language proficiency, age, and a connection to Germany. Skilled workers can obtain a permanent settlement permit (Niederlassungserlaubnis) after three years compared to the previous four-year requirement. The reform also waives foreign degree recognition in non-regulated professions, extends the list of occupations that qualify for a residence permit and repeals the labour market tests for apprenticeships.

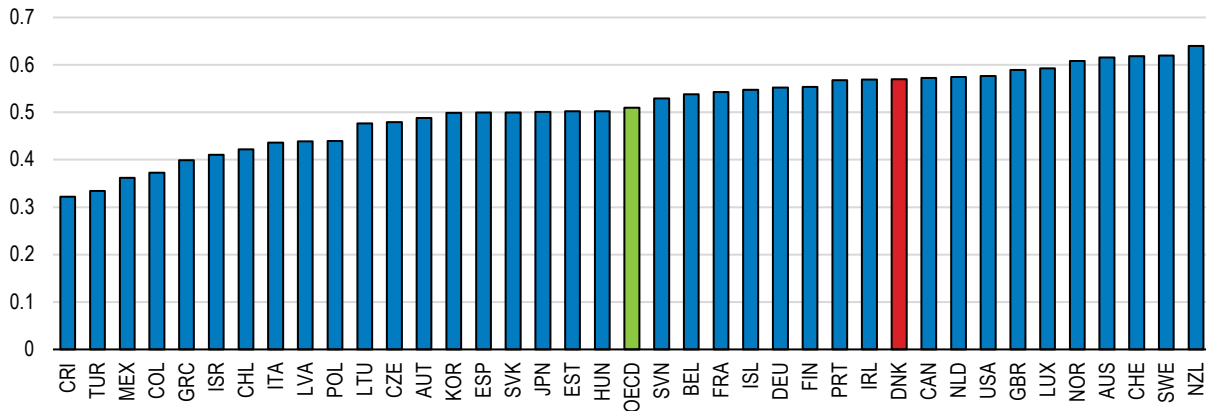
Source: OECD (2023) OECD Economic Surveys: Germany 2023.

Incentives to attract high-skilled foreign workers should be strengthened given growing competition from other European economies that also face labour shortages. Frequent rule changes, with often increasingly difficult residency rules both for permanent residency and citizenship, create insecurity and uncertainty for migrants or potential migrants, a key factor in the attractiveness of a country for high-skilled workers (OECD, 2023i). The immigration law has been amended 135 times between 2002 to 2019: these numerous changes lead to legal ambiguity and unpredictability for migrants and firms alike. More stable and certain pathways to permanent settlement would increase the attractiveness of Denmark and create a more welcoming environment for highly skilled workers, particularly as labour markets tighten in the countries from which foreign employees are recruited (Hanushek et al., 2015). The 2023 OECD Indicators of Talent Attractiveness, which measures the capacity to attract and retain talented migrants accounting for policies and practices for admission, ranked Denmark 11<sup>th</sup> in overall attractiveness to highly skilled migrants, well behind the leading countries (Figure 12).

Administrative burdens on residency should be reduced as these are complex and lengthy and further reduce Denmark's attractiveness (OECD, 2019a). It is thus welcome that the government plans to allocate additional funds to ensure faster and more efficient case processing. Denmark could learn from a successful Finnish experiment in which foreign tech workers and their families were encouraged to temporarily move to Finland. All necessary paperwork and logistics, such as accommodation and school places, were fixed in advance. The scheme proved extremely successful with 5300 applications, of which 60 were investors and 800 entrepreneurs wanting to start their own business.

**Figure 12. There is room to improve policies to attract migrants**

Talent Attractiveness index for highly educated workers, 0 = worst and 1 = best, 2023



Note: The OECD Indicators of Talent Attractiveness (ITA) are grouped in seven dimensions, each representing a distinct aspect of talent attractiveness: (1) quality of opportunities, (2) income and tax, (3) future prospects, (4) family environment, (5) skills environment, (6) inclusiveness, and (7) quality of life. An optional health dimension is available to users (8) health system performance.

Source: OECD, Talent attractiveness 2023 - <https://www.oecd.org/migration/talent-attractiveness>.

## Strengthening the policy framework to remove work disincentives

Adjustments to a range of policies are needed to reduce work disincentives and address shortages. This section proposes avenues to address barriers to longer working hours and lives. It presents policies to sustain labour force participation, including reducing labour taxation that disincentives working full-time and retiring later, and adapting the work environment to ensure those with work capacity can remain in the labour market. It then considers the issue of entry into the labour market when young, improving the integration of migrants, and improving access to mental health services.

### Strengthening financial work incentives

The Danish tax and benefit system is based on a solid tax-financed welfare state, providing quality public services with elevated income replacement rates for those out of work, but subject to strong activation and training requirements. Activation, search, and training services are run through municipal job centres, where DKK 5 billion of the national DKK 12 billion budget for employment schemes is spent.

The government plans to reform public employment services to achieve large efficiency gains and reduce the cost of activation policies by more than a quarter. This includes abolishing the local job centres. Details of their replacement are yet unknown, but an expert group has been tasked with reviewing the employment system and reporting by June 2024. Job centres have successfully assisted the unemployed in their job search, including achieving necessary education and upskilling, but this has come at high cost. Denmark has the highest amount of spending on active labour market policies in the OECD at more than 2% of GDP, despite the low level of unemployment. Ineffective programmes should be phased out as recommended in past Economic Surveys (OECD, 2019, 2021), but high-quality support for job seekers must be maintained. Benefits of the reform will critically depend on its design and careful monitoring is needed. Denmark could learn lessons from Sweden, the United Kingdom and Australia who have sought to achieve efficiency savings via increased digitisation of services and the use of private providers. Privately contracted services can lead to significant efficiency gains, but the design must ensure incentives are aligned to provide quality services to all jobseekers, including in less profitable delivery areas (Box 3).

### Box 3. Delivering modern employment services

#### Sweden

Since 2019, Sweden has embarked on a major reform of its public employment service, shifting from providing in-house services towards an increased use of private providers. This included a significant downscaling of local physical presence across Sweden, a reduction in the number of staff, and increasing digitalisation of services.

Outsourcing to private providers was intended to spur innovation and result in better-quality services at a lower cost via encouraging competition in the local area. But creating a market where employment services are largely contracted out requires carefully considering many factors, such as achieving fair and informed competition between providers, ensuring the provision of services at the local level, and creating a suitable outcome-based compensation model. In Sweden, independent providers are paid a daily allowance plus a performance-related payment. This is differentiated based on the jobseeker's employability to ensure providers do not focus all their attention on those that are closest to the labour market.

A public ratings-based system of providers was introduced to help jobseekers make informed choices. Although it is too early to properly evaluate these reforms, there have been some indications that remote and sparsely populated regions are not being sufficiently covered by private sector providers, due to insufficient incentives to enter non-profitable areas. Simplifying application requirements for providers active in other regions could enhance provision.

#### United Kingdom

Employment services in the UK are delivered primarily through “Jobcentres Plus”, which operates job centres across the country, and works with a network of contracted providers to deliver a range of employment support measures, such as training, self-employment support, and case management. Enhanced digitalisation of services has been occurring since 2016.

Digital platforms are available for online job search and vacancy matching, and free Wi-Fi and access to computers have been made available at job centres since 2018. Jobseekers are expected to use digital services through their online account, for example to message their work coach, upload documents, or record job search evidence. Those that find it difficult to use of digital services receive assisted digital support. As part of the digitisation process, over 100 local jobcentres (around 15%) were closed.

Nevertheless, mandatory personal attendance at Jobcentres Plus interviews remains a core requirement to receive Universal Credit and most other working-age benefits. A Department for Work and Pensions service and experience survey following digitisation showed that many found it convenient to access services online, although those with poor levels of literacy or digital skills found the transition quite challenging (DWP, 2018).

#### Australia

A new online employment services model, *Workforce Australia*, was implemented during the summer of 2022 to help reduce the caseload for providers and allow for more emphasis on jobseekers that are furthest away from the labour market. Jobseekers sign up either online or through the Assisted Customer Claim call centre and are referred to the appropriate employment service based on an online or telephone interview: digitally literate job ready jobseekers continue to manage their job search and reporting requirements via an online self-service tool; those that require some skills training enter the “digital plus” stream where they can receive additional services via a contracted provider; and those that face significant barriers to work enter the “enhanced services stream” and receive full in-person

support. Aligning incentives between contracted providers and the needs of all jobseekers has been the greatest challenge, with private providers often focusing their efforts on the lowest cost jobseekers.

Online services are supported by safeguards, including assistance from a Digital Services Contact Centre and the ability for jobseekers to choose to transfer to a contracted provider. If jobseekers do not find work or appropriate training within 12 months, they are moved to independent provider services to receive more personalised and intensive case management. In September 2022, 82.3% of individuals who used Online Employment Services were employed three months later, and 89.7% were either working, studying or both.

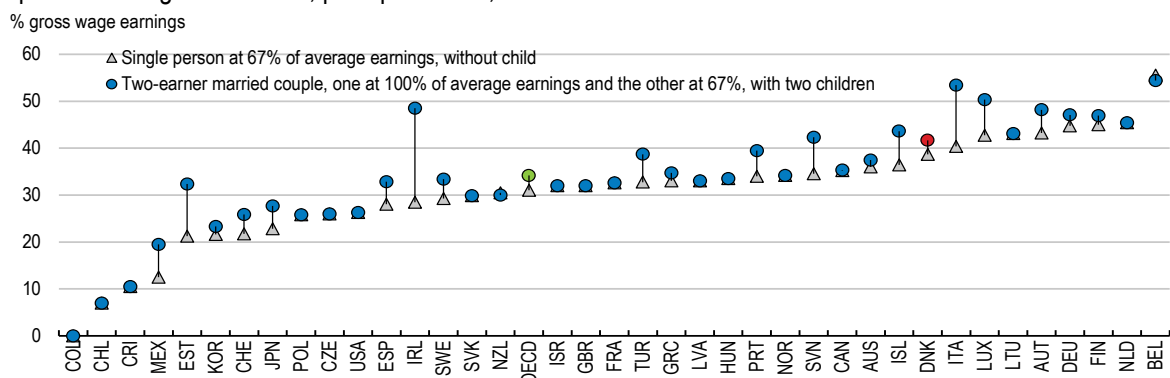
Source: OECD (2023i) Organisation of public employment services at the local level in Sweden.

As marginal effective labour taxation is high and the wage distribution compressed, relatively low financial gains for workers can weaken full participation in the labour market, especially for second earners and homeowners (Bingley, 2018) and reduce incentives to invest in education. Lower income taxation is found to correlate with higher average working hours, primarily caused by employees changing jobs to positions with higher agreed working hours (Sigaard, 2023). Financial disincentives to work measured by the ratio of transfers people received while not working and labour income have declined since 2009, partly due to past tax reforms and reductions in social assistance benefits in real terms (Danish Ministry of Economic Affairs, 2023a). The January 2022 reform package, “Denmark can do more II”, includes measures to increase labour supply by strengthening work incentives, with an objective to increase by around 12,000 the number of people in work by 2030, an increase of around 0.4% in employment. For instance, in 2022, the unemployment benefits received by recent graduates under 30 years old were reduced by more than EUR 500 (to around EUR 1275) after the first three months in unemployment and their duration to one year (from two).

A reform initiated in 2023 will reduce labour income taxation (Box 4). The marginal tax rates paid by employees on labour income, which mostly consists of the personal income tax as social security contributions are low in Denmark, are relatively high by international standards (Figure 13). The reform includes increases in the earned income tax credit, which should reduce the marginal tax on earned income by 0.5 percentage points for those earning less than the average wage. At the same time, marginal effective tax rates will remain well above OECD average and could be reduced further by increasing property taxation (OECD, 2024).

**Figure 13. Financial disincentives to work remain high for middle earners**

Net personal marginal tax rates, principal earner, 2021



Note: The Marginal Effective Tax Rate (METR) measures how much of additional earnings are taxed away through the combined effect of increasing tax and decreasing benefit. It includes the personal income taxes, social security contributions paid by employees, social assistance, temporary in-work benefits and housing benefits.

Source: OECD Taxing wages comparative tables.

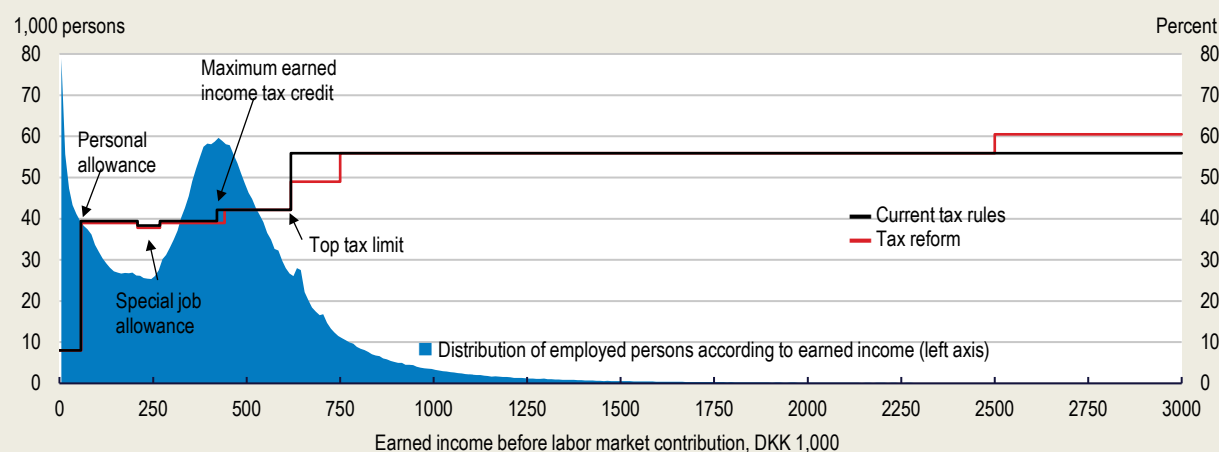
#### Box 4. Labour income taxation in Denmark

As social security contributions are low by OECD standards, the personal income taxation mostly consists of the State income tax and the municipal tax (individual taxation). The impact of the 2023 reform of the personal income tax on the marginal effective tax rate is illustrated in Figure 14. The system incorporating the reforms can be summarised as:

- An 8% labour market contribution levy is first deducted from all taxpayers' earned income.
- The State tax is levied at one of two rates, 12.06% and 15% for income above DKK 618 400 before deduction (1.3 times the average wage).
- With the reform, the tax rate would be adjusted as follows:
- For income between DKK 618 400 and DKK 750 000 before deduction (1.6 times the average wage), the tax rate is reduced by 7.5 percentage points
- For income between DKK 750 000 and DKK 2.5 million, the tax rate is unchanged
- For income above DKK 2.5 million before deduction (5.4 times the average wage), the tax rate increases by 5 percentage points, effectively introducing a new top rate.
- Local income taxes are levied by municipalities with the average rate at around 25% (they vary from 23.1% to 26.3% in 2023)
- The top marginal tax rate is capped. If the marginal tax rate including local tax exceeds 52.07%, the top tax bracket rate is reduced by the difference between the marginal tax rate and 52.07%. With the reform, the cap will be reduced by 7.5 percentage points to 44.57%, but the additional taxes for incomes above DKK 0.75 million will not be subject to the cap.

Figure 14. Estimated impact of the 2023 reform of personal income taxation

Marginal tax rates on labour income by level of income



Source: Ministry of Finance.

Working taxpayers receive an employment allowance of 10.65% of earned income to a maximum of DKK 44,800 when calculating local taxable income. Single parents get an extra employment allowance of 6.25% with a maximum allowance of DKK 24,400. With the reform, the allowance rate will increase by 2.1 percentage points (and 5.25 percentage points for single parents) and the maximum deductible amount by around 25% (and 84% for single parents). An additional employment allowance of 1.4% from 2026 increasing to 3.9% from 2030 will be introduced for senior workers two years or less before their



legal retirement age. The maximum additional allowance for senior workers is DKK 5,400 from 2026 and will be increased to DKK 14,800 in 2029 and DKK 15,200 in 2030 (2023 income level).

Allowances are provided to working taxpayers and for pension contributions (with a cap). Some work-related expenses are deductible from taxable income (with caps), such as contributions to unemployment insurance and trade unions, expenses relating to transportation to the workplace, contributions/premiums paid to private pension saving plans (except lump sum savings).

A tax-free lump-sum transfer is allocated to people working at least 1,560 hours per year (30 hours per week) the first two years after the legal retirement age. The tax-free transfer amounts to DKK 45,415 the first year and DKK 27,033 the second year. With the 2023 tax reform the tax-free transfer will be increased by 11 percent in 2026 and by around 30 percent in 2029.

Source: OECD (2023f), Danish Ministry of Taxation (2023)

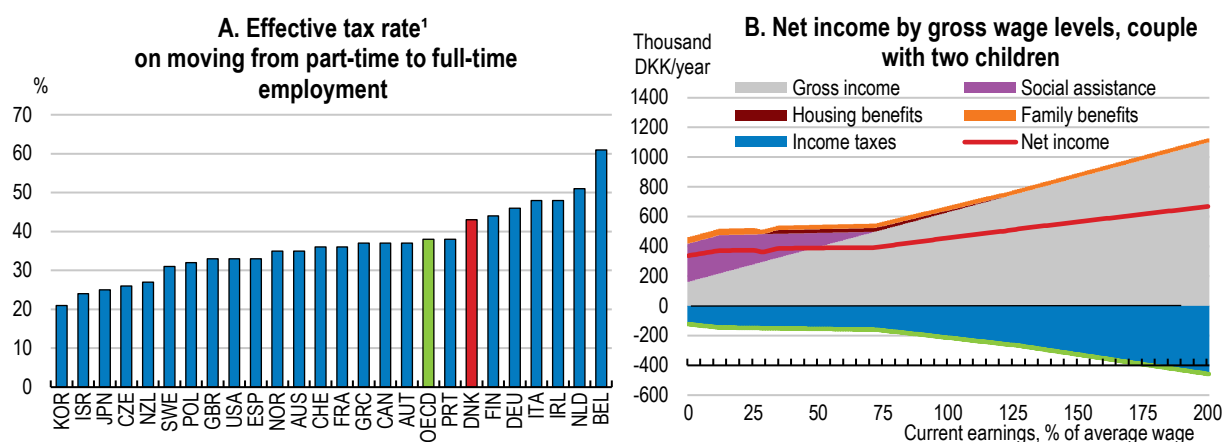
As recommended in past Economic Surveys of Denmark (OECD, 2019a; OECD, 2021a), the reform will cut the personal income tax rate for upper middle-class households by adding a new tax bracket for incomes up to 1.6 times the average wage. The top income tax rate is currently paid at a relatively low level of income by international standards (around 1.3 times the average wage). The top tax rate will also increase by 5 percentage points and apply to revenues above DKK 2.5 million (more than five times the average wage), impacting only a limited number of taxpayers and likely have a very modest negative impact on labour supply. Overall, this reform would increase financial gains from work for most taxpayers (Figure 14) and is estimated to boost employment by around 5 000 full time individuals by 2030 (Danish Ministry of Taxation, 2023). The effects of the reform on the labour supply could be lower than expected, as small changes in taxation are found to be less successful at changing behaviours (Kleven and Schultz, 2014). The reform is estimated to cost around DKK 6.75 billion (2.4% of GDP), considering the positive impact on higher labour supply on tax revenue.

Raising the top tax rate, which is already among the highest in the OECD, could pose risks to financial incentives and of tax avoidance, but it would only apply to a small number of households. Empirical evidence points to diminishing revenue returns of increasing the effective marginal tax rates that apply at substantially above-average income levels (Akgun et al., 2017). Deepening the gap between the taxation of individual income and corporate income incentivises retained earning strategies and favours incorporation by entrepreneurs, which has been increasing over the past two decades (OECD, 2023b). The Danish tax system (the VSO “corporate tax scheme”) allows business owners to retain earnings and, until earnings are distributed, or capital gains realised, to only pay the corporate tax rate, which at 22% is well below the top marginal income tax rate. Careful assessment and monitoring of the impact of the reform on tax optimisation will be required.

Denmark has a generous and complex benefit system that contributes to reducing inequality to relatively low levels. Despite having strong activation and job search requirements, the system also features some financial disincentives to work. Many benefits are means-tested, including family and housing benefits and some (including social assistance) have a withdrawal rate close to 100%. As a result, low-to middle income families receiving benefits face a high effective marginal tax rate and gain little by raising hours worked (Figure 15). The withdrawal of their benefits when income increases significantly reduces their incentives to expand work effort. As stressed in the 2021 *Economic Survey*, in-work benefits targeted at families earning less than the average wage and receiving means-tested social benefits could be a powerful lever in raising incentives to work longer hours (OECD, 2021a). At the same time, the compressed wage distribution complicates the introduction of such benefits as many people might be eligible for benefits if the tapering was very gradual. The government established a temporary job premium scheme for cash assistance recipients who have received benefit for at least 1 year within the last 3 years. A DKK 5,000 tax-free lump sum will be paid when benefit recipients leave the cash assistance system and are employed

for 6 consecutive months. The job premium scheme is set to expire in mid-2024. Its impact should be evaluated, and the measure maintained if it proved effective in raising work effort.

**Figure 15. Financial incentives to increase working hours are relatively low**



1. Tax rates include personal income taxes, social security contributions paid by employees, social assistance, temporary in-work benefits and housing benefits; Panel A refers to the share of gross earnings in a job that pays the average wage when increasing hours worked from 50% to 100% of full-time employment, for a second earner with two children and a partner working full-time in a job that pays the average wage.

Source: OECD Benefits, Taxes and Wages (database).

## Raising the effective retirement age

### Incentivising longer working lives

Past pension reforms including increasing the legal retirement age and restricting early retirement schemes have contributed to increasing employment rates of older (55+ year old) workers. The statutory retirement age reached 67 in 2022 (and 64 in 2023 for early retirement). The duration of voluntary early retirement programmes has been shortened from five to three years with the minimum age raised in line with the statutory retirement age. These measures coincided with an increase of the employment rate of the affected cohorts by more than 6 percentage points. Like in many other OECD countries, employment rates tend to fall sharply at the legal retirement age.

The Danish pension system is based on a combination of means-tested public pension benefits, quasi-mandatory occupational pension schemes, and private savings. Financial incentives for prolonging working lives when approaching the retirement age are strong and have been reinforced. Drawing down pension savings earlier than three to five years before the legal retirement age is heavily taxed, while pension savings offer tax allowances (see Box 4). Since January 2023, means-tested public pensions have been paid independently of a spouse's or cohabitant's earned income. This should help mitigate disincentives to work longer due to a high earning spouse. Furthermore, labour income has been exempted from means testing in the calculation of public pension benefits since 2023. The 2023 personal income tax reform includes an additional employment allowance for workers close to the retirement age and increases in the tax-free lump-sum transfer allocated to those working the first two years after the legal retirement age (see Box 4).

The strict indexation mechanism of the legal retirement age should also foster labour supply, with some risks. The statutory retirement ages are adjusted to life expectancy gains every five years, conditional on approval by Parliament. This measure targets an expected retirement period of 14.5 years. As a result, the average pension payment period will be progressively reduced and a person entering the labour market at 22 in 2020 is expected to reach the legal retirement age at 74, the highest in the OECD (OECD, 2024). A reduced length of retirement of future generations can undermine the political acceptability of the indexation and raise incentives for early retirement. Wealthy households with high private savings, large

replacement rates and valuable assets may increasingly opt for a self-funded early retirement as the retirement age increases and expected time in retirement diminishes (Box 5). Relaxing the indexation rules of legal retirement ages after 2040, without critically undermining fiscal sustainability according to experts' projections (Pension Commission, 2022), could temper any further lengthening of working lives.

### Box 5. The prospects for rising voluntary early retirement among prosperous older workers

While many efforts are being made across countries to retain older workers in the labour force as the population ages, rising prosperity and shifting attitudes towards work may lead some of them to voluntarily reduce working hours or take early retirement to enjoy more leisure time. In Denmark, compulsory pension savings are high and the comprehensive welfare system mitigates age-related costs, so self-funded voluntary early retirement may seem attractive.

Basic economic theory assumes that individuals optimise their utility over time by consuming goods, services, and leisure when not working. As labour income increases, two opposing forces come into play: the "income effect" may reduce work effort as people demand more leisure, while the "substitution effect" increases it. Models suggest that labour supply may decline after reaching a certain income threshold, known as the backward bend of the labour supply curve. In addition, higher pensions and housing wealth may increase the demand for leisure time as people age.

In practice, retirement decisions hinge on a large range of factors, including labour income, pension savings, available early retirement options, health status, work conditions, and family circumstances. Retirement entitlement strongly predicts early retirement, and wealth demonstrates a clear association with early retirement (Kuhn et al., 2021). Homeownership also increases the likelihood of early retirement, especially in pension systems that allow flexible pension savings withdrawal. Increasing financial incentives to prolong working lives could lead to lower working hours before retirement (Gustafsson, 2021).

In reality, the employment rate of older workers and the effective retirement age has increased significantly over the past decade. Early retirement decisions have been predominantly driven by poor health, low employability, and strenuous working conditions, rather than a desire for leisure (Qvist, 2021).

Nevertheless, an estimated 6,000 individuals chose self-funded early retirement in Denmark in 2022, primarily individuals with substantial personal assets and savings. There is some evidence of similar trends in other countries with high pension savings, such as Australia. However, while most Danes save enough to enjoy a comfortable retirement, ordinary workers typically lack the financial resources to retire early based on their own savings. Financial incentives to continue working are strong. Early withdrawal of assets from programmed withdrawal or life annuity schemes is subject to a fixed 60% tax rate. Many occupational plans do not offer early withdrawal options (OECD, 2018).

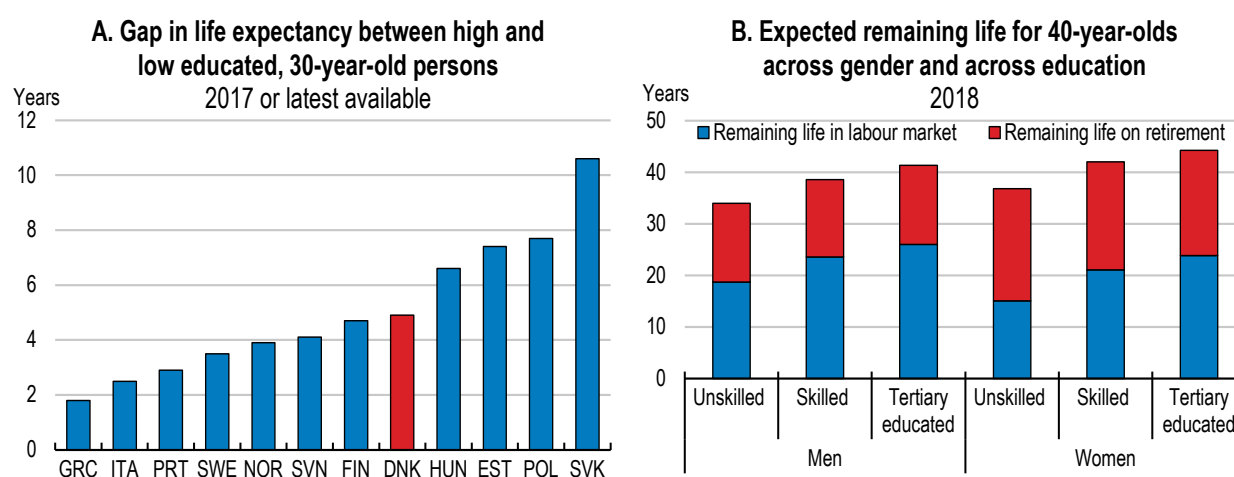
Changes in future retirement decisions are difficult to predict, given the multiplicity of underlying factors. Higher interest rates and the maturing of the pension system could lead to self-funded retirement becoming more widespread, particularly among homeowners. Public opinion polls suggest a notable shift in people's attitudes towards work, emphasising self-fulfilment and diminishing personal commitment to work (Haerpfer et al., 2022). Structural transformations, especially in the wake of the pandemic can lead to further changes.

Denmark has four early retirement schemes, including three directed to workers with reduced work capacity and long careers that partly overlap (Box 6). Around half of workers currently use early retirement schemes when leaving the labour market. Workers with a low education level have a lower life likelihood than the average (Figure 16) and are overrepresented among early retirees. Thanks to the early retirement

schemes, they tend to leave the labour market earlier and spend the same time in retirement as more educated workers with longer life expectancies (Figure 16). The main cause of early retirement is a poor health status and policies protecting those unable to pursue their careers are an important social safety net. At the same time, there is room to strengthen eligibility criteria to access disability benefits. To receive the senior disability pension for those close to retirement age (*Seniorpension*), which can be taken up to six years before the legal retirement age, the degree of work capacity is assessed vis-a-vis the latest job of the recipient and eligibility is not reassessed after pension benefits are allocated. Furthermore, the number of younger people receiving disability benefits (*Førtidspension*) aimed at those above 40 years of age has increased significantly over the past years.

The number of workers eligible for the voluntary early retirement scheme *Efterløn* will decline substantially in the coming years. The scheme is much less attractive than in the past and the share of less educated workers who are more likely to use the scheme, is falling. Nevertheless, further reforms can limit inflows in alternative pathways to retirement and allow people to work even when age reduces their work capacity. The take up of disability-based pension might increase as the retirement age rises, notably among workers in physically demanding occupations or if life expectancy improvements do not fully translate into longer lives in good health. The government could simplify the early retirement system by aligning the benefit periods of available schemes to three years. With this reform, early retirement would be possible only three years before the legal retirement age (instead of six for the current *Seniorpension* scheme). Further measures could be taken to ensure those approaching the retirement age with reduced work capacity have access to rehabilitation programmes when needed, and do not face disincentives to continue working or work longer hours, for instance by assessing work capacity vis a vis different types of jobs in the *Seniorpension* scheme, and reassessing eligibility on a regular basis depending on the distance from the legal retirement age. Encouraging longer working hours in subsidised jobs directed to those with reduced work capacity (flex jobs) could also help. Unintended consequences of restricting the access and generosity of the early retirement scheme, including the use of alternative pathways to early retirement (unemployment benefits) and rising inequality at old age should be carefully monitored. Denmark should also ensure that equality in the length of retirement is preserved and options to retire earlier for workers with a very long contribution history are maintained.

**Figure 16. Early retirement schemes reduce gaps across groups in life expectancy after retirement**



Note: Panel B tertiary educated is the unweighted average of KVV/MVV and LVU.

Source: Eurostat (DEMO\_MLEXPECEDU); and Ministry of employment: Pension Commission's report 2022.

### Box 6. The Danish early retirement schemes

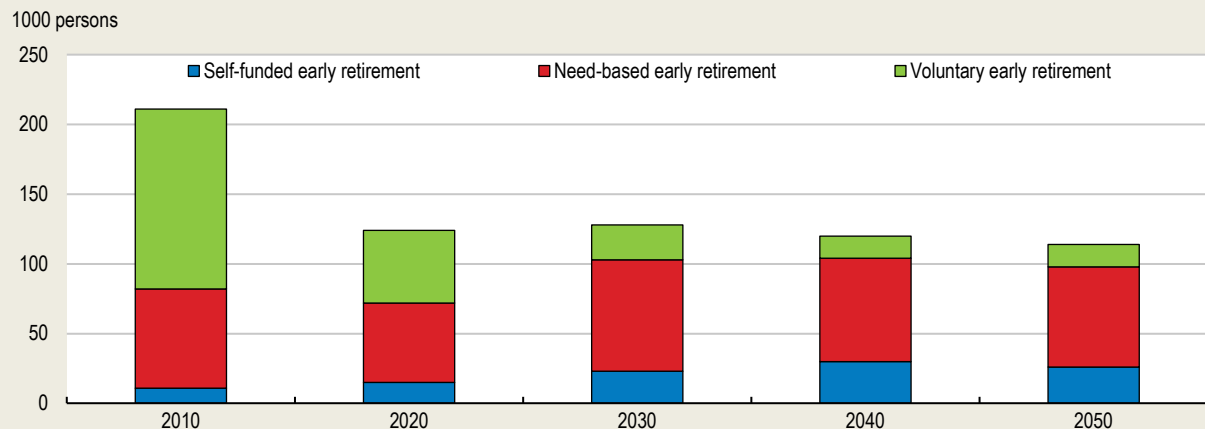
Denmark has four main disability and early retirement schemes, two voluntary retirement schemes and two need-based schemes.

#### Voluntary early retirement schemes:

- *Efterløn* is available to members of an unemployment insurance fund who have paid contributions for 30 years and reached the legal age for early retirement (currently 64). The take up of this scheme has declined significantly over the past two decades and is expected to stabilise at very low levels by 2030. A reform in 1998 raised the costs of opting into the scheme; measures in 2012 made it possible to withdraw previous contributions at a tax discount and changed participation in the scheme from an opt-out system to an opt-in system. As the amount paid is capped and reduced by 64% of private pension payments, its return will fall as private pension schemes mature and the number of recipients is set to decline (Figure 17)
- *Tidlig Pension* is a flat means-tested benefit awarded to people with very long work records (41-43 years) and low pensions savings up to 3 years before the legal retirement age. The benefit which is close to the basic public pension benefit for singles can be combined with occupational pension benefits. Strong means-testing means that working is financially unattractive. The take up of this scheme has been low so far.

Figure 17. Projected change in early retirement

Incidence of early retirement from 0 to 6 years before the legal retirement age, number per 1000 persons



Note: The "Need-based early retirement" category comprises the Seniorpension and the Førtidspension schemes. The "Voluntary early retirement" category comprises the Tidlig Pension and the Efterløn schemes.

Source: Ministry of Finance.

#### Schemes open to those with reduced work capacity:

- *Førtidspension* is awarded to people over 40 (with some exceptions) who have a permanent and significantly reduced ability to work.
- *Seniorpension* (introduced in 2020) has the same benefit conditions as *Førtidspension* but is awarded to people close to retirement age who have a reduced ability to work and a long work history. It gives the opportunity to retire six years before the statutory retirement age if the ability to work is reduced to 15 hours or less per week on the latest job.

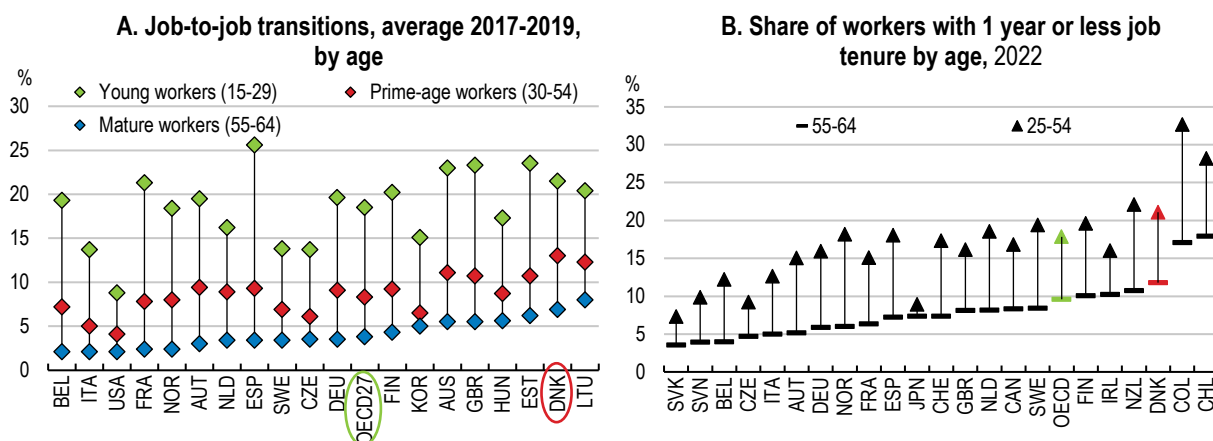
Overall, the share of older people using the disability and needs-based pension benefits is projected to remain stable after 2030 despite rising retirement ages (Figure 17). Voluntary early retirement is projected to decline, as fewer workers will be eligible for *Efterløn* and self-funded early retirement is set to remain contained at around 3% in 2040.

Source: Antal modtagere af tilbagetrækningsydelse før folkepensionsalderen fra 2004-2060; A new early pension scheme in Denmark since 1 January 2021 ESPN Flash Report 2021/01; Denmark's National Reform Programme 2023.

### Adapting the working environment to an ageing population

Improving employability of older workers would help to draw talent from workers of all ages and to support mobility in the labour market. Job-to-job mobility is high in Denmark by international standards, including for older workers and even for those with low levels of educational attainment. Demographic changes will affect job transitions because, as in other OECD countries, job mobility tends to decline with age (Figure 18). Similar to other countries, hiring rates are also lower for workers aged 60-64 years than for younger ones, but the gap between hiring rates of prime-age and older workers is smaller in some countries such as Japan or some Eastern European countries, suggesting room for improvement in Denmark (Figure 18). Survey data show that around a third of Danish retirees would have liked to have worked longer (Ransby, 2020), but older workers report age as a key barrier to finding a job (Thomassen et al., 2022). The proportion of older workers back in the workforce after 12 months of unemployment is significantly lower compared to prime age workers, particularly for 60-64 year-olds.

Figure 18. Job mobility declines with age but hiring rates of older workers can improve



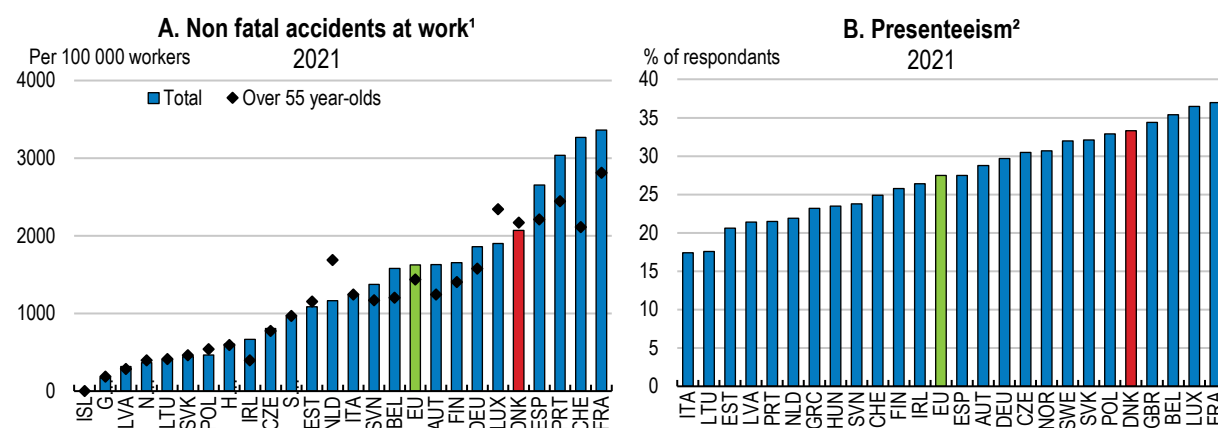
Source: OECD (2023), Retaining Talent at All Ages, Ageing and Employment Policies, <https://doi.org/10.1787/00dbdd06-en>; and OECD Job tenure database.

Age is a common reason for work-related discrimination and negative attitudes against older workers is a major barrier in many OECD countries (OECD, 2022d). In 2022, Denmark introduced a law that prevents employers from asking the age of a job applicant. Blind recruitment has been introduced in many countries, such as in the UK and Australian civil service. Nevertheless, Danish firms must accompany this with diversity training programmes to tackle conscious and unconscious biases and stereotypes, as age bias can be found in all parts of the recruitment process (OECD, 2022d). Formal returner or re-entry programmes can also help employers tap into older workers' skills and experience. These programmes could be directed to older workers at risk of being made redundant or those looking for a career change. Those with a long career break can combine part-time work with training to update outdated skills and overcome difficulties in new work (Hartlapp and Schmid, 2008; Shacklock, Fulop and Hort, 2007). The government could provide guidance to businesses and develop frameworks alongside social partners that firms can tap into. The UK for example, has a formal programme ("The New Deal 50 Plus") that helps

facilitate re-entry through formalised training aimed to boost skill development, employability of workers, and productivity (OECD, 2022d).

Strengthening the prevention and promotion of healthy lifestyles, and adjusting the workplace is needed to reduce push factors into retirement, particularly for those with physical work demands who tend to retire earlier and have significantly shorter working lives (Qvist, 2021; Pedersen et al., 2020). Denmark has room for improvement in terms of work accidents and “presenteeism”, meaning attending work when unwell (Figure 19). Self-reported incidents are high, and, although self-reporting can bias upwards statistics, this is still larger than in other countries with strong welfare states where incentives to report are also high, such as Sweden or Norway. Presenteeism can be detrimental to employee health in the long run, as it can mask serious illness and is often associated with poor working conditions (Saint-Martin, Inanc and Prinz, 2018). In March 2023, a new agreement was established on an improved working environment and strong action against social dumping. This is welcome, as the agreement provides the Danish Working Environment Authority with a historically high level of funding and contains several initiatives to ensure a healthier and safer working life. Changing tasks or work content of older workers to ease the burden of physical work can enable these employees to prolong their careers. Examples of such programmes can be found in Finland and Norway (Box 7), where early-intervention models with follow-up actions for those with reduced work ability have found success (OECD, 2022d).

**Figure 19. Working conditions could be improved**



1. Agriculture; industry and construction (except mining); services of the business economy. Iceland data refers to 2020.

2. Individuals who responded “yes” to the question “Over the past 12 months, have you worked when you were sick?”

Source: Eurostat (HSW\_M101); and Eurofound (2023), European Working Conditions Telephone Survey 2021 dataset, Dublin, <https://eurofound.link/ewcts2021data>.

### Box 7. Promoting healthier and longer working lives at work

#### Norway

A company introduced a comprehensive set of programmes with the aim to increase the average retirement age by six months, the “Life Phase Policy”. The initiative included: management training to cope with the challenges of different age levels in the workforce; annual health monitoring, with dietary and training advice and a special focus on older workers; the option for employees over 62 years old to change working hours according to their needs; and the option to be relocated to less physically demanding jobs after retraining. Following this initiative, the actual retirement age has increased by three years from 63 to 66. In addition, the company has reduced sick leave and very few employees have been declared medically disabled.

### Finland

A company where the nature of the work is physically demanding and around half of the workers are aged over 45, implemented an early-intervention model with follow-up actions for those with reduced work ability. The interventions are carried out in cooperation with foremen, occupational health services and insurance companies, under the lead of the company's head of health and well-being. Vocational rehabilitation is provided to allow tasks and/or roles to be adjusted so workers can continue their careers until retirement. It is estimated that, of those that faced early retirement from a physically demanding role, up to two-thirds could remain in place due to vocational rehabilitation. In addition, a smartphone Safety-App was introduced. Employees gain access to ideas on easing the burden of physical work and improving safety at the workplace. The app enables safety observations to be collected via photos to illustrate any shortcomings. This feature is particularly useful for foreign workers who do not speak Finnish. Lastly, workers who are under mental strain are supported and monitored by lifestyle assessment measurements which help employees to recognise stress and identify areas for improvement (physical activity, nutrition, sleep).

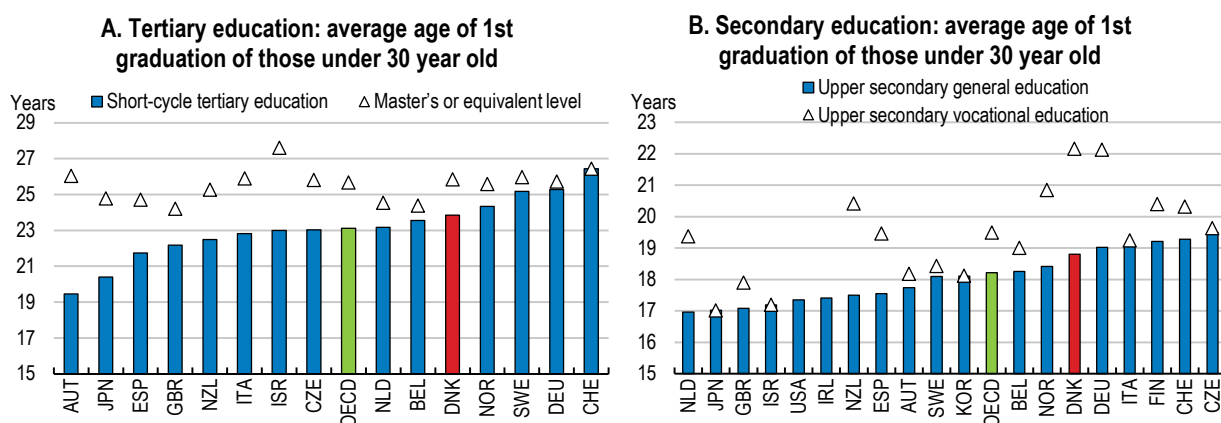
Source: OECD (2022d) Promoting an Age-Inclusive Workforce.

### Encouraging people to start work younger, while maintaining high education levels

Young people in Denmark leave the school system later than in most other countries. While it has fallen over the past decade, time to graduate in Denmark is among the longest in the OECD, with a high proportion of Danish students entering university later and then doing master's degrees (Figure 20). Students tend to start upper secondary education relatively late compared to peers, as around 30% of pupils opt for an additional academic year (10<sup>th</sup> grade) before starting high school to discern their chosen path. As recommended by the OECD in 2009, the 10th grade should be only targeted at students with the greatest learning needs (OECD, 2009).

Figure 20. Labour market entry could be faster

2021



Source: OECD Education at a Glance database.

Danish students on average take 5.2 years to complete a bachelor's and a master's degree (which 90% of bachelor's students go on to take), when it is on average around four years in some countries such as the UK, Ireland, or Australia. This slower pace of education does allow many students to undertake part-time work alongside their studies, which adds to the part-time labour supply, and can improve chances of full-time employment post-graduation, but it delays entry into their chosen full-time occupation. A major reform of the tertiary education system in Denmark has been announced with respect to the length of master's degrees that should accelerate post-study entry into the labour market. A differentiated model of



second-cycle education with different options will be implemented, which will include an ambition of 30% of master's degrees becoming either 1.25 year master's programmes (75 ECTS) or part-time master's programmes combined with relevant employment. The reforms will create a model similar to comparable EU countries, such as in the Netherlands where master's degrees can be one year. While the reform increases flexibility to respond to different labour market needs, through faster training for high-skilled work, and student choice, the effects and outcomes on quality and productivity should be monitored. The Danish Economic Council has pointed to a potentially negative impact on productivity (DTU, 2023; Reform Commission, 2023). In addition, less part-time work and/or internships may be possible given possible increased course intensity, therefore any effects on post-graduation employment rates should be assessed. Lessons from the Dutch experience suggest it is important to carefully consider which programmes are shortened, as some courses are difficult to condense into shorter time periods. Domestic and international recognition for labour market and academic purposes also needs to be assessed to ensure mutual recognition (as achieved by the UK) of the new one-year (90 ECTS) master's degrees as equivalent to a two-year (120 ECTS) master's, as part of the Bologna process. Ensuring mutual recognition as envisioned in the planned reform will secure the attractiveness of Danish students in international job markets and increase the attractiveness of Denmark for international students.

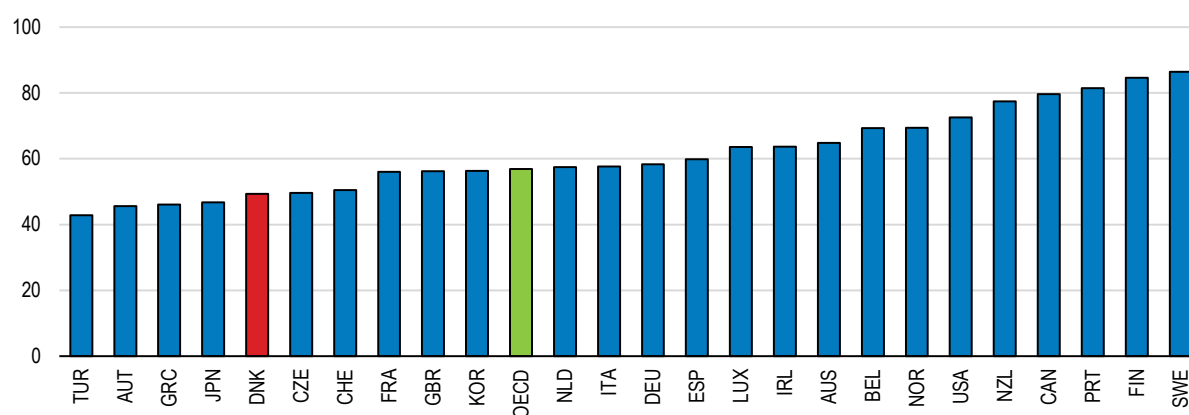
Generous grants for students play a key role in the length of studies at university. Students who have been resident in Denmark for long enough get free education and a generous living allowance of around USD 1000 per month while they are studying. They are also allowed to take a year of effective leave, with fewer courses, while still receiving their living allowance. Reform is underway, with the maximum grant to be reduced by one year to a maximum of five years. This should help encourage students to opt for a shorter education path, and reduce the prevalence of students who switch subjects, thereby delaying graduation. Nevertheless, the grant and loan system remains very generous by global standards and still higher than in other Nordic countries. A further reduction in support could be considered. This could include widening of the use of student loans, as in Australia or New Zealand, where repayment conditions are linked to subsequent income and labour market status over an extended repayment period, and as recommended by the Reform Commission for master's degrees. Such a reform could also enhance the incentives to choose educational fields in greater demand and with higher wages.

### ***Improving the integration of first and second-generation migrants***

Denmark has a comprehensive integration policy for foreign-born people focused on labour market participation, but there is scope for improvement. Implementation of integration policy is decentralised to the municipalities, which allows policies to be interpreted and adapted to local circumstances, but as highlighted in the 2021 *Economic Survey*, this has led to variable quality and success (OECD, 2021a; European Commission, 2021c; Jakobsen et al., 2021). The latest Migrant Integration Policy Index (MIPEX), which measures immigration policies across 56 countries and identifies links between those policies, outcomes, and public opinion, ranked Denmark 26th among OECD countries for its integration policies (Figure 21). Denmark was one of the few countries whose index worsened from the previous exercise (Migrant Integration Policy Index, 2020).

**Figure 21. There is room to improve policies to integrate migrants**

Quality of integration policies for immigrants, 0 = worst and 100 = best, 2019



Source: Migrant Integration Policy Index 2020.

Special allowances were made for Ukrainian refugees with the passing of the Special Act in March 2022. This law allowed Ukrainians to bypass the asylum system and speed up obtaining a two-year residency permit, alongside employment and social assistance. As of 31 July 2023, 37,942 Ukrainians had received residency permits under the special law, and 29,077 are registered as residing in a municipality. Once registered, Ukrainian refugees must take Danish-language classes and actively seek employment to receive around USD 800 per month as well as other social assistance, such as housing and health care. Residence is valid until 17 March 2024, with the possibility to extend for one-year only. Further extensions would require an application for asylum or a residence permit on other grounds. The Special Act is scheduled to expire in March 2025.

Municipalities see insufficient Danish language skills as one of the greatest barriers facing first-generation unemployed migrants (Jakobsen et al., 2021), including Ukrainian refugees, and Denmark's focus on integration through rapid employment can crowd out language learning (Damm et al., 2022b). Language skills are a prerequisite for integration into the local community and workplace, and the single most important determinant for labour market integration (OECD, 2021h). Studies have shown that language programmes are crucial to enhanced employment probabilities, and particularly in the longer-term where most effects are found to materialise (Arendt et al. 2021). The beneficial effects are also found to extend to the children of migrants (Foged, 2023). While Denmark's integration programme combines language learning with job training, evidence has shown that once a job is secured, the probability of engaging and finishing the language course is much reduced, damaging longer-term opportunities (European Commission, 2022). On average, refugees who secured a job within their first four years in Denmark were likely to be employed in jobs with very low language comprehension requirements. In 2022, refugees made up around 28% of all immigrants, although this was buoyed by the large number of Ukrainians. Only 31% of the foreign-born who moved to Denmark in 2021 started language lessons, although this may reflect the ability to use their English language skills. By contrast, in Sweden and Norway, education is more highly prioritised, and language learners receive financial assistance that is conditional upon course attendance and complementary with paid work (OECD, 2021h). Two to three times as many newly arrived migrants enter education compared to Denmark. Denmark should place a greater emphasis on language-learning as the primary pillar of its integration strategy. Municipalities should increase efforts to follow up on students who either do not take up the offer of lessons or drop out, and language centres should be empowered to do so as well. Denmark could also reconsider the rule that prevents the foreign-born from obtaining free language lessons after five years.

Foreign-born people living in Denmark for less than 9 of the last 10 years (from non-EU countries) receive integration benefits whose amount are lower than regular social assistance benefits, conditioned to the

participation to integration and activation programmes (Martisen, 2020). Past reforms reducing social assistance for migrants had a mixed effect on employment rates, but increased poverty risks (Dustmann et al., 2023). An increased work obligation of 37 hours per week will be introduced from January 2025 for migrants receiving cash benefits. The estimated effects of this measure on labour supply are subdued (250 full time jobs, Ministry of Finance, 2021) and implementation difficult and costly. Job centres have not been able to find adequate jobs, especially for people with weak attachment to the labour market, as they have been unable to support migrants to meet the current activation criteria. Furthermore, there is little evidence of the positive impact of imposing work requirements (European Commission, 2021c).

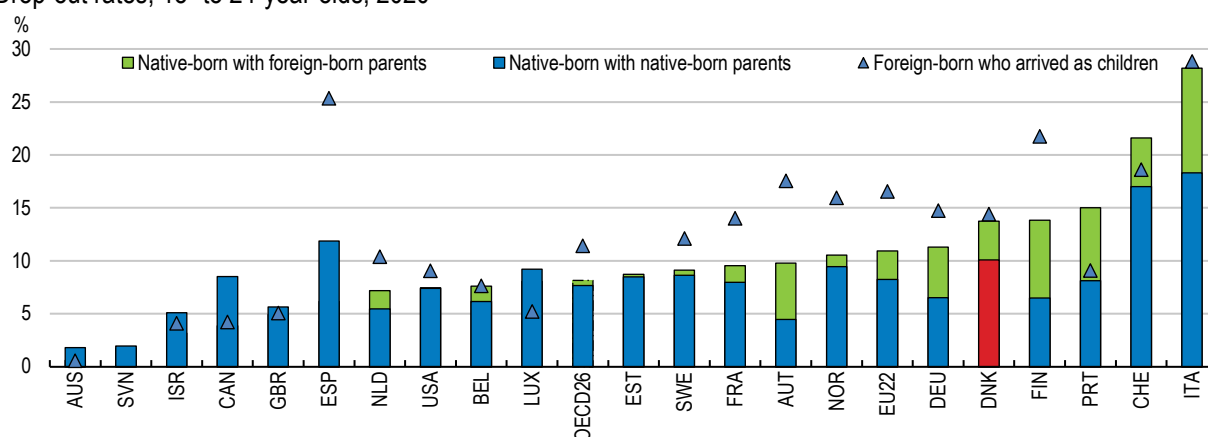
Most migrants obtain their qualifications abroad, but the limited transferability of these qualifications and skills restricts their labour market integration. Analysis by one of the larger Danish labour unions, *Faglig Fælles Forbund* (3F), found that half of those overqualified for unskilled jobs were migrants with higher education from their home country (Myklebust, 2021). Foreign qualifications, particularly those from non-OECD countries, do not have the same signaling effect as domestic qualifications, partly due to employer uncertainty and lack of information regarding foreign education and training systems, and (presumed) poorer-performing qualification systems abroad (OECD, 2017). The Danish Agency for Higher Education and Science offers assessments of all levels of educational qualifications. It specifies what a person's foreign qualification corresponds to in Denmark, which educational level and, if possible, which field of education. The assessment is free of charge and takes around 2 months once the required documentation is received. Early detection mechanisms could be fostered to identify individuals whose foreign-acquired skills and qualifications can be easily supplemented to provide formal qualification in fields where labour shortages are the most acute. The Netherlands, for instance, matches the level of education previously obtained in the country of origin with the Dutch requirements and indicates the number of additional courses needed to obtain an equivalent professional degree (OECD, 2023g). To assess non-formalised skills, obtained for example through work experience, Denmark could take inspiration from Germany and Austria where tools exist that can be used to assess competence. The German “myskills” assessment tool, for instance, uses online identification tests to assess various specific skills that can be transferred to the practical working environment (OECD, 2020b). Online platforms have great potential to facilitate matching, particularly for migrants, as they lack home country specific networks and social capital, but these platforms must be designed in a way that is both accessible and accounts for the specific challenges faced by migrants, employers, and public employment services.

Failures of integration can extend to the second-generation, and there has been a long-standing and substantial employment gap between children of immigrants and those with native parents (see Figure 8, Panel B), although this has recently improved significantly. On average, children born of immigrant parents are less educated, have higher unemployment rates, and earn around USD 9000 per annum less than those with native parents (Jensen and Manning, 2022). Second-generation migrants are often concentrated in certain neighbourhoods and schools which presents specific challenges and reduces chances of overall success (OECD, 2021f). Affordable, quality accommodation is a prerequisite for the successful integration of migrants and concentration of housing in certain neighbourhoods reduces their possibilities to interact with the wider community (Council of Europe, 2023). This poses a challenge for Danish housing policy given already existing housing shortages and the increased need for housing that has arisen from the inflow of Ukrainian refugees. Denmark introduced two national plans in 2018 and 2021 to prevent parallel societies, where the definition of a “parallel society” is linked to social housing areas with a high concentration of people from a non-Danish background, and certain criteria around high unemployment, low education, crime rates and low income. The plan imposed strict laws on the “parallel societies”, such as higher penalties on crimes and a strict social housing limit, which has led to resentment and potentially greater divisions among migrant populations (UNHCR, 2020). However, the plan also came with significant investment in the most challenged areas, such as developing the infrastructure of the area and renovating apartments. Addressing underlying issues could be more fruitful. Immigrant parents, for example, often find it difficult to enrol their children in the most appropriate school due to language barriers, resource constraints, or lack of knowledge of the country's school system (OECD, 2021f). Denmark could

take inspiration from the Netherlands which offers bus tours for parents to visit local schools to raise awareness and discuss enrolment options. Efforts to avoid the concentration of second-generation children from disadvantaged socio-economic backgrounds in the same schools is important, as this has been shown to have negative consequences (Jensen and Manning, 2022). The 2021 agreement on student distribution is thus a step in the right direction, as it directly considers parents' income for school admissions to ensure a mix of students from different backgrounds. Since free choice is maintained however, awareness and understanding by parents is still imperative. In addition, since natives may opt out of local schools when the proportion of immigrants is high (Brunello and De Paola, 2017; Nielsen and Anderson, 2019), any unintended consequences on a particular school, for example due to reduced funding from falling student numbers, should be monitored. Denmark could learn from Belgium which initiated publicity campaigns to encourage native-born parents to enrol their children in local schools with high concentrations of migrant students. Mitigating negative consequences through additional funding is also crucial (OECD, 2021f) as Danish schools have reported difficulties in integrating students of different backgrounds. In Switzerland, schools receive professional support and additional funding if more than 40% of their students are foreign nationals (excluding Germans and Austrians) or speak another language at home other than one of the official Swiss languages. An evaluation suggested the scheme improved the writing proficiency of students across all grade levels and increased positive outcomes in reading ability and the transition to secondary education and vocational training (OECD, 2021f).

**Figure 22. Second-generation migrants are more likely to leave school early**

Drop-out rates, 15- to 24-year-olds, 2020



Note: For countries of which the source is EU-SILC, the age range is 16-24. The youth aged 16-24 refer only to people living with their parents in the same households.

Source: OECD/European Commission (2023), "Integration of young people with foreign-born parents", in Indicators of Immigrant Integration 2023: Settling In, OECD Publishing, Paris, <https://doi.org/10.1787/26cffc70-en>.

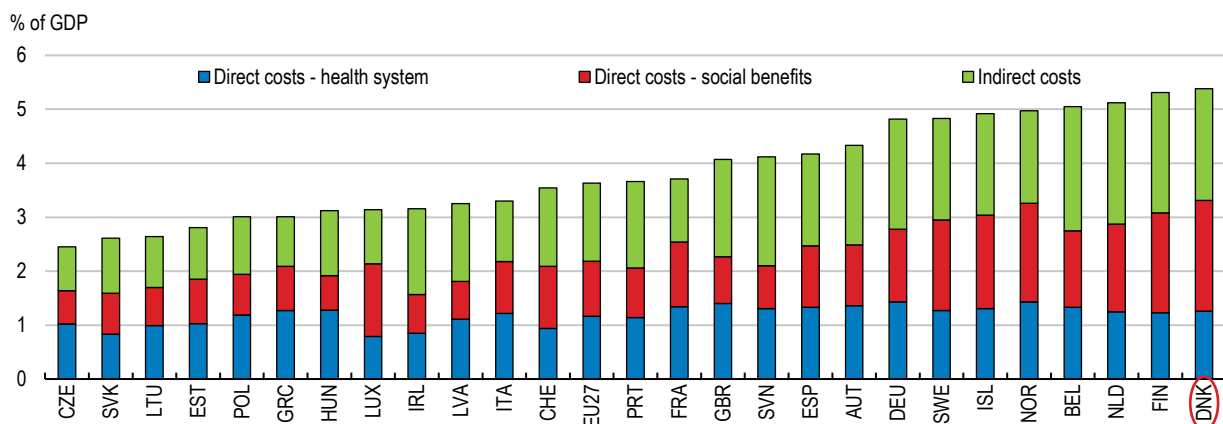
Second-chance programmes for school dropouts can help second-generation migrants who are more likely to leave school early (Figure 22). Denmark has a scheme that can help second-generation youths complete their education ("We need all Youngsters"), but this could be made more effective with a specific second-chance programme for youths that dropout, giving them an opportunity to catch-up. More effective programmes can help not only second-generation youths, but NEETs more generally, and reduce the number of individuals that move from scheme to scheme. Germany operates such a programme (the Joblinge) for those who are out of school. It trains mentors and connects young people to the labour market via a close collaboration between regional employers, individual mentorship and skills training programmes in order to find a vocational training place or job. Second-chance programmes can also combine studies with work experience which can be useful to address foreign cultures where labour market entry at a young age is common. Sweden, for example, introduced an education contract in 2015 to encourage unemployed youth (20- 24 years old) to return to adult education to gain an upper-secondary qualification. Increased financial aid was made available while offering greater flexibility to combine studies with work.

### Improving access to mental healthcare services

Denmark has a relatively high number of people reporting chronic depression and up to a quarter of young women experience poor mental health. Like in other OECD countries, mental health deteriorated during the pandemic and the number of mental hospital admissions has increased by 30% over the past 10 years. There are large regional disparities in access to mental health services, and the use of medication to treat anxiety and depression by primary care physicians has roughly doubled since 2000, with a stronger increase in use among the youngest (OECD Health Statistics 2021). Addressing the increasing prevalence of mental disorders, especially among young people, can help to improve well-being and ensure people with mental distress reach their full potential. Mental ill-health also weighs on economies. Before the pandemic, its economic costs were estimated at more than 5% of GDP annually in Denmark, more than in the OECD on average (OECD, 2021b). The employment rate gap between people with mental distress and those without is relatively large by international norms (26% lower). More than a third of these costs relate to lower employment rates and reduced productivity (Figure 23).

**Figure 23. Unmet mental healthcare needs have a significant cost**

Estimated direct and indirect costs related to mental health problems, 2015



Source: OECD (2021), A New Benchmark for Mental Health Systems: Tackling the Social and Economic Costs of Mental Ill-Health, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/4ed890f6-en>.

A range of measures have been taken in Denmark to improve mental health support, such as developing remote consultation services. Denmark stands out for having strong integration of mental health and employment services (OECD, 2021b). Individual placement and support (IPS) programmes that consist in a co-ordinated health and employment support for jobseekers with mental health conditions by multidisciplinary teams have resulted in positive employment outcomes (OECD, 2021c). Measures have been implemented at the workplace to support good mental health, such as awareness-raising campaigns. Nevertheless, mental health care services, especially prevention and early intervention, need strengthening to reduce unmet needs. Imposing mandatory mental health training for managers like done in some companies in Canada, or subsidies for small firms to offer stress checks like done in Japan, would be a step in the right direction (OECD, 2023d). The 2022 political agreement on psychiatry includes extra annual funding and binding targets to reduce waiting times among others. The government will allocate DKK 3.2 billion towards 2030 and will present a 10-year plan in 2024. Coherence and coordination of initiatives, which have been fragmented and sporadically implemented through temporary pilot projects in the past, will be key to the success of the plan. Clarifying responsibilities between hospitals and municipalities and creating single contact points for patients would ensure greater efficiency of service provision.

### **Removing barriers to full-time work**

Part-time work is commonly used in Denmark, with the incidence of part-time work above most OECD countries, including the other Nordics (Figure 9, Panel A). Women are more likely to work part-time than men. Although social institutions and cultural factors may play a role, Danish women often transition like in many other countries to part-time work after they become a mother. Women play the main role in primary childcare, which explains most of the remaining gender inequality in the labour market (OECD, 2019a). Family responsibilities are often given as the reason for working part-time, with around 60% of adults in Denmark believing that women with school-age children should work part-time (Kleven et al., 2018), broadly in line with the United States, the United Kingdom and Sweden. Reforms are needed to reduce barriers to women working full-time. Government plans to introduce better full-time opportunities for employees in the public sector are thus welcome. Nevertheless, maintaining the option of part-time and flexible working models is important so women do not drop out of the labour force. Publicity campaigns to inspire more women into full-time employment, including encouraging employers to expand the number of full-time contracts and talking to female staff about moving to full-time, as done in the Netherlands, could be envisaged.

Increasing flexibility in the provision of childcare services should be considered as recommended in past *Surveys* (OECD, 2019a; OECD, 2021a). Danish childcare services are comprehensive and have been shown not to be the key reason for choosing part-time work (OECD, 2023g). Day care places are subsidised for children from six months old. The costs of attending kindergarten are also relatively low, as the government pays at least 75% of the cost (more if household income is below certain thresholds). The 2020 and 2021 Budget Bill introduced statutory minimum standards from 2024 to improve the quality of day care, including introducing minimum staffing levels, removing the ability to profit for private care institutions, and extending funds for day care institutions working with vulnerable children and children in vulnerable positions. Nevertheless, there is need to expand the flexibility in the provision of childcare services, including extending opening hours. Childcare centres normally operate only within regular working hours, closing at 5pm or earlier, and on average each centre is closed about ten working days per year when demand is low, with alternatives and extended opening hours that parents could use limited (OECD, 2019a). Increasing the flexibility in the provision of these services would reduce the pressure on caregivers (preponderantly women) to take family-friendly jobs and work shorter hours, often implying part-time.

### **Improving skills to thrive in the demographic, digital and green transitions**

Raising the skills of those in work would help maximise the potential of the labour force and address labour market shortages. The demographic, digital and green transitions are transforming jobs and skills requirements, thereby complicating the matching between labour supply and demand. In Denmark, shortages are already prevalent in areas of work directly affected by these mega trends, notably ICT, long-term care, and engineering (McGrath, 2021). In Europe, more than one-fifth of companies face skills shortages for green and digital skills (EIB, 2023b). Addressing these shortages is key to ensure Denmark thrives in these transitions and requires an agile education and training system that adapts to fast-changing jobs.

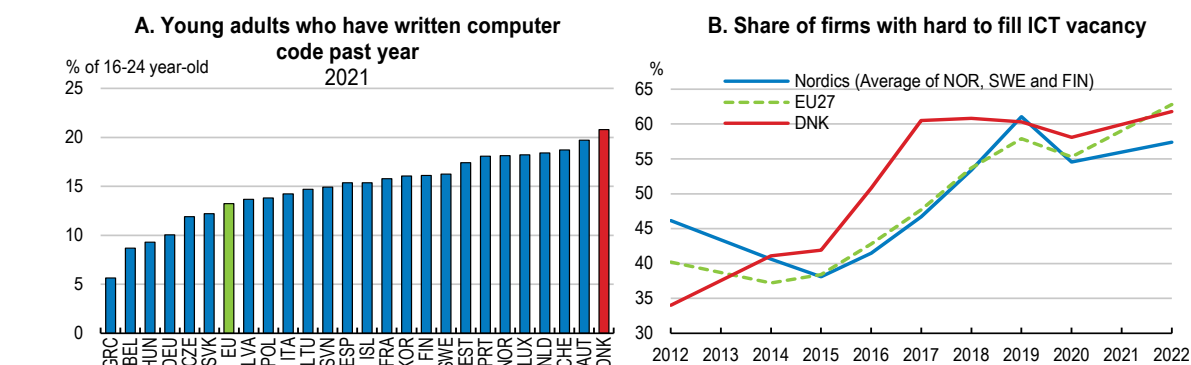
Ageing is changing the demand for goods and services in the economy, notably by increasing demand for public services, such as healthcare and long-term care. Public spending on health and long-term care is projected to increase by 0.9% and 3.4% of GDP respectively by 2070 (European Commission, 2021a). Labour shortages are projected to worsen in social and health services as recruitment needs will exceed available skilled staff (Danish Ministry of Finance, 2022). The number of students engaging in welfare fields has decreased in recent years (Ministry for Higher Education and Science, 2022). As for care workers, the

pool of workers available to occupy these low-skilled jobs will decline as the educational attainment level of the population continues to progress.

Large investment in the green transition over the next years to achieve greenhouse gas emission reduction targets is estimated to increase labour demand by between 290,000 and 380,000 employees aggregated over the period 2021-2030 (Green Power Denmark, 2020; Concito, 2020; Danish Workers Council, 2020). There is little evidence on the impact of the green transition on skills and job composition so far, but available analyses find climate policies increase demand for technical and high-skilled occupations (Marin and Vona, 2018). At the same time, employers' representatives have identified skills shortages as the biggest challenges for the transition and point to the growing demand for skilled workers, such as electricians or carpenters (Green Power Denmark, 2020). A lack of available skills (such as environmental planning and engineering expertise) is already hampering investment projects. In Europe, 70% of local authorities report that shortages prevent the implementation of climate change mitigation projects (EIB, 2023b). In 2022 in Denmark, labour shortages were reported for 60 occupations that required specific skills or knowledge of the green transition, including environmental engineers, environmental protection professionals and architects and online job advertisements in clean energy deployment have doubled, while only increased by 49% in the EU as a whole (European Commission, 2023a). More women could be recruited into green occupations, as they are currently underrepresented in green activities (ILO, 2019; Lander Svendsen et al., 2022, OECD, 2023b). The green transition will likely happen through the greening of activities and processes of a vast range of jobs and require raising understanding of "green" practices, such as energy saving or recycling (Botta, 2018).

Technological changes have shifted labour demand towards high-skilled workers (Autor et al, 2003) and the adoption of digital technologies requires a broad set of adaptative competencies. The Danish population has a high skill level, with some of the highest levels of educational attainment in the world. Danish students perform above the OECD average in reading, maths, and science (OECD, 2019a). Adults also outperform the OECD average in numeracy and literacy, as measured by the OECD Survey of Adult Skills (PIAAC), although not the other Nordic countries (OECD, 2019a). Skills shortages however are pronounced for digital and cognitive skills, as well as in the areas of sciences, training and education and medical knowledge (OECD, 2022a). While the Danish population has a high level of digital skills and programming competencies, recruitment difficulties in the ICT sector have plateaued at a high level (Figure 24). Adults with a degree in science, technology, engineering, and maths (STEM) earn about 1.3 times more in Denmark than the average graduate with upper secondary education, suggesting unmet labour demand in these fields (OECD, 2022b). Despite this wage premium, the Danish Society of Engineers expects there to be a shortfall of 6,500 engineering and 3,500 natural science graduates by 2025 (IDA, 2023).

**Figure 24. Despite strong digital skills, shortages in ICT skills have remained high**



Source: OECD ICT access and usage by households and individuals' database; and Eurostat (isoc\_ske\_itcrn2).

The digital and green transitions will result in an accelerated pace of job reallocations across sectors and transition costs, but Denmark is less likely to be affected than other OECD countries. Across OECD countries, more than 40% of current jobs will change significantly due to automation over the next 10 to 20 years (Quintini and Nedelkoska, 2018). The risk of job automation in Denmark, however, is estimated to be lower than in most OECD countries, partly reflecting the already advanced adoption of digital technologies and past outsourcing of low value-added activities (OECD, 2019a). The introduction of robots on the Danish labour market has not significantly reduced employment from 1996 to 2019 (Danish Ministry of Economic Affairs, 2023b). In the same vein, the overall job reallocation rates triggered by the green transition will likely be limited as the share of brown jobs in total employment is relatively low and jobs in polluting sectors are not geographically concentrated (OECD, 2021a). Estimates from the Danish Economic Council find that reaching the 2030 emission target by introducing a carbon tax would not reduce total employment, but would displace around 14 000 workers (DORS, 2022). Ensuring an efficient and equitable transition requires support to the groups most negatively affected by structural changes, especially by providing reskilling opportunities (OECD, 2019a; OECD, 2021a). The Danish flexicurity model, by offering adequate protection and income replacement as well as reskilling options, has proved effective in facilitating the integration of displaced workers following economic shocks and limiting the deterioration of their living standards after lays-off (Bertheau et al., 2022; Hummels et al., 2013).

### ***Anticipating future labour market needs***

Denmark has a comprehensive education and training system that performs well in a global context, but there is room for improvement relative to the very top performing countries. It has one of the highest rates of educational attainment in the world, with over 80% having completed upper secondary education and almost 40% of adults aged 25-64 having completed tertiary education. Participation in lifelong learning is relatively high in Denmark. One in three adults aged 25-64 take some form of continuing education course. Education spending accounts for around 7% of GDP, one of the highest in the OECD. Most education is government financed and free of charge, and students receive generous allowances.

Identifying shortages and anticipating future skills needs to link education, training and employment is crucial to adjust to the evolving job market. Skills shortages in Denmark coexist with graduates struggling to find job opportunities that match their qualifications, and the unemployment rate is higher in fields, such as arts and humanities, that do not have such close links to demands of the labour market (Reform Commission, 2022). This suggests that, despite the improvement in the matching of labour supply and demand over the past years, there is still some mismatch between educational fields and labour market needs. It is thus welcome that the forthcoming university reforms aim to establish closer links between education and the labour market, as well as a well-defined long-term plan for the institutional landscape.

Labour market needs are currently assessed using a variety of methods based on collaboration and dialogue between ministries, public authorities, and social partners. A combination of qualitative and quantitative methods is used to anticipate future needs, including quantitative forecasting, sectoral studies, employer surveys, and surveys of workers and graduates (CEDEFOP, 2022). The approach is, however, heavily based on a short-term horizon for budgetary reasons, to avoid the pressure for further investment in future education. It therefore does not sufficiently inform stakeholders about medium-term structural needs. A more forward-looking approach could be taken, particularly given the presence of innovative disruptive technologies and the emergence of new policy priorities.

More timely and agile skills anticipation exercises that can rapidly react to inform policy decisions in real-time are also needed. The Labour Market Balance is updated only every six months and the current process from identifying skill gaps to taking the relevant policy action, such as setting up new short-courses, is a lengthy 12-months in Denmark, which could be reduced to three months (OECD, 2023h). Government limits on how many students can be accepted for higher education courses also relies on past unemployment data, which may be slow to adjust to new trends. Denmark should make use of the latest



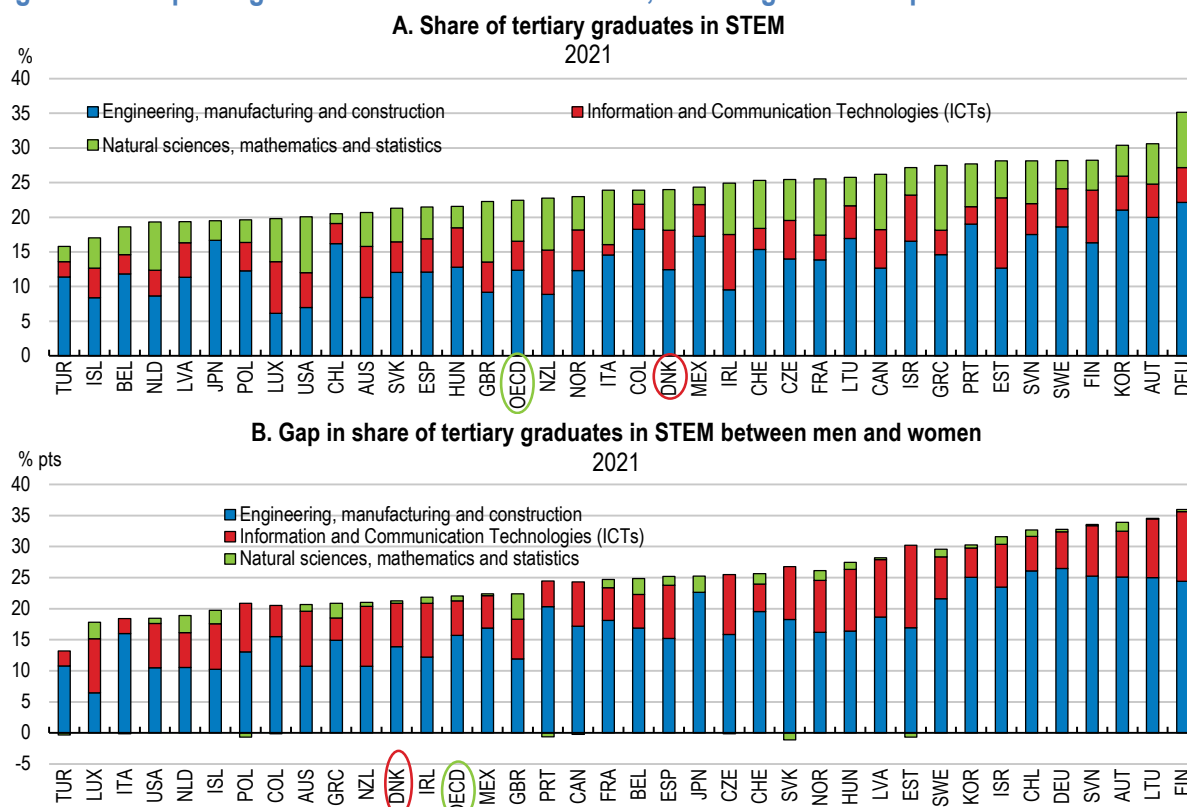
methodologies and data sources, such as increasing the use of big data, machine learning and artificial intelligence (AI). The UK and Sweden for example are applying machine learning to job adverts to provide a continuous and granular analysis of the skills required by employers. Belgium is developing an AI powered forecasting model to assess the impact of digitisation on the labour market and predict evolving skills needs.

Denmark should institutionalise mechanisms that translate such information into rapid policy action, such as the development of new training programmes or adapting curricula. Social partners are strongly involved in the design of curricula but mostly in relation to low and middle-level skills with the operation and design of VET provision, upskilling and reskilling programmes, and the adult apprenticeship scheme, delegated to the municipalities. In contrast, higher education institutions (universities, university colleges, and business academies) have a lot of autonomy to set curricula without reference to skills demand, although they are required to apply for approval of any new educational programme to ensure that the programme addresses a need within the overall educational portfolio. The government improves matching through a centrally defined ‘dimensioning’ model based on historic unemployment data. Since higher education is free, rather than market clearing through prices, the government determines maximum limits on the number of students that can be accepted into each field. These maximum enrolment limits are based on previous graduate unemployment rates, in particular two years after graduation, which proxy for the job prospects of a course (OECD, 2021g). Higher education institutions cannot exceed these enrolment limits and are not involved in the discussion. Denmark should consider creating a more coordinated approach, similar in spirit to a national education body in charge of analysing skills needs and coordinating medium- and long-term future skills policies, like in Australia, Norway, or Canada. Such an approach could provide valuable insights and expertise to inform and refine strategies for anticipating the skills requirements of the future labour market, and this could help coordinate education and training places across geography and educational institutions in a more unified way, so that the total offer reflects future needs.

### ***Increasing STEM education***

The share of science, technology, engineering, and mathematics (STEM) graduates is lower than in many other OECD countries (Figure 25, Panel A) and applications to STEM programmes were 6% lower in 2022 than in 2019. Denmark has enacted several initiatives to increase the number of graduates in STEM. As part of the 2020-2025 Digital Growth Strategy, the government aims to support and encourage STEM education through cooperation between businesses, educational and research institutions, and public sector operators. It aims at improving the marketing of STEM education and the process by which career and study choices are made, as well as strengthening the training of STEM teachers. DKK 15 million was allocated in 2018, followed by DKK 20 million annually from 2019 to 2022. DKK 43.4 million was also allocated to a project to improve the coordination of education and continuing education to support technological and digital skills. Several initiatives have showed some promising effects. For example, Danish universities have developed new machine learning and data science programmes, and established partnerships with elite American universities (such as MIT), to promote the exchange of PhD students and researchers. Equally, in primary schools, new optional subjects in technological understanding have been introduced and a new “Techie” children’s newspaper has fostered playful learning in science and technology.

Figure 25. Despite high demand in the labour market, too few graduates opt for STEM studies



Note: STEM (science, technology, engineering, and mathematics).  
 Source: OECD Education at a Glance database.

Denmark should continue to lift the supply of university study places in STEM programmes (including ICT) and allow greater access for foreign students. The government reached an agreement in 2021 to cut the number of university places available for courses in English to reduce the number of EU and EEA citizens who study in Denmark for free and receive the student allowance (obtainable either by working a minimum of 10-12 hours a week or after 5 years of residence). This entailed the closure of many English-taught degrees and led to a sharp drop in STEM admissions (since a number of STEM courses are English-taught), with higher education institutions having to reject suitable candidates, including Danish ones, as higher education institutions filled the maximum number of available places. This limit on English-language courses should be reconsidered to enable more students to take up STEM programmes. The recently announced agreement to allow universities to augment their enrolment of students in English-taught master’s programmes by 1,100 each year from 2024-2028, and by 2,500 from 2029 is welcome, but such expansion in capacity should also apply to bachelor’s programmes.

Denmark faces significant gender imbalances in STEM, although the share of women in STEM is close to the OECD average (Figure 25, Panel B). Only a third of university applicants for STEM related degrees are female, and this has remained unchanged since 2011. Evidence suggests the problem lies in the lack of interest of young women to study STEM (McKinsey, 2019), and studies suggest this segregation occurs early in life (Martin et al., 2014). This points to the importance of creating policies that target children when they are young, as these internalised stereotypes affect the way boys and girls evaluate their own abilities (Andersen and Smith, 2022).

Occupational gender segregation remains pronounced throughout Scandinavia, but Denmark is the only Scandinavian country that does not have legislation requiring primary and lower secondary schools to actively support gender equality, and a gender perspective is largely absent from the Danish national curriculum (KVINFO, 2023). Improving gender equity can enable better matching of activities to innate

abilities and interests, which can substantially increase productivity and economic growth (see Box 8). Teacher training and increased awareness of internalised beliefs could help to tackle gender biases, as could implementing legislation inspired by Nordic peers. Outreach activities and showcasing role models can increase girls' interest in STEM. Making female role models more visible, particularly at a young age, has been shown to be important to counter underlying stereotypes. Exposing young girls to mentoring from female STEM role models had a significant positive impact on their attitudes towards technology (Guenaga, 2022). Providing girls with the opportunity to interact with technology at the earliest age can also help change gender-specific perceptions (OECD, 2019a), and therefore the ambition to introduce a new subject called “understanding of technology” as part of a reform of primary and lower secondary school is welcome. In Italy, a coding course that targeted female middle-school students resulted in a 10% increased desire to become a computer programmer (Carlana and Fort, 2020). Technovation Girls, a global tech education non-profit that provides young girls (ages 8-18) with hands-on training in technology and runs a Silicon Valley competition annually, has been shown to inspire and empower young girls into technology.

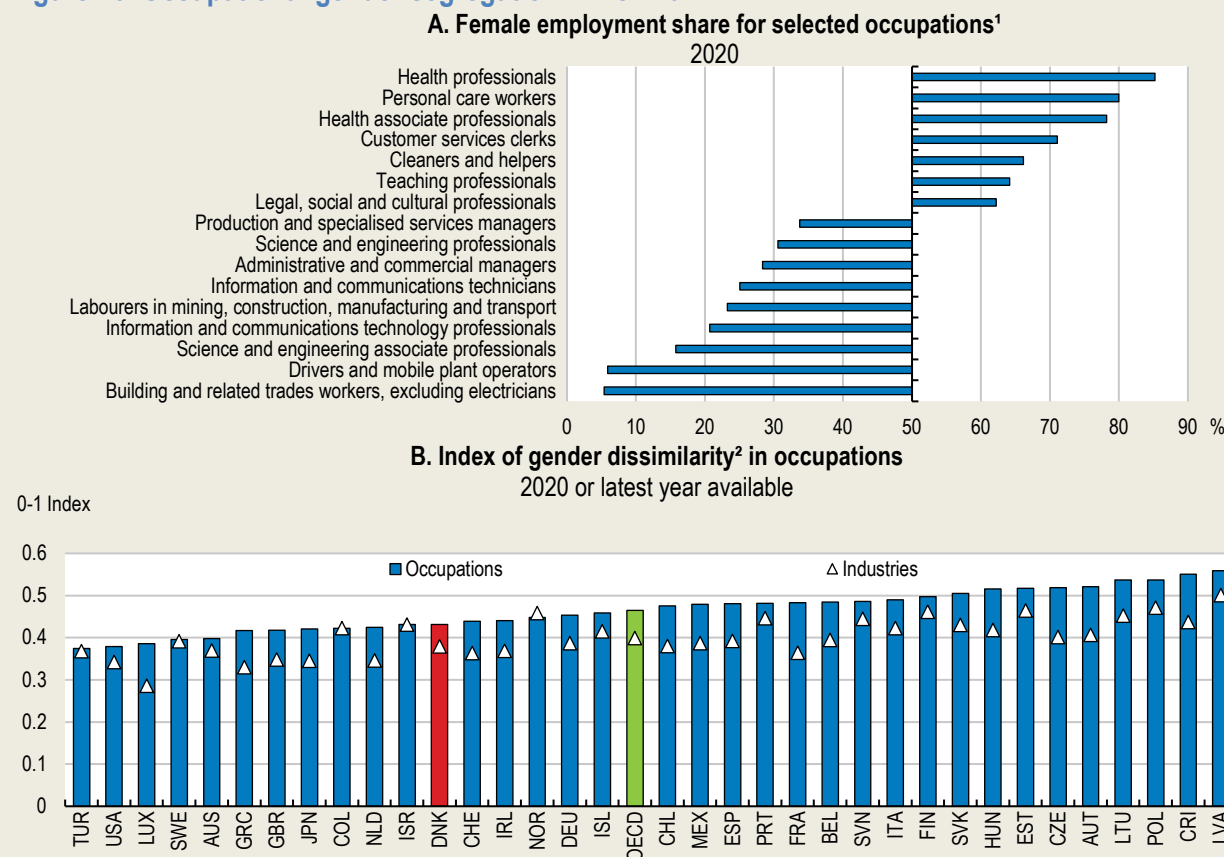
### Box 8. Occupational gender segregation

Occupational gender segregation refers to the tendency of women and men to work in different professions. Women tend to end up in lower paid sectors and are less likely to advance to management positions (EQUALIS, 2023). Economic costs to segregation include an inefficient allocation of labour and lower mobility between sectors and industries; a reduced recruitment base; underutilisation of labour and indirect perpetuation of the gender divide; and differentiated working conditions that can impact the working environment and the age of retirement (Bolvig and Kristensen, 2022). For instance, unemployed men have been shown to be resistant to applying to jobs that required them to perform “feminine” tasks (Yavorsky et al, 2021). By contrast, international studies find that a more equal distribution of women and men improves company performance through increased profits, higher productivity, and reduced volatility on return on capital (International Labour Organization, 2019).

Occupational gender segregation is pronounced in Denmark, although somewhat below the OECD average (Figure 26). The divide is also particularly pronounced across the public-private sector split. With gender segregation high in fields where demand is elevated and increasing, such as STEM and long-term care, understanding the reasons behind this segregation can help guide appropriate policy responses, improve mobility and a reduce bottlenecks in recruitment.

Denmark's 2023 action plan on gender equality acknowledges the issue of gender segregation in the labour market. A partnership between local governments and employee organisations has been tasked to uncover the underlying causes, including educational choices, with the aim of creating an ongoing debate and developing recommendations.

**Figure 26. Occupational gender segregation in Denmark**



1. Occupation (ISCO-08), 2-digit level.  
 2. In Panel B, the index of dissimilarity, or Duncan index, measures the sum of the absolute difference in the distribution of female and male employment across occupations or industries. It assumes that segregation implies a different distribution of women and men across occupations/industries: the less equal the distribution, the higher the level of segregation. It ranges from 0 to 1, from the lowest to the highest level of segregation. Here it was calculated using the ISCO-08 classification of occupations and the ISIC-4 classification of industries, both at 2-digit levels. For Australia, data refer to the previous ISCO-88 classification of occupations and the ISIC-3 classification of industries. For Israel and Italy, data refer to 2017. For the United Kingdom, data refer to 2019.  
 Source: ILOSTAT(EMP\_TEMP\_SEX\_OC2\_NB\_A); and Joining Forces for Gender Equality: What is Holding us Back?, OECD Publishing, Paris, <https://doi.org/10.1787/5a13854a-en>.

**Improving the quality and attractiveness of VET**

Vocational education and training (VET) can help to ensure that Danish students have strong skills and train in areas where workers are lacking, such as those related to the low-carbon transition, like electricians and heat pump engineers. Green activities employ 10% more vocationally trained staff than the country-wide average (CONCITO, 2020). The Danish VET system is very well developed and diverse, consisting of a basic programme and a main programme of two to five years alternating education at school and practical training. Around 38% of all upper secondary education students in Denmark are enrolled in VET, which is slightly below the OECD average of 42%. Among 15-19-year-olds, the share of student enrolled in VET is much lower (19% vs. 36% in the OECD).

VET graduates have the same high employment rates as tertiary graduates, yet there has been a steady decline in the number of students wishing to take VET over the last decade. The number of new students enrolled has declined from 2013 to 2021, leading to a sharp fall of 14% in the total number of students taking VET over that period, and a significant decline of 4.2 percentage points in the share of VET students.

This trend is predicted to continue, which will exacerbate an unprecedented drop in the total number of skilled workers as current workers retire.

Denmark should make vocational tracks more attractive to ensure the future supply of critical technical skills. Like in many OECD countries, vocational tracks have an image problem in Denmark, particularly amongst younger students. Large age gaps among students lead to a lack of social community, as the few students that choose VET straight from lower secondary are mixed with many adult VET students. This is a major factor mentioned by those who opt against VET (Reform Commission, 2023). The average VET student starts the basic course at an age of 24 years, and only 2 out of every 10 students go straight from lower secondary to VET. These large age gaps likely reflect both the difficulty young people have in seeing the value and opportunities available from VET which they only discover later, and the high participation rates of adult VET learning in Denmark. Getting insight into the specific vocational education and the industries with opportunities is difficult given the complexity and number of VET programmes in Denmark. Easier to understand, more well-known courses, such as hairdressing, education, and mechanics, have a lower average age and are among the VET courses with the highest proportion of under 18-year-olds.

Measures must be taken to better inform young students about their education and career options. Information is provided via the Ministry of Children and Education's website and via local schools' educational counsellors in lower secondary education, but more case-based teaching at schools and more visits to workplaces would help students make more informed choices. The Reform Commission recommended to make short internships (of a week or two) mandatory for all students in the last year of lower secondary education and to enable students to do more practical work one or two days a week to get real life experience early on. The recently announced reform of primary and lower secondary schools goes some way towards this. The reform plans to allow for a new option whereby students in lower secondary school can participate in practically oriented activities outside of school. The Reform Commission's recommendation to create a new alternative to high school for those that consider VET but are unsure about their choice, the Højere Praktisk Eksamen (HPX), could also go some way to improving VET attractiveness. This new two-year option would offer a more hands-on, practical education without closing the door to potentially a more academic education and have the same sort of social environment as other types of high school, and therefore could make VET more attractive to young people. However, it would increase time at school even further, which is already among the highest in the OECD (see Figure 20) and add to the already high complexity of the education system.

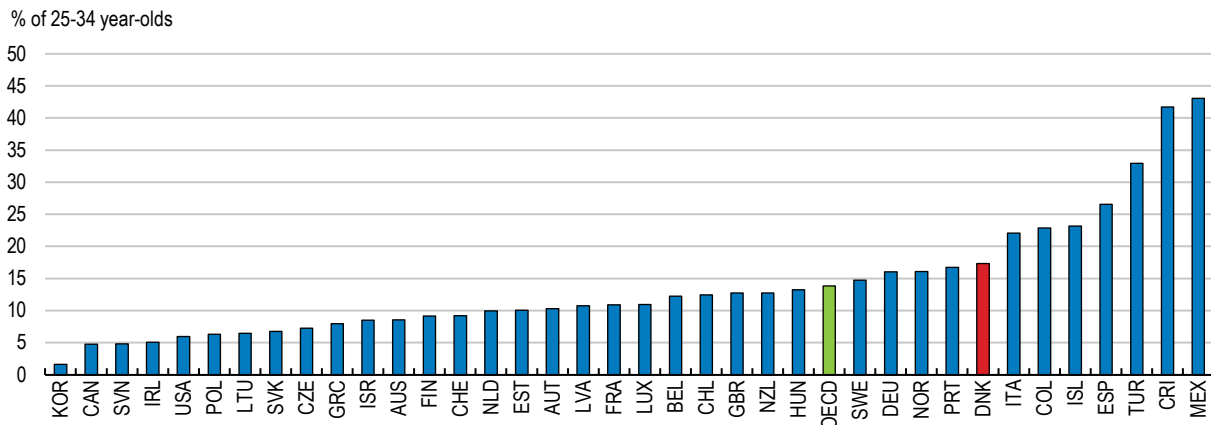
Mobility between academic and vocational tracks should be increased. Flexibility and permeability between tracks are limited: 2 years after the end of secondary education, only around 9% of VET students started higher education between 2015 and 2019, compared to 63% for those in general education. Upper secondary vocational graduates have direct access to business academy programmes (ISCED level 5) and some professional bachelor's programmes, but they do not have direct access to academic bachelor's programmes. Many Danish young students state they do not choose VET because they believe it "closes doors" (Reform Commission, 2023). This implies that those choosing VET are likely those that had no real prospect of attending university, but at the same time others are choosing university when they should have chosen VET. The EUX (Erhvervsfaglig studentereksamen i forbindelse med erhvervsuddannelse) vocational path, which allows participants to take the general upper secondary exam offers access to some higher education programmes, but increasing the attractiveness of VET requires multiple links between upper secondary VET and tertiary education. It is thus welcome that the forthcoming university reform commits to initiate a reform process in the future that aims to enhance the coherence and mobility between different educational levels and create multiple pathways into higher education. The introduction of the HPX may help permeability at the pre-vocational stage, but greater permeability is required at all stages to avoid the fear of closing doors. The government could draw from recent reforms in other countries. In Belgium (Flanders), schools are encouraged to organise programmes by domain across tracks. In this way, a "domain school" would offer all tracks across the fields of study. This structure then allows students to transfer from vocational to academic track easily (OECD, 2022f).

Dropout rates for students that start VET are high in Denmark, although they have declined over the last few years. In 2021, only 59% of students that started VET as initial education were expected to finish, which is much lower than the OECD average of 70% in 2020. Dropout rates are high for all students, not only for pupils with documented problems. A lack of suitable training placements in enterprises is frequently cited as a primary reason for learner dropout. Almost half of VET students do not have a training placement after completing the basic VET course (CEDEFOP, 2021), although the situation is improving for many courses as increasing labour shortages translate into increasing demand for apprentices (DA, 2022). This matches the fact that the dropout rate is particularly high at the end of the basic course and in the transition between the basic and main courses. Students with poor mental health are also more likely to drop out (Thøgersen et al., 2020), and this has been an increasing factor given the prevalence and rise of mental disorders among the young. The 2020 tripartite agreement between the Danish government and social partners provides DKK 119 million annually to help secure an apprenticeship contract for at least 80% of VET students before the end of the basic course. It also shifted the responsibility of obtaining an internship from the student to the school, with schools having a clear responsibility for reaching the goals set out in the agreement, and this is having a significant impact on securing apprenticeship places. A further DKK 80 million was allocated annually for higher reimbursement to companies when their apprentices are on a school stay. Increasing the wage reimbursement should help boost engagement of employers. Targeted financial incentives for firms to hire apprentices, especially for SMEs, could be considered in key areas, such as in Australia, which targets funding towards training costs in the care sector.

There is also a relatively high proportion of young adults with low educational attainment in Denmark and this negatively affects their ability to undertake vocational pathways. Around 15% of young adults do not finish high school or have a vocational qualification, above the OECD median (13%), and well behind leading countries such as the United States, Canada, and Korea (Figure 27). While not all are detached from the labour market, the percentage of youths neither in employment nor in education or training (NEET) has remained fairly stable over the last decade (7.3% of 15-24 year olds in 2012 and 6.7% in 2022). This low level of education negatively affects their career and capacity to adapt to changing skills requirements. Youth guidance programmes have been shown to be effective in reaching vulnerable populations and those who drop out or risk doing so (Youth in transition, 2021). The Danish municipal youth effort (Kommunal Ungeindsats (KUI)), established in 2019, is thus welcome. Municipalities are obliged to establish a coherent cross-sectoral measure on education and employment for all young people under 25 years. Those who are not in the process of or have not completed a vocationally qualifying youth education can receive guidance on education and jobs. Guidance can help young people navigate the labour market in a changing environment, challenge educational and employment norms embedded in individuals' choices, such as gender stereotypes, and broaden horizons. The "Forberedende grunduddannelse" (FGU), a new basic preparatory education introduced in 2019, also provides an opportunity to address underlying causes and prepare those under 25 to carry out either VET, other youth education, or enter employment. Denmark has ambitions to halve the percentage of NEETs by 2030, and for at least 90% of 25-year-olds to complete a general or vocational upper secondary education. The KUI and FGU can work in collaboration to address young people's needs, and progress should be carefully monitored.

**Figure 27. There is a relatively high proportion of young adults with low educational attainment**

Educational attainment, % of 25-34 year olds with below upper secondary education as the highest level attained, 2022

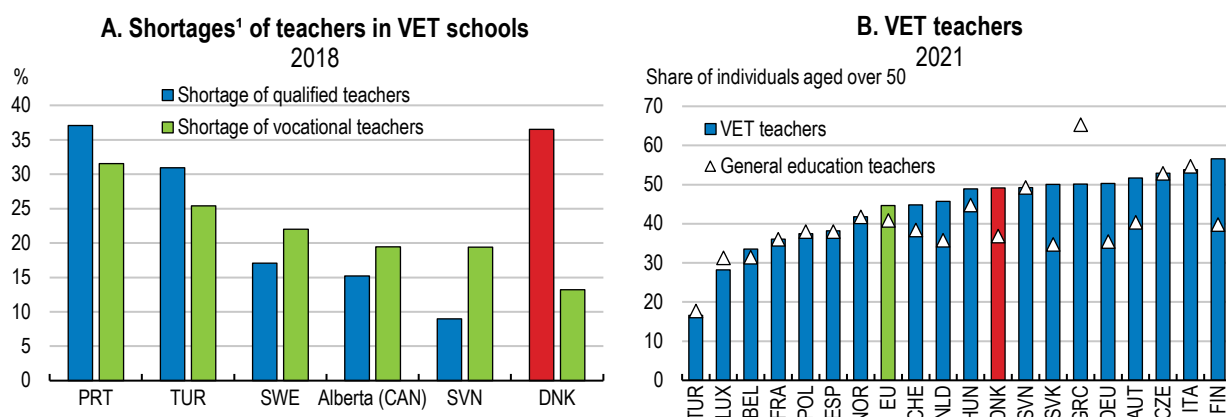


Source: OECD Education at a glance database.

Denmark faces a shortage of qualified VET teachers. In 2018, 37% of upper-secondary VET school leaders reported that shortages significantly hindered the capacity to provide quality education (Figure 28). Furthermore, Denmark has a relatively more pronounced ageing issue among VET teachers than other OECD countries and in general education (Figure 28). There should be a greater effort to expand the pool of candidates for the recruitment of teachers and hire practitioners, as they can ensure VET students acquire up-to-date knowledge (OECD, 2021i). In Germany and the Netherlands, mid-career entrants have access to shorter, tailored teacher training that helps them meet the pedagogical requirements without overbearing, lengthy and intensive preparation courses that can discourage entrants (OECD, 2022e). Relaxed entry qualification requirements could also be provided to graduates from higher education specialising in relevant subjects. Korea, for example, is planning to relax entry qualification requirements to meet rapid labour market demands in fields that either lack relevant teaching qualifications or training for VET teachers (OECD, 2021i). Allowing practitioners to teach part-time in schools can help with recruitment, particularly with digital skills which are in high demand. A flexible working schedule is the most reported reason for becoming a VET teacher in OECD countries (OECD TALIS data, 2018), but the share of part-time teachers is relatively low in Denmark.

Vocational courses should be modernised and adapt educational programmes to the latest technological developments. Emphasis should be placed on teacher development given the changing requirements of the modern workplace, including more formal ICT training. The newly established knowledge centres, which are collaborative institutions between VET colleges, other educational institutions, and regional professionals that aim to carry out innovation and research to use in practice, can help given their special emphasis on technology, digitisation, and skills for the green transition. Knowledge centres should support VET schools, such as through fund applications to acquire new technological equipment and engage in research to develop and test new ways of teaching and learning to improve VET education. Plans to allocate more funds to VET with the education reform are also welcome. Denmark allocated DKK 100 million yearly in 2021 and 2022 for improving green upskilling in the VET sector, and it will continue with an allocation of DKK 103.9 million yearly in 2024 and 2025 as part of the June 2022 political agreement on the green tax reform. The acquisition of digital equipment and competence development of teachers entails costs. Yet, state grants to vocational schools have decreased by DKK 3 billion from 2013 to 2022 because of the declining number of students. The earmarked digital equipment fund for VET should allow for greater investment into new technology.

**Figure 28. Reported shortages of VET teachers are high and likely to persist**



Note: Percentage of upper secondary VET principals reporting that teacher shortages significantly hinder their school's capacity to provide quality instruction. Upper secondary schools with VET programmes only (TALIS 2018).

Source: OECD (2021), Teachers and Leaders in Vocational Education and Training, OECD Reviews of Vocational Education and Training; and Eurostat (EDUC\_UOE\_PERP01).

### **Increasing participation in adult education**

Adult education and lifelong learning (LLL) can help individuals acquire new skills that are necessary to adapt to a changing workplace and job market, which is particularly important in an ageing population. Adult education is well established in Denmark. The share of workers in Denmark participating or willing to participate in adult education is among the highest in the OECD (Figure 29; OECD, 2021d). Continuing education is almost free of charge for employee covered by the collective agreements, with full or partial salary compensation (CEDEFOP, 2018b). Employers pay a contribution to the fund Uddannelsesbidrag AUB (Competence Development funds) to finance training. Relatively high participation of job seekers reflects the importance of upskilling programmes in Danish active labour market policies and spending per unemployed is very high (Figure 29, Panel B). A recent initiative to encourage training included paying unemployment benefit at 110% if education in shortage fields were undertaken.

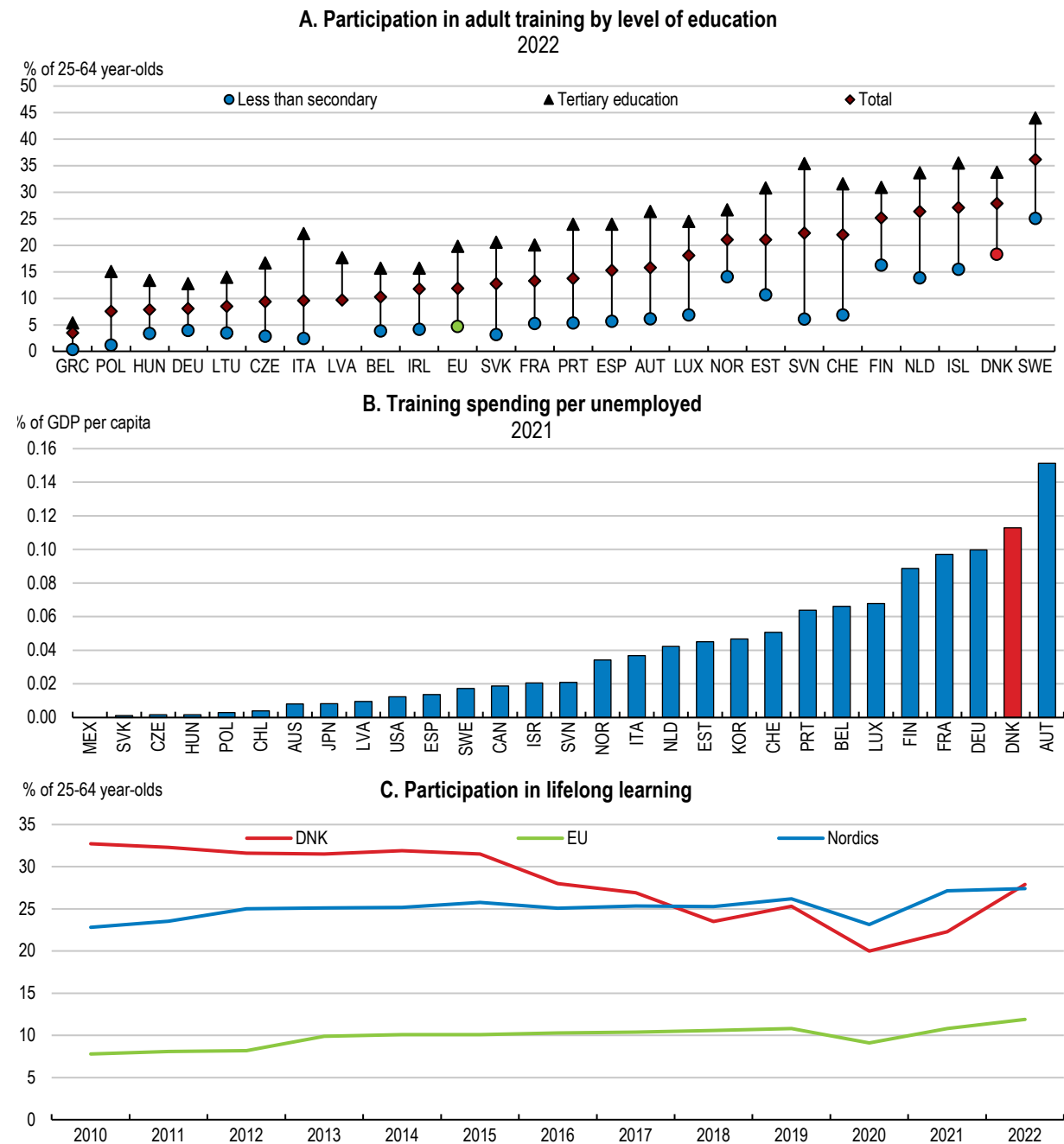
Denmark should target more public training funds to the low-educated and disadvantaged, with an emphasis on those vulnerable to changing labour market needs. The participation rate of low skilled adults is more than 15 percentage points lower than that of the high-skilled (Figure 29, Panel A). Adult education can serve as a route to reintegrate disadvantaged groups into a learning environment. It has a positive impact on employment and wages in the medium run, with greater effects on the low skilled (Bolvig et al., 2017). There should be a focus on reskilling those who work in vulnerable sectors. Employees in occupations where demand is falling were not more likely to have received continuing education than others, with those most exposed less likely to have received continuing education (Whitta-Jacobsen et al., 2019). Although green skills are increasingly in demand, the share of workers in energy-intensive industries taking part in education and training declined from 24.6% in 2015 to 15.6% in 2021 (European Commission, 2023b). The recent tripartite agreement, signed in September 2023, on adult and continuing education is a welcome move. It provides a sustainable financial framework for adult education and secures permanent new investment of approximately DKK 120 million.

Greater emphasis should be put on guidance services and on public awareness campaigns on the training options available, particularly for disadvantaged workers (OECD, 2021e). The Danish adult education system is complex and characterised by many schemes, special rules, administrative procedures, and temporary trial arrangements (STAR, 2018). As such, finding information on training opportunities is difficult, despite several information platforms (Reform Commission, 2022). Information is often fragmented across different documentations from different ministries and agencies. In 2018, the government



established a website for guidance and information on the possibilities to take part in adult education. Enhancing this by establishing an online portal of tailored training opportunities and certification history, like the recommendation by the Reform Commission, could help individuals further navigate the training system. Small firms often report that they do not have the resources to plan further education and training for their employees (EPINION, 2017). Guidance services, such as provided in France, should help support SMEs to define their training needs and advise on available financial support options.

**Figure 29. Participation in adult education is high, but could improve for low skilled workers**



Source: Eurostat (TRNG\_LFSE\_03); OECD Analytical database; and OECD Labour Market Programme database.

Participation in adult learning significantly depends on employers' motivation to offer time off for training. There is extensive support for training in Denmark, both through employer-funded, industry-level provided

courses, and publicly provided courses, but employee training is primarily linked to firms' needs. While training may be available, it must be approved by the employer, particularly if it requires time off to attend. Hence the firm must see a beneficial need for it. In a recent survey, over half of the companies questioned stated they did not provide further training as they saw no need for it (Damm et al., 2022a). High inter-sectoral mobility in Denmark also reduces firms' incentives due to the risk of losing an employee the firm has invested training resources into, especially for long duration courses, and creates imbalances in training opportunities depending on the company worked for. This opportunity cost of sending staff on training is likely higher for SMEs and when the labour market is tight, and suggests the need for increased collaboration among SMEs, such as training partnerships in networks.

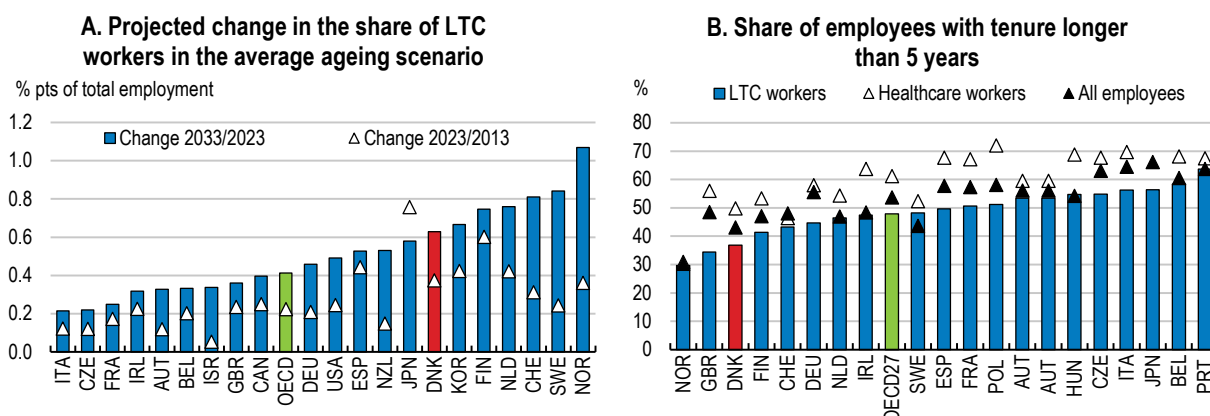
Moving training entitlement to the worker instead of the employer could also reduce barriers to take up and allow training rights to accumulate over time and across jobs, which can be useful when changing jobs, particularly given the relatively high labour turnover in Denmark (OECD, 2019b). In France, individuals are encouraged to take ownership of their learning via a credit scheme ("Compte Personnel de Formation") that enables spending on approved education and/or training. This is fully transferable throughout the individual's working life, with funds made available for individuals who are likely to have to change their job or employment status. Credits accumulate faster for the low skilled, and since the cost of training is also lower for low-skilled workers, this enables them to get more training. Individual training accounts should be accompanied by individual guidance on the choice of training programmes, being careful not to exclude populations with poor digital skills or access.

### ***Addressing recruitment difficulties in long-term care services***

Labour shortages in the long-term care (LTC) sector are a key problem. In 2020, the Danish care sector employed 91,398 personal care workers. But in the six months leading up to August 2022, more than 16,400 job vacancies were unfilled nationally within healthcare and personal care, according to government figures. Ageing and a declining supply of care staff is putting increasing pressure on the system both in the short- and long-run. Attrition rates are high and enrolment in social and health education programmes is below the level required. As part of the comprehensive reform plan for the higher education sector, DKK 200 million has been allocated from 2025, with annual increases to DKK 300 million from 2030, for programs in the fields of care and education to encourage more individuals to pursue careers in the welfare sector.

The ratio of care workers to over 65-year-olds has been falling since 2011 (OECD, 2023e). The tenure of care workers in Denmark is among the lowest in the OECD (Figure 30, Panel B), and labour shortages have increased since the pandemic. In an average ageing scenario, the share of care workers in total employment is projected to rise significantly (Figure 30, Panel A). It is estimated that Denmark will need around 50% more care workers by 2040 just to keep the current ratio of caregivers to the elderly population constant. However, developments in future technology, such care robots, could provide labour-saving technology and improved productivity. Denmark is preparing a 10-year plan to achieve an additional 10,000 equivalent full-time employees in the public sector via automation and digitisation (Ministry of Digital Government and Gender equality, 2023). In Japan for example, initial care robot programmes have allowed for shorter and more flexible working hours for staff (OECD, 2021j).

**Figure 30. More LTC workers are needed to keep the ratio of caregivers to the elderly population constant, but tenure in the sector is low**



Source: OECD (2023), *Beyond Applause? Improving Working Conditions in Long-Term Care*, <https://doi.org/10.1787/27d33ab3-en>.

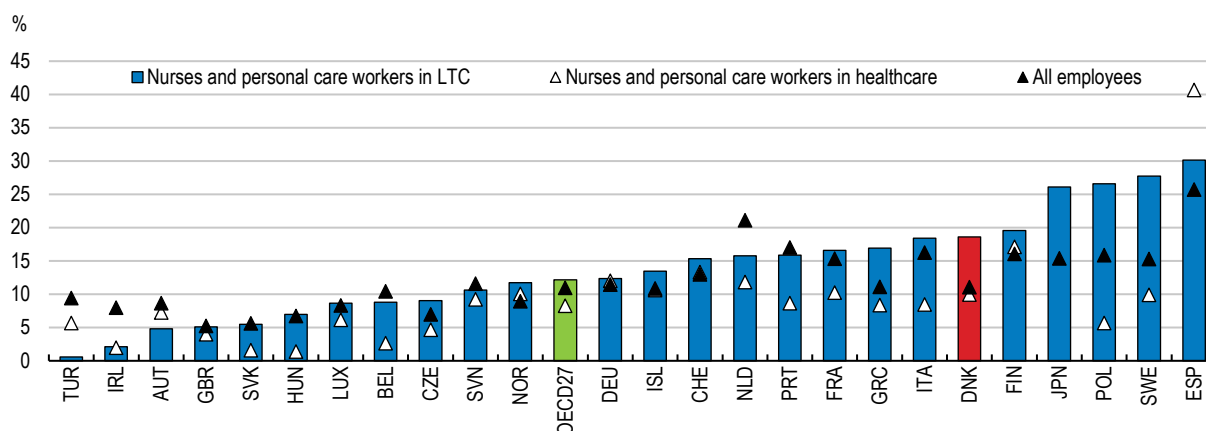
Pay and working conditions need to improve, within the collective bargaining framework, to attract and retain sufficient workers. Low pay and poor working conditions are prevalent in the care sector (OECD, 2023e), although care workers should benefit from the DKK 6.8 billion package of pay-related measures for the public sector that was recently agreed as part of the tripartite negotiations. Around 50% of care workers in Denmark report exposure to physical risk factors, and about 32% report exposure to mental well-being risk. While better than the OECD average, this lags best performing countries (OECD, 2020d). Social health workers in Denmark take on average 19 days of sick leave per year, which is significantly higher than the Danish average ('Denmark Can do more III'). Empirical evidence has shown that wage improvements in the United States and the Czech Republic had a positive impact on retention, while increasing allowances and benefits for LTC workers reduced turnover in Korea (OECD, 2020d).

Promoting a healthy and more supportive work environment to prevent workplace accidents and illness is essential. The share of Danish care workers reporting an accident sits above the OECD average (OECD, 2020d). The Danish government has ambitions to deregulate the care sector to reduce the heavy bureaucracy that can lead to emotional exhaustion and depersonalisation of care work. High levels of bureaucracy can lead to an unhappy work environment, where for example spending extra time with residents is penalised as bureaucratic efficiency dominates emotional care. To support care workers, Denmark could expand local municipal initiatives, such as SPARK, that provides free support on the psychological work environment. It could take inspiration from the Netherlands, which has developed nationwide coaching programmes for stress management to promote and support the prevention of accidents and burnout.

The type of employment contract is also important for attractiveness. The Danish care sector relies more on non-standard employment, such as temporary contracts, compared to the hospital sector, and more so than the OECD average (Figure 31). This limits career progression and increases job insecurity and unpredictability of hours. At the same time, Denmark is one of the few countries that promotes modular training and career development opportunities for care workers seeking access to managerial roles or for nurse aides wanting to become nurses. This is good practice as it presents career structure and recognition of prior experience and learning, something often lacking for care workers.

**Figure 31. The care sector often uses non-standard employment**

Share of employees on fixed-term contracts, 2020-21 or latest year

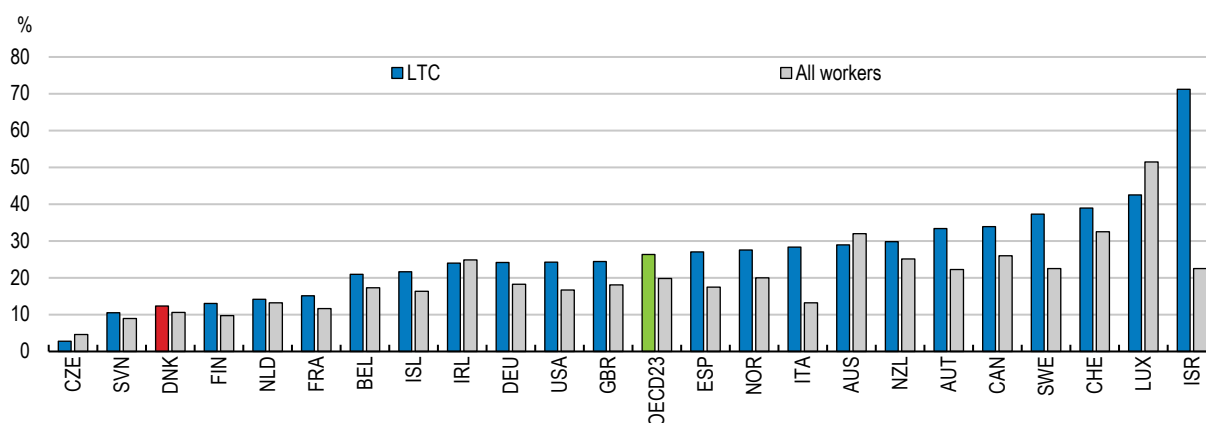


Source: OECD (2023), Beyond Applause? Improving Working Conditions in Long-Term Care, <https://doi.org/10.1787/27d33ab3-en>.

Efforts to widen recruitment in the LTC sector beyond the traditional pool and attract new workers is imperative. Recruiting foreign-born employees can alleviate labour shortages. Denmark currently lags other countries in the recruitment of foreign-born workers (Figure 32). Increasing the Danish recruitment of foreign-born care workers to the OECD average would lead to an increase in care staff of around 13,000. Foreign-born workers are usually young, highly skilled, often overqualified (The Global Ageing Network Leading Age LTSS Center, 2018), and work on average more hours than natives (OECD, 2020d). Denmark predominately hires from EU countries due to visa requirements. For example, Lolland municipality has begun an initiative to recruit care workers from Spain, with intensive language learning online. However, efforts could be expanded to recruitment from non-EU countries. The inclusion of social and health care assistants on the Positive list for Skilled Work, and the additional funding allocated to reduce processing times for foreign medical qualifications awaiting authorisation is welcome. The language criteria, which requires passing the Danish language test before entering employment, should be scrapped for non-EU LTC workers as was recently done for nurses.

**Figure 32. Denmark could recruit more foreign-born care workers**

Share of foreign-born workers among LTC workers, 2021



Source: OECD (2023), Beyond Applause? Improving Working Conditions in Long-Term Care, <https://doi.org/10.1787/27d33ab3-en>.

Care jobs suffer from a stigmatised image. This poor image is an important barrier to recruitment, especially for young people and for men who view these jobs as “women’s work” (OECD, 2020d). The previous

government implemented several initiatives to make it more attractive to become a care worker, including a salary while studying for students above the age of 25. Denmark should continue its attempts, such as *Flere hænder og større arbejdsglæde* in 2019, to change this image both to encourage students to choose care work as a profession, but also to encourage job changers to stay, so called “values-based recruitment”. For example, a UK campaign initiative (‘Proud to Care’) tried to improve the public understanding of care work, including through the improvement of information for those who provide social care career advice.

Incentivising male recruitment can also be a promising avenue. Evidence from the UK and the US suggest that men tend to stay longer and are more likely to work full-time and longer hours than women (OECD, 2020d). This could be influenced by self-selection: men who choose care work are perhaps more likely to have done so as a vocation and have stronger motivation. Nevertheless, efforts to change gender stereotypes are needed. Australia, for example, took steps to publicise stories of workers in non-traditional gender roles and reach out to university campuses and schools to break gender stereotypes. Norway was successful in motivating men into care work via a programme set up to recruit unemployed men aged 26-55 into the health and care sector. This involved guided training as part of the recruitment. Similar successful programmes have occurred in Germany and the United Kingdom.

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