

# Cancellation of Public Holiday in Denmark

Gohar Minasyan

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*IMF Selected Issues Papers* are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on June 1, 2023. This paper is also published separately as IMF Country Report No 23/228.

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**Cancellation of Public Holiday in Denmark**  
**Prepared by Gohar Minasyan**

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SELECTED ISSUES PAPERS

# **Cancellation of Public Holiday in Denmark**



# DENMARK

## SELECTED ISSUES

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Prepared by Gohar Minasyan with support from Fuda Jiang  
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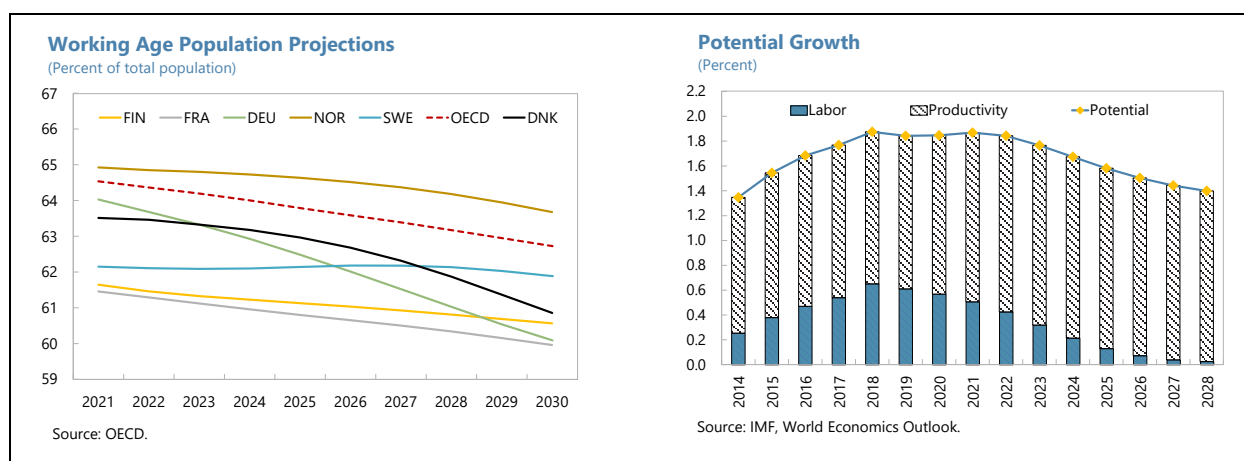
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# CANCELLATION OF A PUBLIC HOLIDAY IN DENMARK<sup>1</sup>

Denmark cancelled a public holiday to increase labor supply, GDP, and fiscal revenues. This chapter discusses the expected labor supply impact of this change and compares it to alternative options for increasing labor supply.

## A. Introduction

**1. Like many other advanced economies, Denmark is facing demographic headwinds, which pose a challenge to maintaining high rates of growth over the long term.** To tackle this challenge, increasing labor supply is seen as a policy goal.<sup>2</sup> In general, potential policies to increase labor supply could cover, on the extensive margin, higher labor force participation and lower structural unemployment, and on the intensive margin, increasing the retirement age and trying to tilt the labor-leisure balance in terms of overall hours worked, including annual holidays and personal leave days. On many of these dimensions Denmark has achieved very good results, in large part thanks to its successful flexicurity model. This, however, makes further gains difficult, forcing policymakers to look beyond conventional measures.



**2. The Danish government decided to cancel Store Bededag (Great Prayer Day) as a public holiday.** The decision was approved by parliament in February 2023 and will become effective in 2024. Store Bededag is celebrated on the third Friday after Easter, i.e. always on a weekday; therefore, its cancellation implies an increase in annual statutory working hours by 0.45 percent<sup>3</sup>. The tripartite agreement among the government, the employers, and the unions stipulates that employees with monthly salary contracts will get a 0.45 percent increase in their annual salary, while those with hourly contracts (accounting for about 20 percent of employment) will be compensated according to hours worked on the new working day.

<sup>1</sup> Prepared by Gohar Minasyan with support from Fuda Jiang (all EUR).

<sup>2</sup> The Danish Government, Denmark's National Reform Programme, May 2023.

<sup>3</sup> Annual working days after deducting statutory annual leave and other public holidays will increase from 222 to 223.

**3. Cancellation of a public holiday is a rare policy experiment.** Historically, the trend has been one of more leisure and less work: shorter hours, more annual paid leave, and more holidays. Some exceptions to this trend include declaring Pentecost Monday a “solidarity day” in France in 2004 and canceling four public holidays in Portugal in 2012 (that were reinstated in 2016).<sup>4</sup> In both cases, the policy changes were undertaken as part of a comprehensive package of measures, making it difficult to isolate the effects of the holiday cancellations. As countries try to find new ways to boost labor supply, GDP, and fiscal revenues in the face of declining working-age populations, Denmark’s initiative offers an interesting case study.

## B. Estimating the Expected Impact on Labor Supply

**4. Two complementary approaches are used in this chapter to estimate the expected impact of the cancellation of Store Bededag on labor supply.** The first approach, following the Ministry of Finance, uses the historically observed correlation between agreed and actual work hours in Denmark, and the second approach uses results from cross-country empirical literature on the causal effect of public holidays on economic growth. Since both approaches have advantages and drawbacks, their results provide a range of estimates for the expected impact of the holiday cancellation on labor supply.

### Using a “Norm effect” Estimate

**5. Correlation between statutory and actual work hours depends, in part, on “norm effects.”** In response to the cancellation of Store Bededag, hourly workers may choose not to work and be paid for an extra day. Those with monthly contracts may adjust their work hours or even take an extra “sick day” as a silent protest and, in the longer run, demand more annual leave days in wage negotiations. In practice, however, “norm effects”—i.e., the tendency to follow the rules and behave similarly to others—can play a role in determining individual decisions. This may be because of the benefits of “going along” and because transaction costs of adjusting behavior may not be worth it, especially when the change is marginal. Norm effects are shown to explain, in part, the high correlation between agreed and actual work hours in OECD countries.<sup>5</sup> Social coordination effects also may play a role, as the value of leisure can be higher when leisure time is coordinated with others.<sup>6</sup>

**6. While intuitive, norm effects are difficult to predict.** The Ministry of Finance estimates that the correlation between statutory and actual annual working hours in Denmark has been around 0.75 for the period since the 1980s. Based on this estimate, it predicts that the cancellation of Store Bededag (a 0.45 percent increase in statutory work hours) will result in a 0.34 percent

<sup>4</sup> On the other hand, several countries have introduced or considered introducing new public holidays for the purposes of stimulating consumption and growth, including China, Italy, and Hong Kong. See, for example, Ramasamy, et al. (2008).

<sup>5</sup> See, e.g. Causa (2009).

<sup>6</sup> E.g. Alesina et al. (2015) argue that the “social multiplier” explains part of the difference in working hours between the US and Europe.

increase in actual work hours. However, the norm estimates of 0.75 is based on historical data of continuous labor-leisure balance “improvement,” mostly as a result of collective agreements, which reflected, in part, the changes to preferences and other parameters affecting households’ work-life balance choices. Since the cancellation of the holiday is opposite to this trend towards more leisure and less work, it appears optimistic to expect that the norm effect would apply symmetrically.

## Using Results from Empirical Literature on Causal Impact of Public Holidays on Growth

### 7. Cross-country estimates of the causal effect of public holidays on economic growth can help gauge the expected impact of the cancellation of Store Bededag on labor supply.

Literature is scarce on causal effects of public holidays on work hours, however, a recent paper (Rosso and Wagner, 2022) that looks into the causal effect of public holidays on economic growth is relevant. By exploiting exogenous calendar variation (holidays falling on a weekend versus weekday), to identify the causal effect of holidays on growth, it finds a statistically significant working-day elasticity of GDP of around 0.2.<sup>7</sup> Mapping this result to labor supply using the labor share of 2/3 for Denmark, would imply that the 0.45 percent increase in statutory work hours due to cancellation of Store Bededag would increase actual work hours by 0.14 percent.<sup>8</sup>

**8. Two competing factors can be highlighted in applying Rosso and Wagner’s estimates to the case of cancellation of Store Bededag.** First, calendar variation, which Rosso and Wagner use, does not result in variation of wages, while in case of cancellation of Store Bededag, workers will be paid for the extra workday. This matters for the distribution of the extra value added between labor and capital. Since propensity to consume from labor income is likely higher than from capital income, the multiplier effect would be larger if workers are paid extra wages for the extra workday rather than if employers keep the extra income, resulting in a larger overall GDP impact.<sup>9</sup> Second, while calendar variation is transitory, the cancellation of Store Bebedag is permanent and, if households see this as a permanent deterioration to their labor-leisure balance, they may try to find ways to restore it. While these two factors work in opposite directions, in the near term the first effect will likely dominate the latter, implying that the labor supply impact of cancellation of Store Bededag would be larger than the estimate based on the elasticity from Rosso and Wagner of 0.14 percent.

<sup>7</sup> Rosso and Wagner (2022) use calendar data (holidays falling on a weekend versus weekday that transitorily increases or decreases working days for a year) and annual national accounts statistics that are not working day adjusted for a panel of 200 countries over 2000–19. Their estimates imply that a 1 percent reduction (increase) in statutory work hours due to calendar variation reduces (increases) GDP by 0.2 percent.

<sup>8</sup> Since labor share (i.e., labor compensation as a share of national income) is 2/3 for Denmark, a 0.2 elasticity of GDP implies an elasticity of labor supply of  $0.2 \times 2/3 = 0.3$ . This in turn implies that the 0.45 percent increase in statutory work would increase actual work hours by  $0.3 \times 0.45 = 0.135$  percent.

<sup>9</sup> Onaran, 2016 shows that the marginal propensity to consume from profit income is lower than the marginal propensity to consume from labor income for all G20 countries. Relatedly, Fisher et. al, 2020 (among others) show that the marginal propensity to consume is lower at higher wealth quintiles.

**9. Negative demand side effects are likely to be small.** The literature on the economic impact of public holidays often focuses on their effects on consumption.<sup>10</sup> Following Barrera and Garrido (2017), domestic tourism spending can be used as proxy for consumption related to a public holiday.<sup>11</sup> The share of domestic tourism spending in GDP in Denmark is relatively low (at 3.4 percent in 2019) compared to most country cases discussed in the literature in this context.<sup>12</sup> This suggests that the impact could be between 0.01 and 0.06 percent of GDP, depending on whether only the domestic tourism spending of Store Bededag (Friday) or of the whole long weekend is foregone.<sup>13</sup>

**10. In summary, the cancellation of Store Bededag is expected to increase labor supply by around ¼ percent (0.14–0.34 percent).** Using the historically observed correlation between agreed and actual work hours in Denmark gives an upper bound estimate of 0.34 percent for the expected increase labor supply, while using estimates from cross-country empirical literature gives a lower bound of 0.14 percent. Whether or not the long-term impact on labor supply will be smaller than the short-term impact, is ambiguous, because the factor of households finding ways over time to claw back the lost leisure may be compensated by the factor of the norm effect solidifying over time.

### C. In Comparison: Other Channels to Increase Labor Supply

**11. This section compares some alternative channels through which labor supply could increase by a similar magnitude as the cancellation of the public holiday.** The calibration of each of these channels – incentivizing longer hours worked, disincentivizing early retirement, and increasing employment of immigrants – is meant as an illustration and not as specific policy proposals.

#### *Incentivizing Longer Hours Worked*

**12. Relatively low average hours worked per employed in Denmark are reflective of social choice but would still respond to changes in marginal tax and benefit rates.** The average hours worked per employed in Denmark is around 34 hours per week, which is relatively low, even compared to other Nordic countries. Several factors contribute to this, including a higher prevalence of part-time work in general, more students combining study with work, and relatively lower hours for men, possibly linked to a more equal sharing of home responsibilities between men and women. Nevertheless, because of the relatively high employment rate, total hours worked per capita

<sup>10</sup> E.g. Ramasamey, et al. (2008) argue that public holidays help boost aggregate consumption. Relatedly, several studies, including East et al, 1993, Sugie et al. (2003), and Bhatnagar and Ratchford (2004) show that having free time is the most important contributor to shopping.

<sup>11</sup> Barrera and Garrido (2017) argue that there is an “optimal number of public holidays”, and this number depends on the ratio of consumption on domestic tourism related activities to overall consumption.

<sup>12</sup> Being a rich and small country, international tourism accounts for a relatively larger share of Danish households’ consumption.

<sup>13</sup> The simple calculation is based on  $3.36/52 = 0.06$  for the upper bound and  $3.36/365 = 0.01$  for the lower bound.



compare more favorably to peers than hours worked per employed.<sup>14</sup> This implies that work hours are more equally distributed among the population, which may be the preferred equilibrium for the society as a whole. Still, at the household level, labor supply elasticity to effective income is positive, which implies that tax and benefit policy can affect labor supply, both on the intensive and the extensive margin.<sup>15</sup>

**13. The government's recent income tax proposal aims at incentivizing more work and higher earnings.** The plan includes a reduction of marginal tax rates (except for very high-income earners) and an increase in the earned income credit. It is estimated to increase labor supply by 0.18 percent, slightly lower than the expected impact of the cancellation of the public holiday, at the cost of some deterioration of the Gini index as well as some fiscal cost. However, the government's proposal does not include any changes to the benefits system. IMF (2019) illustrated that the tradeoff between equity and efficiency could be improved by reforming the structure of marginal effective tax rates while maintaining the guaranteed minimum income (which is important for not compromising the highly dynamic and efficient labor market model of Denmark) in a revenue neutral way, leading to a 0.5 percent increase in labor supply, with a slight deterioration of the Gini index (from 0.203 to 0.216).<sup>16</sup>



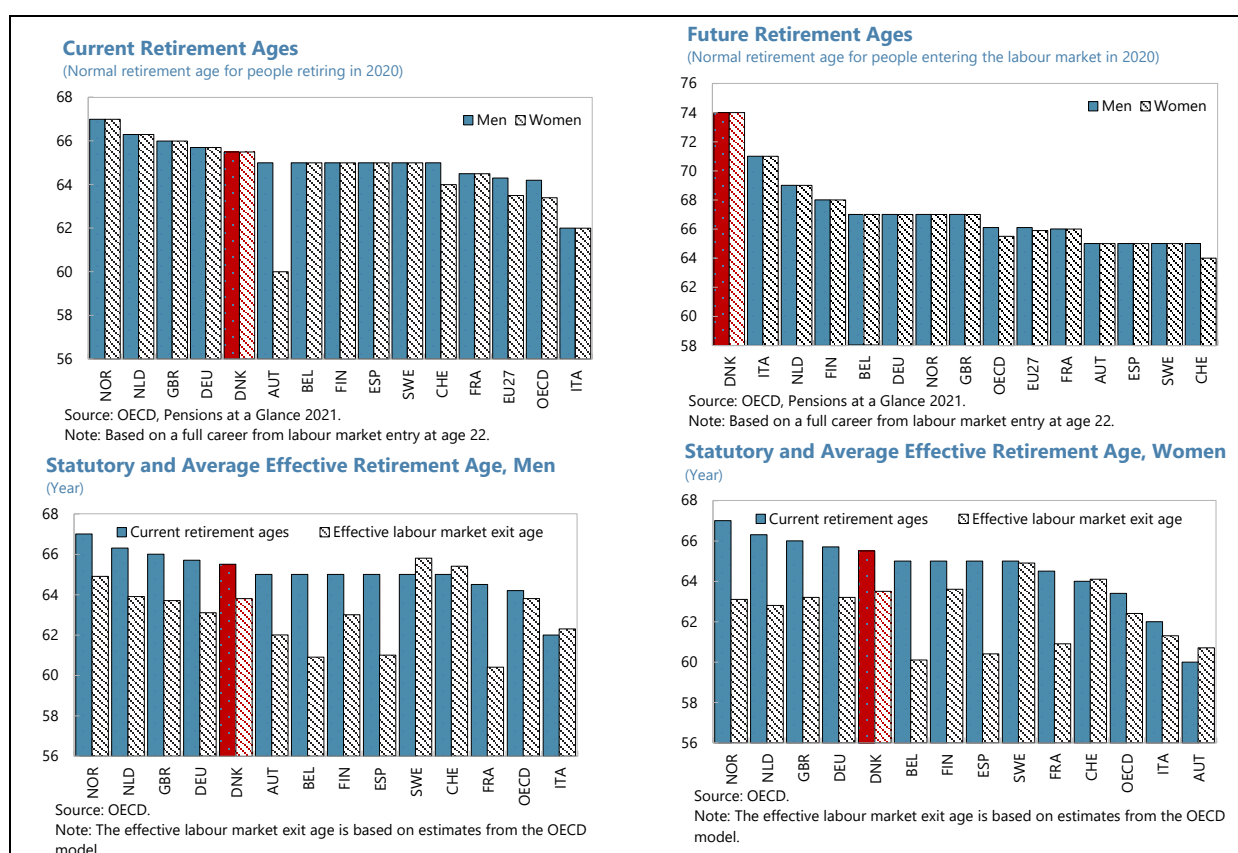
<sup>14</sup> See Weiskopf et al. (2018) and Denmark Ministry of Finance (2017).

<sup>15</sup> Bingley, P. (2018).

<sup>16</sup> See Annex I in IMF Denmark 2019 Article IV Consultation Staff Report. The analysis used household survey data, the OECD 2019 Tax-Benefit model, and estimates of hours (intensive) elasticity at 0.10 and average participation (extensive) elasticity at 0.20.

## Disincentivizing Early Retirement

**14. Tightening the conditions for early retirement would help push further the boundary on lifetime labor supply.** Denmark's ambitious one-to-one indexation of retirement age to life expectancy implies that its statutory retirement age, currently about average compared to European peers, will be the highest for people who entered the labor market in 2020. The actual to statutory retirement age difference in Denmark is also smaller than in most European peers (although larger than the OECD average), with the ratio of people who retire early to the total declining in recent years to around 50 percent. This declining trend should be maintained despite the rising statutory retirement age. The authorities are considering reforms to some of the early retirement schemes that should help achieve this. As an illustration, increasing effective employment by  $\frac{1}{4}$  percent (the estimated effect of the cancellation of the public holiday) would require reducing the ratio of people using retirement schemes from 50 percent to 48 percent.

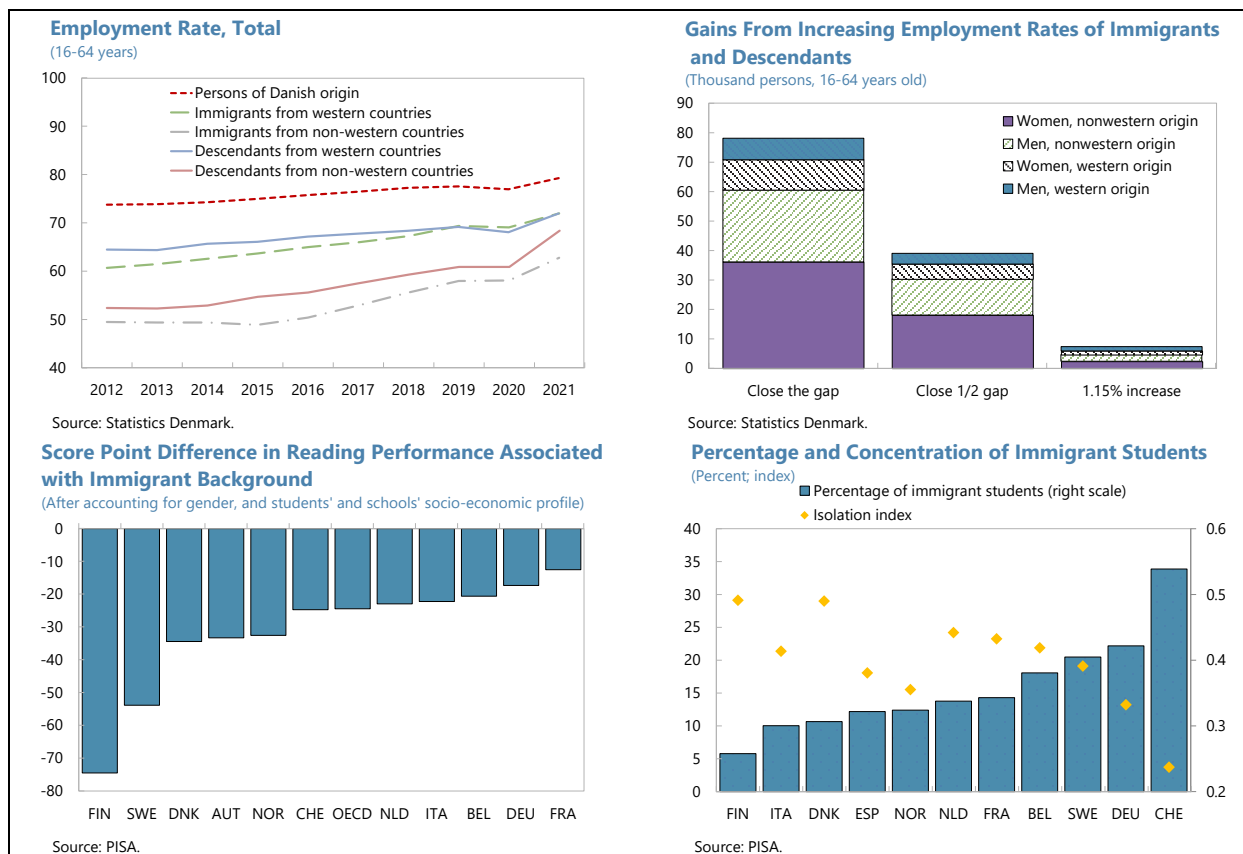


## Increasing Employment of Immigrants

**15. A relatively modest improvement in employment rates of immigrants and descendants would make a tangible gain to overall employment.** Employment rates of immigrants and descendants, especially those with non-western backgrounds, have improved in recent years, although significant employment gaps compared to persons of Danish origin remain (6–20 percentage points depending on immigrants' origin).<sup>17</sup> If all immigrants and descendants were

<sup>17</sup> Within each group, the gaps are higher for women than for men.

employed at the same rate as people of Danish origin, the total number of employed would increase by 2.7 percent, which may be an ambitious goal in the near future. However, as an illustration, increasing effective employment by ¼ percent (the estimated impact of the holiday cancellation) would require raising the employment rate of each of the immigrant or descendant group by 1.15 percentage points. This seems possible even in the near term, given that the employment rate of immigrants and descendant increased by 4 percentage points between 2019 and 2021.<sup>18</sup> While these recent improvements are largely due to cyclical reasons, as labor market tightness may have opened up opportunities for more immigrants and descendants, some of these gains could potentially become lasting as they help them get the needed job market experience and skills. In this respect, the government’s continued effort to support on-the-job training for new entrants into the labor market with immigrant backgrounds (of all ages) would help.



**16. To fully utilize the potential of immigrant labor, it is also important to close the gaps in education.** OECD’s PISA data for 2018 suggest that Denmark ranked relatively poorly in educational attainment gaps by origin and ancestry. This is correlated with the “isolation index” of children with immigrant backgrounds, which is relatively high in Denmark.<sup>19</sup> Some recent data,

<sup>18</sup> More recent data show that foreign nationals with wage income in Denmark, excluding those covered by the Ukraine Special Act, increased by 10.4 percent in 2022 compared to 2021.

<sup>19</sup> According to the PISA definition, the isolation index measures whether immigrant students are more concentrated in some schools. The index is related to the likelihood of an immigrant student to be enrolled in schools that enroll non-immigrant students. It ranges from 0 to 1, with 0 corresponding to no segregation and 1 to full segregation.

however, offer grounds for optimism.<sup>20</sup> Continuous improvement of educational outcomes of students with immigrant backgrounds will empower them to get a job with higher value added. Better integration of schools may need to be prioritized, as a recent study by the Ministry of Economy suggested, children who grew up in segregated areas have a lower probability of getting an education and participating in the labor market.<sup>21</sup> Further, while beyond the scope of this chapter, reducing isolation and improving the integration of children with immigrant backgrounds would help reduce parallel societies that challenge overall social cohesion.<sup>22</sup>

## D. Main Takeaways and Future Work

**17. The cancellation of the public holiday is expected to have a small positive impact on labor supply.** It is a rare policy initiative, making it difficult to estimate its expected economic implications. Nevertheless, based on recent cross-country empirical analysis on the causal effects of public holidays on economic growth as well as the historical correlation between statutory and actual work hours in Denmark, labor supply can be expected to increase by about 0.14–0.34 percent. In terms of magnitude, this effect is comparable to reducing the ratio of people using early retirement schemes by 2 percentage points or increasing the employment rates of different categories of immigrants and descendants by 1.15 percentage points each. A similar labor supply impact should also be possible to achieve through a revenue–neutral tax and benefit system reform.

**18. Efforts to explore alternative measures to increase labor supply should continue.** Thanks to its successful flexicurity model, Denmark has been able to achieve a well-functioning labor market characterized by high labor market participation and low structural unemployment. This implies that further efforts to sustainably increase employment may involve some policy tradeoffs that need to be carefully considered. In particular, reforming the tax and benefit system, tightening conditions for early retirement, and efforts to close the employment gaps of immigrants could be considered in terms of equity considerations, fiscal costs, impact on productivity, and ease of implementation, including political economy considerations.

<sup>20</sup> A recent study has found that performance of descendants from non-western countries after controlling for parents' education, employment and income has been improving in recent years and in 2020–21 even surpassed the performance of students of Danish origin: [https://kraka.dk/sites/default/files/public/analyse\\_-\\_betydningen\\_af\\_koen\\_og\\_herkomst\\_for\\_karakterer.pdf](https://kraka.dk/sites/default/files/public/analyse_-_betydningen_af_koen_og_herkomst_for_karakterer.pdf).

<sup>21</sup> Denmark Ministry of Economy (2018) (2).

<sup>22</sup> Denmark Ministry of Economy, (2018) (3) defines 8 indicators of parallel societies including: passive culture (long periods without employment or education), crime, and ethnic composition in residential areas, primary schools, and daycare centers.

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