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1. Introduction

1. As the European labour markets recover from the global economic crisis, promoting labour-market participation of people with reduced work capacity is becoming a priority in many EU and OECD countries (OECD, 2018_[1]) (European Commission, 2014_[2]). Tackling employment barriers among labour-market inactive groups is needed to ensure that the recovery benefits as many households as possible, and to sustain economic growth. Inactivity due to poor health also remains a concern for government budgets. Each year, nearly 2% of GDP is spent on disability and paid sick leave on average across the EU, more than on unemployment support.¹ Despite the increase in the number of unemployment-benefit recipients in the aftermath of the recent crisis, the number of disability benefit recipients has remained higher throughout.²

2. Individuals with reduced work capacity are not a homogenous group and they often face a range of employment barriers, including lack of work-related capabilities, low motivation or incentives and scarce job opportunities (Fernandez et al., 2016_[3]). The severity and overlap of these obstacles, combined with gaps in existing activation and employment-support policies, hinders stable and higher-intensity employment for this group, explaining why the employment gap with fully-capable individuals remains relatively high in many EU Member States (Geiger, van der Wel and Tøge, 2017_[4]).³

3. Inadequately low support for people with permanent or temporary incapacities raises concerns about poverty and social exclusion, especially in families with children or other dependants. At the same time, the design of disability benefits is one of the key factors that may impede claimants' return to work if the financial incentives from doing so are weak, e.g., if comparatively generous benefit payments are quickly withdrawn for those entering work. For those with partial work capacity, financial disincentives can be a particularly powerful driver of employment outcomes when disability support is a "passive" payment that, unlike unemployment benefits, does not require active steps towards re-employment. Moreover, if disability benefits are relatively easy to obtain, they

¹ In 2014, 2.4% (1.8%) of GDP was spent on invalidity (unemployment) benefits on average across EU Member States (most recent data from the OECD [Social Expenditure](#) (SOCX) database).

² The gap between disability and unemployment benefit recipient numbers is particularly large in some Eastern European countries including Poland, Slovak Republic, Hungary, Bulgaria and Romania, as well as in the United Kingdom, the Netherlands, Norway and Sweden. Data from the OECD [Social Benefit Recipients](#) (SOCR) database.

³ The OECD project '[Faces of Joblessness](#)' seeks to shed light on the web of individual employment obstacles that stand in the way of stable employment. In some Member States, health limitations and low work incentives stand up as particularly relevant employment barriers for selected subgroups of the working age population. See for instance, Browne et al. (2018_[12]) and (2018_[13]), Pacifico et al. (2018_[14]) and (2018_[15]), Düll et al. (2018_[16]), and Fernandez et al. (2018_[17]).

can be a potentially attractive income source for working-age individuals facing labour market difficulties that are not, or only partly, related to ill health.

4. This report presents new evidence on benefit generosity and work incentives for individuals with reduced work capacity. It accompanies output from a recent extension of the [OECD Tax-Benefit model \(TaxBEN\)](#) that has developed disability-benefit modules for 12 EU Member States: Belgium, Czech Republic, Denmark, Estonia, Finland, Hungary, Ireland, Lithuania, the Netherlands, Poland, Sweden and the United Kingdom.⁴ **Chapter 2** assesses household incomes and Net Replacement Rates (NRRs) for different types of families when individuals with reduced work capacity are present. It also compares the generosity of disability benefits with other types of out-of-work benefits, namely unemployment and Guaranteed Minimum Income (GMI) or social assistance benefits. **Chapter 3** estimates standard indicators of financial work incentives (Participation Tax Rates, PTRs, and Marginal Effective Tax Rates, METRs), to analyse how receipt of disability benefits shapes incentives to work at all, or to work additional hours. **Chapter 4** summarises the main findings.⁵

5. Two Annexes complete this report. **Annex A** describes the OECD tax-benefit model and the key assumptions made to calculate disability benefit entitlements. [A companion note](#), accessible online, provides a detailed summary of the disability benefits as simulated in the OECD tax-benefit model for the 12 Member States.⁶ **Annex B**, also accessible online, shows the full set of indicators that were produced as part of this project. Results are organised by indicator (NRRs, PTRs and METRs) and presented in different spreadsheets. The “overview” spreadsheets show the data presented in this report, with the full set of indicators available in separate spreadsheets (“NRRs”, “PTRs” and “METRs”). In addition, “chart” spreadsheets include interactive pivot charts that facilitate the visual inspection of the results for selected individual and household characteristics. Two final spreadsheets, “Policy Tables – Insurance” and “Policy Tables – Assistance”, include concise comparative summaries of the main characteristics of the disability benefit systems in the 12 Member States.⁷

⁴ While the OECD tax-benefit model is widely used for benchmarking and policy monitoring exercises across OECD and EU countries, families receiving disability benefits were generally outside its scope although disability-benefit modules were developed on an ad-hoc basis for a small number of countries and years, see for example (OECD, 2008_[9]), (OECD, 2006_[18]) and (OECD, 2007_[18]). The recent extension included these benefits more systematically, for a larger number of countries and refers to 2016 policy parameters.

⁵ The results are based on careful modelling of policy rules in each Member State. While every care has been taken to ensure that results are accurate, the model extensions are comparatively recent and some additional validation with country experts is ongoing. Updated results will be provided if model revisions are necessary as part of this process.

⁶ This note is an update of the report (OECD, 2018_[11]).

⁷ These tables are an updated version of the tables that have been provided to the European Commission together with the report (OECD, 2018_[11]).

2. Family incomes for recipients of disability benefits

6. This chapter examines the level of household income of people with different degrees of disability and compares the generosity of disability benefit schemes with other out-of-work benefits, namely unemployment and Guaranteed Minimum Income (GMI) or social assistance benefits. The measure analysed throughout this chapter is the Net Replacement Rate (NRR), i.e. net household income during a (hypothetical) disability-related out-of-work spell as a proportion of net household income during a (hypothetical) in-work situation. For somebody losing their job, the NRR can be interpreted as a measure of the portion of in-work income that is maintained while being out of work (see **Box 3.1** for details).

7. Considering the complexity and the number of disability programmes across EU Member States, the focus of this report is on two types of long-term disability schemes which cover a sizeable proportion of jobless working-age individuals in the selected Member States: i) disability insurance schemes, which provide contribution-based income-replacement benefits, and ii) disability assistance schemes, which provide tax-financed benefits.

8. To illustrate the functioning of key policy mechanisms underlying the main disability benefit schemes of the 12 EU Member States, as well as interactions with other types of benefits, this report shows results for the following scenarios:⁸

- Two levels of disability: the lowest possible level of severity needed to qualify for benefit support (henceforth, “minimum disability”) and a disability classified as the most severe (“maximum disability”).^{9, 10}
- Two employment histories: a scenario of a long and continuous employment record from the age of 19 until the age of 50, and, at the other extreme, a scenario without any previous paid work.
- ‘In-work’ earnings levels from 50 to 150% of the average wage.¹¹
- Four family types: a single adult without children, a single adult with two children, a single-earner couple without children and a single-earner couples with two children.

⁸ Individual characteristics refer to the first adult member. See Annex A for details.

⁹ In **Czech Republic, Hungary, Lithuania, the Netherlands** and **Sweden** there are intermediate gradations of disability that entail different levels of benefit entitlement. Results for these situations can be provided upon request.

¹⁰ It is important to bear in mind that the minimum level of disability necessary to qualify for benefits is not the same across Member States: countries assess incapacity for work in different ways so the “same” level of incapacity for work may qualify an individual for benefits in one Member State but not another. However, although results are not totally comparable across Member States due to these differences, they do reflect broadly similar situations.

¹¹ Variation by earnings will affect the numerator of the NRR, i.e. the ‘out-of-work’ income, only for individuals with a previous employment record, and only in those Member States where previous earnings enter the calculation of benefit entitlements. For those without any previous paid work, variation by earnings will affect only the denominator of the NRR, see Box 2.1 for details.

9. In all cases, results refer to a 50-year-old person with a permanent or long-standing incapacity to work.¹² Short-term sickness benefits, benefits designed to support those providing care to the incapacitated person, and benefits designed to compensate for disability-related costs or needs are outside the scope of this report.¹³ To compare the generosity of disability benefits with that of other types of out-of-work support, NRRs are also presented for otherwise similar out-of-work individuals with full work capacity, but who may be entitled to unemployment benefits and/or to GMI benefits.

Box 2.1. Indicators of benefit generosity

This report uses one common measure of benefit generosity, namely net household income during a (hypothetical) out-of-work spell as a proportion of net household income during a (hypothetical) in-work situation. For somebody losing their job, the NRR can be interpreted as a measure of the portion of in-work income that is maintained while being out of work. This indicator is referred to as 'Net Replacement Rate' (NRR). Formally, NRRs are calculated as follows:

$$NRR = \frac{y_{out\ of\ work}}{y_{in\ work}}$$

Where $y_{in\ work}$ is the net household income during a (hypothetical) in-work situation and $y_{out\ of\ work}$ is the net household income while being out of work. The report calculates NRRs for the following out-of-work scenarios:

1. Individuals *without* disabilities. Assuming a 'long and continuous' previous employment record and eligibility as applicable to unemployment benefits. A 'long and continuous' employment record means employment since age 19 until the age of 50.
2. Individuals *without* disabilities who may be entitled to GMI or social assistance benefits but not to unemployment benefits (e.g. because they have expired).
3. Individuals *with* disabilities, who may be entitled to disability benefits as applicable; In this case results are calculated for the following scenarios:
 - i. 'Minimum disability', i.e. the lowest-possible level of severity needed to qualify for benefit support in each Member State, and 'maximum disability', i.e. the level classified as the most severe.
 - ii. A 'long and continuous' previous employment record (as defined above) and, at the other extreme, the case without any previous employment record.

To enable a consistent comparison of different out-of-work scenarios on the net household income, the in-work scenario ($y_{in\ work}$) refers always to the net household income of a full-time employee without disabilities and with a 'long and continuous' employment record.

NRRs are calculated for four family types: single adults with / without children and couples with / without children. For couple families, the scenarios above refer to the 'first adult' whereas the

¹² Although the choice of focusing on a 50-year-old person depends on the typical age at which people would be in the situation of claiming disability benefits, it is important to mention that benefit entitlements and work incentives can vary greatly by age across Member States. For instance, there is large cross-country variation in the degree to which young people can claim disability benefits and in terms of specific rules for this group, which may even include a different disability benefit scheme altogether (e.g. in the Netherlands). In addition, considering the case of a 50-year-old person implies focusing on individuals approaching early retirement, and in some Member States claiming disability rather than early-retirement benefits can be an alternative retirement pathway depending on the characteristics of the two programmes. While early-retirement benefits are not simulated in TaxBEN, the new disability benefit module allows calculating disability benefit entitlements by age of the recipient, which can be particularly useful for the analysis of disability benefits especially in those Member States where entitlements are strongly related to the previous work history. Calculations by age are available upon request.

¹³ See also the section "Future development" in the Annex.

'second adult' is assumed to be out of work, fully-capable, and without eligibility to insurance-based benefits. Results refer always to 50-year-old adults and children (as applicable) aged 6 and 4.

Housing and social assistance supplements are assumed to be available in all the scenarios above, subject to relevant eligibility and income conditions. Benefit amounts are calculated during the 4th month of payment for the relevant out-of-work benefit.

The out-of-work / in-work incomes are calculated for previous / current earnings between 50 and 150% of the AW. Note that variation by earnings will affect the out-of-work incomes (i.e. the numerator of the NRR, $y_{out\ of\ work}$) only when the individual has a positive previous employment record and when previous earnings enter the calculation of benefit entitlements. Otherwise, variation by earnings will affect only the denominator of the NRR ($y_{in\ work}$), e.g. in scenario 2.

10. To facilitate country comparisons and presentation, **Figure 1** shows *average* NRRs calculated over four family types and two earnings levels (50% and 100% of the average wage). Results are examined separately for individuals without disabilities (grey bars), for those with 'minimum disability' (as described above, light blue bars), and for those with 'maximum disability' (dark blue bars).

11. In all Member States, net incomes of out-of-work individuals with 'minimum disability' and without any previous employment record are the same as those of fully-capable out-of-work individuals receiving GMI or Social Assistance (SA) benefits (**Panel A**). In **Belgium**, the **Czech Republic**, **Hungary**, **Ireland**, the **Netherlands** and **Poland**, the level of support for those without previous contribution is independent of the disability level, whereas in **Denmark**, **Estonia**, **Finland**, the **United Kingdom**, **Lithuania** and **Sweden** entitlements are higher for those with the most severe disabilities. The **Czech Republic**, **Hungary**, the **Netherlands** and **Poland** do not have a national Disability Assistance (DA) programme and therefore those without previous employment record claim SA benefits (see also **Table 2.1**). In **Denmark**, **Finland**, **Lithuania** and **Sweden** disability assistance is available only for those with the most severe disability level, whereas in **Belgium**, **Estonia**, the **United Kingdom** and **Ireland**, disability assistance is available also for those with less severe disabilities.¹⁴

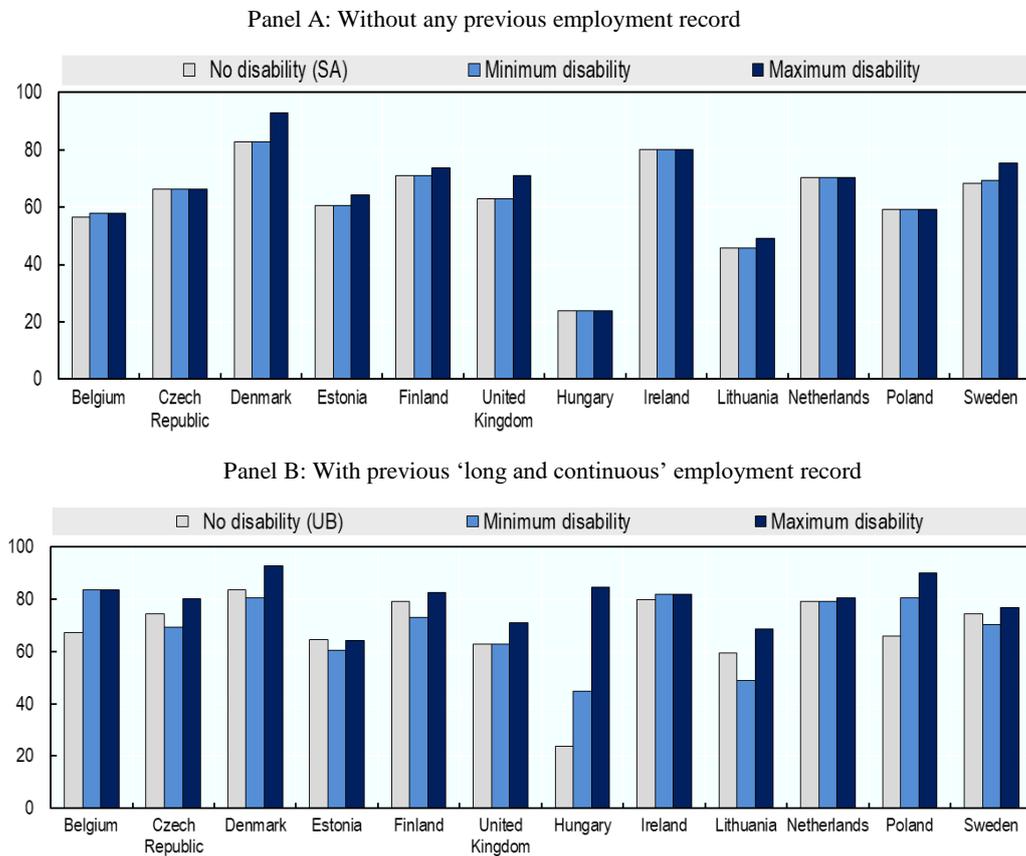
12. Out-of-work individuals with reduced work capacity and a 'long and continuous' previous employment record receive Disability Insurance (DI) benefits in nearly all Member States (see also **Table 2.1**). Exceptions are **Estonia**, which provides disability assistance but not a national disability insurance programme, and **Denmark**, where only those with 'minimum disability' may be entitled to disability insurance (the so-called Flexi-Job subsidy). In nearly all Member States, net incomes received by out-of-work individuals with 'maximum disability' and a 'long and continuous' previous employment record are always slightly higher than the net incomes received by out-of-work individuals with full work capacity receiving unemployment benefits (**Panel B**).^{15, 16}

¹⁴ In **Estonia** and the **United Kingdom** those with maximum disability and no previous contributions receive higher disability assistance entitlements compared to social assistance benefits, whereas in **Ireland** disability assistance entitlements are at the social assistance level regardless of the disability level. In **Belgium** disability assistance entitlements are slightly higher than standard social assistance amounts. In **Lithuania** disability assistance is available for those with medium disability level and, in case it has occurred before age 24, for lower disability levels. These cases are not covered in the report.

¹⁵ Results in Figure 1 refer to the fourth month of payment of the relevant out-of-work benefit. Results in Panel B assume the same long and continuous previous employment record for the case of 'no disability' (grey bars) and the case of minimum / maximum disability (blue bars).

13. By contrast, those with ‘minimum disability’ and a previous employment record have disability benefit entitlements that are more generous than unemployment insurance only in four Member States (**Panel B**). In **Belgium**, although maximum unemployment insurance benefits are lower than the maximum level of disability insurance, for those with lower previous earnings levels unemployment benefits are more generous. In **Ireland**, unemployment and disability benefit entitlements are similar, though unemployment benefit recipients receive slightly higher amounts in some family circumstances (see [Annex B](#)). By contrast, in **Hungary** and **Poland** disability benefit entitlements vary with the disability level and are always higher than unemployment insurance benefits. In the remaining Member states, i.e. the **Czech Republic**, **Denmark**, **Estonia**, **Finland**, **Lithuania** and **Sweden**, disability benefit entitlements for those with ‘minimum disability’ and previous employment record are similar to the social assistance amounts (Panel A), and are lower than those received by otherwise similar out-of-work individuals with full work capacity entitled to unemployment insurance.

Figure 1. Average net replacement rates by disability level, 2016



Note: The figure shows arithmetic averages of NRRs over four family types and two earnings levels: 50% and 100% of the average wage (see Box 2.1 for details). Variation by earnings affects the numerator of the NRR only if the individual has a previous employment record and only in those Member States where previous

¹⁶ The only exception is **Estonia**, where the main earnings replacement for those with reduced work capacity is a flat-rate disability assistance benefit, which is not linked to previous contributions. This entails slightly lower disability benefit entitlements relative to unemployment insurance for those with previous employment and higher previous earnings.

earnings enter the calculation of benefit entitlements, in the other cases variation by earnings affects only the denominator of the NRR (see Box 2.1 for details). ‘SA’ refers to the case of a fully-capable individual receiving as applicable GMI or social assistance benefits. ‘UB’ refers to the case of a fully-capable individual receiving as applicable unemployment benefits. ‘Minimum disability’ refers to the lowest-possible level of severity needed to qualify for benefit support in each Member States, ‘maximum disability’ is the level classified as the most severe. ‘Long and continuous’ employment record means the individual has been in employment since age 19 until the age of 50. Annex A describes the methodology for calculating disability benefit entitlements. [Annex B](#), accessible online, shows the full set of NRRs calculated as part of this report. Source: OECD calculations using the [OECD tax-benefit model](#).

14. In most of the 12 Member States the length of the past employment record does not affect the level of benefits received so long as the claimant was in work in the period immediately preceding the onset of the disability, which can be up to five years (in **Ireland**). However, in four of the Member States, namely the **Czech Republic, Finland, Lithuania** and **Poland**, benefit amounts depend on the earnings made throughout the claimant’s entire career (or long-term working history), and so time spent not working affects the amount received, no matter when it occurred.¹⁷ **Box 2.3** shows that in **Poland** and **Finland** career breaks can have a significant impact on net household incomes for disabled individuals, especially if these breaks were periods of economic inactivity where no social security contributions were credited. The effect of career breaks on lower out-of-work incomes is more pronounced when lower disability benefit entitlements are not or are only partially compensated by other forms of income support, such as housing or social assistance supplements.

Box 2.3. How do incomplete careers affect disability benefit entitlements?

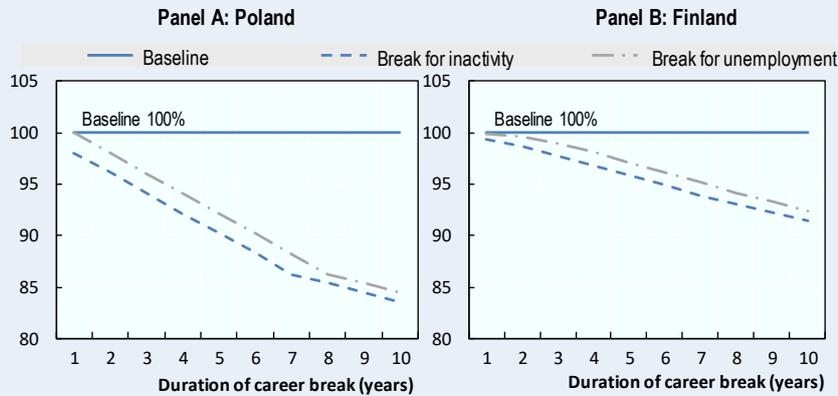
This box illustrates the impact of shorter and more fragmented careers on disability benefit entitlements in **Poland** and **Finland**. Two types of career interruptions are considered: economic inactivity and unemployment. The former can be considered a lower bound scenario as no additional disability benefit entitlements are earned during periods of economic inactivity. The latter shows how credited periods of unemployment in both countries moderate the negative effect of career interruptions on disability benefit entitlements.

In line with the approach described in OECD (2015^[5]) for modelling career breaks, results in this box are based on the following three assumptions: i) career interruptions began at the age of 35; ii) during the unemployment phase jobseekers first receive unemployment insurance and then unemployment assistance benefits as applicable; iii) the duration of the unemployment insurance benefit is equal to the ‘standard’ maximum duration of the main unemployment insurance programme, i.e. one year in **Poland** and two years in **Finland**.^a

Figure 2 shows the main results from this exercise. Each year of economic inactivity reduces the net income during a subsequent disability benefit spell by about 1.6% in **Poland** (Panel A) and by 0.9% in **Finland** (Panel B). This effect is mitigated if the individual received unemployment benefits during the career break (grey line): credits for those receiving unemployment benefits mean that short unemployment spells of up to a year do not affect disability benefit entitlements. Also, in **Finland**, pensioners’ housing benefit further limits the extent to which time spent not working affects the level of net income received during a subsequent spell of incapacity for work: lower entitlements to disability benefits are partially offset by higher entitlements to means-tested housing benefits.^b

¹⁷ In **Sweden**, benefit levels depend on the three years with the highest earnings during the last 5-8 years before the onset of the disability, so Sweden can be also considered among this group.

Figure 2. Impact of career breaks on disability benefit entitlements, 2016
 Net income of a single person with maximum disability as a % of the baseline (no career breaks)



Notes: The baseline denotes the net income of a single 50-year-old person with full disability who worked continuously from the age of 19 until age 50 with earnings at 100% of average wage.
Source: OECD calculations using the OECD tax-benefit model.

- a. See the online [policy descriptions](#) for details.
- b. In both countries the gap between the two dashed lines decreases for longer career breaks. Yet the mechanism behind this effect is country specific. In Poland, this is due to somewhat faster accumulation of hypothetical contributions periods (projected until pension age) in the economic inactivity scenario. In Finland, the slight reduction of the gap is due to progressive taxation of disability benefits, hence lower tax in case of inactivity.

15. In nine of the twelve Member States, disability benefit entitlements depend on previous earnings levels, at least in part, whereas in the other four Member States entitlements are entirely or almost entirely flat-rate (see also **Table 2.1**). Figures 3 to 5 show NRRs calculated for earnings levels between 50 and 150% of the average wage.¹⁸ Member States are split according to how disability benefits are calculated in relation to previous earnings: **Figure 3** shows results for Member States with (mostly) flat-rate benefits, **Figure 4** considers Member States where benefit entitlements depend on previous earnings but not on the entire previous work history, and **Figure 5** provides results for those Member States where benefit entitlements depend on the entire previous work history (so-called “pension-type” benefits). Note that some lines overlap and thus are not visible on these three figures. For instance, in line with the information provided in **Table 2.1**, the line showing NRRs for those without any previous employment record and ‘minimum disability’ (red line) overlaps always with the line showing NRRs for social assistance benefit recipients (yellow line; see the notes to Figures 3-5 for details).

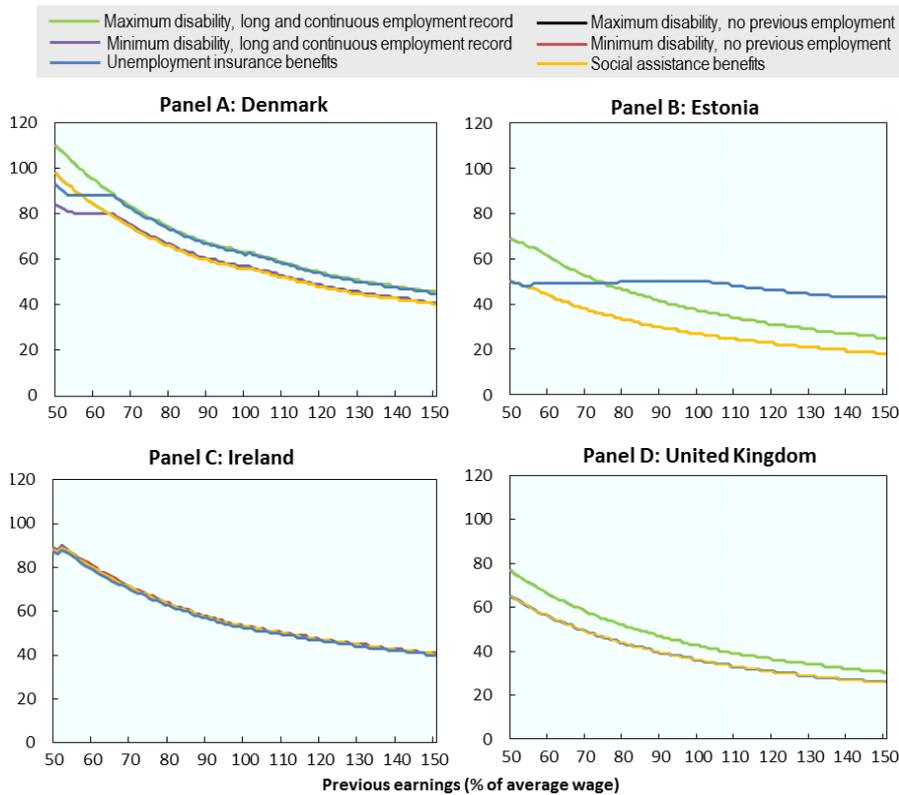
16. In Member States where disability benefits are (close to or entirely) flat-rate, NRRs decrease quickly as in-work earnings increase (**Figure 3**). Examples are **Estonia, Ireland, the United Kingdom and Denmark**. In these Member States, NRRs are relatively lower for those with higher previous earnings, and are all below 50% for those

¹⁸ Variation by earnings affects the out-of-work incomes, i.e. the numerator of the NRR, only for individuals with a previous employment record and only in those Member States where previous earnings enter the calculation of benefit entitlements. For those without previous employment history variation by earnings affects only the denominator of the NRR. See Box 2.1 for details.

with previous earnings equal to 150% of the average wage. In **Ireland**, benefit entitlements are the same irrespective of the main out-of-work benefit, the disability level and the previous employment history. In **Estonia**, the **United Kingdom** and **Denmark**, individuals with ‘maximum disability’ receive higher benefit entitlements than the social assistance amount (yellow line) regardless of the previous employment history (thus green and black lines overlap in all charts of Figure 3), whereas those with ‘minimum disability’ and previous employment receive the social assistance amount (thus purple and yellow lines overlap).^{19, 20}

Figure 3. NRRs in Member States with flat-rate disability benefits

50-year-old single person without children, 2016



Notes:

1. The denominator of the NRRs refers always to the net household income of a full-time employee without disabilities and with a ‘long and continuous’ employment record. See **Box 2.1** and **Table 2.1** for details on the calculation of NRRs and the interpretation of the results. The yellow (blue) line refers to the case of a fully-capable individual receiving social assistance (unemployment) benefits, as applicable. ‘Minimum disability’

¹⁹ Disability benefits in **Denmark** are entirely flat-rate only for those with the most severe disability level. Those with ‘minimum disability’ are entitled to a disability insurance benefit that is linked to previous earnings (the so-called Flexi-Job subsidy) until the amount reaches the maximum level (purple line in Figure 3). After this threshold the system becomes entirely flat-rate.

²⁰ As unemployment benefits in **Estonia** are related to previous earnings, NRRs do not fall as previous earnings increase in the same way that they do for individuals receiving disability benefits. Figure 3 shows that unemployment benefit amounts become higher than the ‘maximum disability’ benefit amount for earnings above 80% of the average wage.

refers to the lowest-possible level of severity needed to qualify for disability benefit support in each Member State, ‘maximum disability’ is the level classified as the most severe. ‘Long and continuous’ employment record means the individual has been in employment since age 19 until the age of 50.

2. Some lines are not visible on the charts. In all the four Member States, individuals with ‘minimum disability’ and no previous employment record (red line) receive benefits at the social assistance level (yellow line), whereas those with ‘maximum disability’ receive the same benefit amounts regardless of the previous employment record (black and green lines). In **Estonia** and the **United Kingdom** those with ‘minimum disability’ and previous employment record (purple line) receive benefits at the social assistance level (yellow line), which in the **United Kingdom** is also the level received by unemployment benefit recipients (blue line).

Source: OECD calculations using the [OECD tax-benefit model](#).

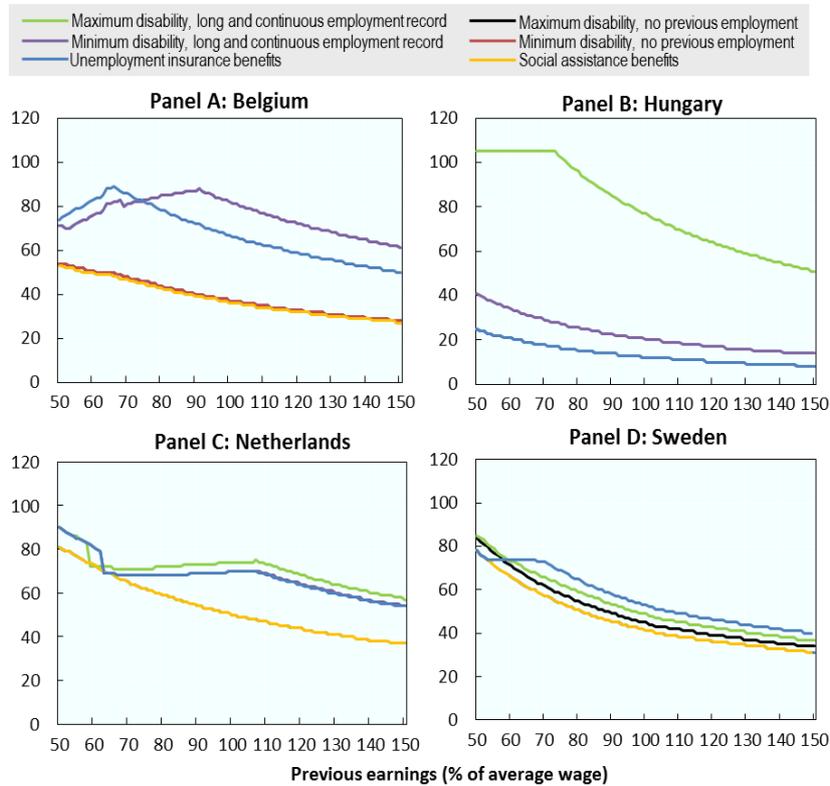
17. Some Member States including **Belgium**, **Hungary**, **the Netherlands** and **Sweden** link disability benefit entitlements to the claimant’s earnings in the period immediately preceding the onset of disability (**Figure 4**). This period can range from one year in **Hungary** and the **Netherlands** to up to eight years in **Sweden**. However, this does not always lead to differences in overall benefit entitlements by earnings level: for example, in **Hungary**, for those with the minimum disability level (purple line), the maximum amount of disability insurance is reached at very low previous earnings levels (below 50% of the average wage), so it appears as a flat-rate benefit in Figure 4. Similarly, in **Sweden**, although the level of disability benefits increases with previous earnings, higher levels of disability benefits reduce housing benefit entitlements and so NRRs decline with earnings throughout the entire range of earnings levels.²¹ Moreover, as only earnings up to a certain threshold are taken into account when determining disability benefit levels, NRRs still decline at higher earnings levels in all these four Member States. This is similar to the NRRs shown in Figure 3, with the difference that NRRs in Figure 4 are higher for jobseekers with previous earnings around the average wage (70-80% in **Hungary** and **Sweden** and the average wage in **Belgium** and the **Netherlands**).

18. The pattern observed for some of the Member States shown in Figure 4 is often affected by the interaction between benefits and taxes and/or between different types of benefits. In **Belgium**, NRRs increase with previous earnings up to a certain point as a result of progressive taxation: benefits are based on gross earnings and are not taxed if below a certain level, so benefits increase proportionally with earnings, but net incomes for those in work do not. In **the Netherlands** housing benefits are fully withdrawn when incomes from other sources, including disability benefits, are above a certain threshold. As a result, net overall benefit entitlements, and hence NRRs, drop considerably when previous earnings exceed a certain level, as beyond this level (around 60% of the AW, see **Figure 4**) disability benefit entitlements are too high for the individual to qualify for housing benefits. Similarly, in **Sweden**, although disability benefit entitlements are lower than those received under unemployment benefits, housing benefits are more generous for those receiving a disability benefit, so overall benefit entitlements (and hence NRRs) are higher for a disability benefit recipient (green and black lines, Figure 4) than for an unemployment benefit recipient with low previous earnings (blue line).

²¹ In Sweden, disabled individuals receiving housing assistance may also receive an additional Special Housing Supplement if their income after housing costs is sufficiently low. This supplement is not simulated in TaxBEN.

Figure 4. NRRs in Member States where benefits are linked to recent previous earnings

50-year-old single person without children, 2016



Notes:

1. See note 1 to Figure 3.

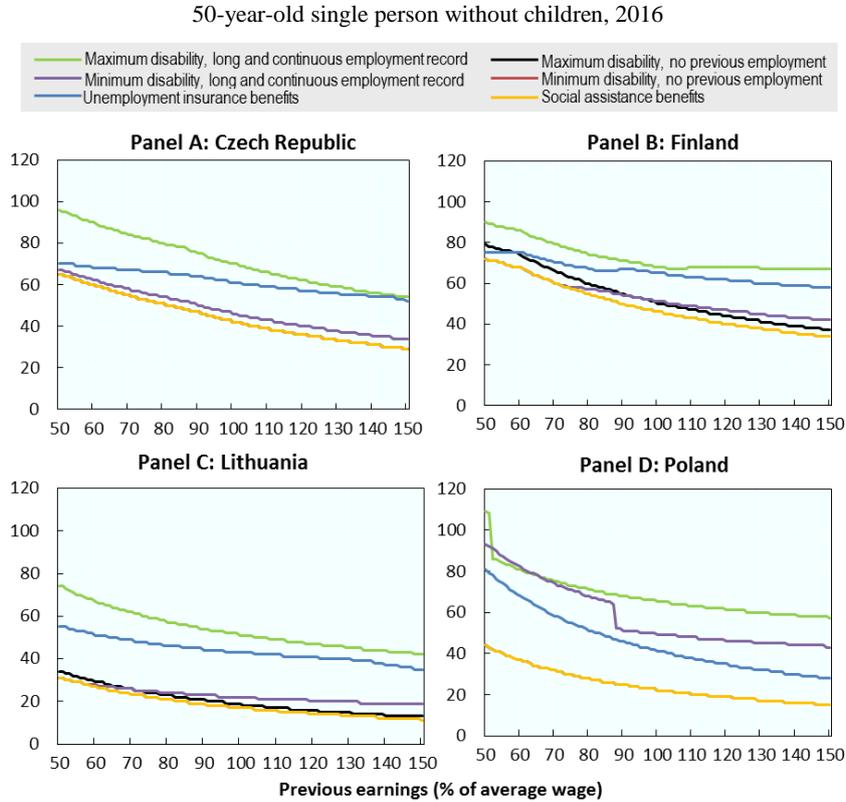
2. Some lines are not visible on the charts. In all the four Member States, individuals with ‘minimum disability’ and no previous employment record (red line) receive benefits at the social assistance level (yellow line). In **Belgium**, benefit amounts do not vary by disability level so the lines referring to disabled individuals with a previous employment record (purple and green lines, depending on the disability level) overlap, just like the lines referring to those without any previous employment record (i.e. the black and red lines depending on the disability level). In **Hungary** and **the Netherlands** individuals without previous employment record receive benefits at the social assistance level regardless of the level of disability (so the black and red lines overlap with the yellow line); in **Hungary** this is also the level of unemployment benefits (blue line). In **the Netherlands**, those with ‘minimum disability’ and previous employment record (purple line) receive benefits at the level of unemployment benefits (blue line) whereas in **Sweden** those with ‘minimum disability’ receive benefits at the social assistance level (yellow line) regardless of the previous employment record (purple and red lines).

Source: OECD calculations using [OECD tax-benefit model](#).

19. Other Member States have “pension-type” disability benefits, i.e. benefit entitlements depend on the claimant’s entire earnings history (Error! Reference source not found.). In the **Czech Republic, Finland, Lithuania** and **Poland**, disability benefit entitlements rise with previous earnings for a claimant with a long and continuous employment record. For instance, in **Finland** and **Lithuania** benefit amounts for someone with low previous earnings and ‘minimum disability’ (purple line) are no higher than those received by someone claiming social assistance benefits, but are above the social assistance level for those with higher previous earnings. However, the link between previous earnings and benefit levels is not one-for-one (that is, someone who earned the average wage throughout their career does not receive twice as much as someone who earned 50% of the average wage), so NRRs are still lower for those with higher previous

earnings levels, though they decline less rapidly with previous earnings levels than in those Member States with flat-rate benefits (Figure 3).

Figure 5. NRRs in Member States with 'pension-type' disability benefits



Notes:

1. See note 1 to Figure 3.

2. Some lines are not visible on the charts: In all the four Member States, individuals with ‘minimum disability’ and no previous employment record (red line) receive benefits at the social assistance level (yellow line). In the **Czech Republic** and **Poland**, those with disabilities without previous employment record receive benefits at the social assistance level regardless of the disability level (the black and red lines overlap with the yellow line).

Source: OECD calculations using [OECD tax-benefit model](#).

20. In **Poland** (Figure 5), similarly to the pattern observed in Figure 4 for the **Netherlands**, the interaction between disability and housing benefits explains the sudden drop in the NRRs for those with the minimum disability level when previous earnings exceed 90% of the average wage (purple line): beyond this level disability benefit entitlements are too high for the individual to qualify for housing benefits. As those with the most severe disabilities have higher benefit entitlements at a given level of previous earnings, this drop occurs at a lower level of previous earnings for those with the maximum disability (green line).²² Similarly, in the **Czech Republic** and **Finland**,

²² This interaction has also the effect that NRRs are somewhat higher for those with ‘minimum disability’ at low earnings levels: the additional housing benefit received by those with a less severe disability offsets their lower disability benefit entitlement.

housing benefit entitlements depend on the level of disability pensions, which has the effect that those with higher previous earnings levels receive lower housing benefit.

21. Family composition can also affect benefit entitlements and NRRs for individuals with reduced work capacity. First, in some countries disability benefit amounts depend directly on having a spouse or children (e.g. in **Belgium, Finland, Ireland**, and the **United Kingdom**). Second, net incomes of families with children will be affected also by family benefit entitlements as applicable, and by the interplay between these benefits and disability benefit programmes (as with housing benefits, as demonstrated above). [Annex B](#) provides the full set of NRRs for four different family types and the other individual circumstances considered in this chapter.

Table 2.1. Selected characteristics of main out-of-work benefits for people with disabilities

Panel A: 50-year old person with a ‘long and continuous’ previous employment record and previous earnings at 100% of the Average Wage

Country	1] Main benefit out-of-work	2] Benefits based on previous earnings	3] Benefit level for minimum disability	4] Benefit level for maximum disability	5] Benefits withdrawn on entering work
BEL	DI	Yes	>UB	>UB	Quickly
CZE	DI	Yes (pension type)	SA	>UB	No
DNK	DI / DA	Yes ^(a)	DI (=SA)	DA (> SA)	Slowly
EST	DA	No	SA	>SA & <UB	Slowly
FIN	DI	Yes (pension type)	>SA & <UB	>UB	Stepped
GBR	DI	No	SA (=UB)	>SA	Quickly
HUN	DI	Yes	>UB	>UB	Stepped
IRL	DI	No	UB	UB	Stepped ^(b)
LTU	DI	Yes (pension type)	>SA & <UB	>UB	No
NLD	DI	Yes	UB	>UB	Quickly
POL	DI	Yes (pension type)	>UB	>UB	Stepped
SWE	DI	Yes	SA	>SA & <UB	Fully ^(b)

Panel B: 50-year old single person without any previous employment record

Country	1] Main benefit out-of-work	2] Benefits based on previous earnings	3] Benefit level for minimum disability	4] Benefit level for maximum disability	5] Benefits withdrawn on entering work
BEL	DA	N/A	SA	SA	Quickly
CZE	SA		SA	SA	Quickly
DNK	DA / SA		SA	DA (> SA)	Slowly
EST	DA		SA	>SA	Slowly
FIN	DA / SA		SA	DA (> SA)	Quickly / stepped for DA
GBR	DA		SA	>SA	Quickly
HUN	SA		SA	SA	Quickly
IRL	DA		SA	SA	Stepped
LTU	DA / SA		SA	DA (> SA)	Quickly, fully for DA
NLD	SA		SA	SA	Quickly
POL	SA		SA	SA	Quickly
SWE	DA / SA		SA	DA (> SA)	Quickly, fully for DA

Notes:

1. When relevant, information in Panel A refers to a person with previous earnings at 100% of AW.

- Column (1): ‘DI’: Disability Insurance; ‘DA’: Disability Assistance; ‘SA’: social assistance / guaranteed minimum income benefits. If the individual receives DI or DA, this is considered the ‘main’ benefit; social assistance and cash housing benefit top-ups are available as applicable in all scenarios.

2. Column (2), Panel A: ‘no’ means no dependence on previous earnings (flat-rate system); ‘yes’ means dependence on previous earnings during a limited time period before the onset of the disability; ‘yes (pension type)’ means dependence on previous earnings throughout the claimant’s career (pension-type system). ^(a) In Denmark, DI is indirectly linked to previous earnings as the amount is based on the maximum unemployment benefit entitlements.

3. Columns (3)-(4): ‘SA’: SA amount; ‘UB’: UB amount; ‘>SA & <UB’: benefits above SA but below UB; ‘>UB’: benefits above SA and UB. This refers always to the overall net income. Benefit levels are not compared to the level of UB in Panel B because SA is usually below UB. If Column (1) shows multiple benefits, e.g. DA / SA, columns (3)-(4) show first the *type* of disability benefit (as applicable) and then the benefit level in brackets, e.g. DA (>SA).

4. Column (5): ‘no’ means benefits can be fully retained on entering work; ‘slowly’ means benefits are withdrawn partly/slowly on entering work; ‘stepped’ means benefits are withdrawn after exceeding particular threshold(s); ‘quickly’ means benefits are withdrawn substantially/quickly on entering work; ‘fully’ means benefits are withdrawn fully on entering work. ^(b) In **Ireland**, receipt of DI cannot be combined with working activity but recipients returning to work can receive a Partial Capacity Benefit whose amounts are between 50-100% of DI depending on the disability degree. Thus, benefit withdrawal is ‘stepped’ depending on the disability level, and individuals with ‘maximum disability’ can fully retain their benefit on entering work. ^(b) In **Sweden**, those who move into work can retain 25% of the benefit up to 24 months. Although transitional ‘into-work’ benefits are simulated in TaxBEN, this report analyses ‘long-term’ work incentives and therefore excludes any temporary benefits from the analysis. A comparative account of ‘short-term’ PTRs for the 12 Member States is available upon request

Source: [OECD tax-benefit model](#).

3. Does work pay for individuals with disability?

22. Many people with reduced work capacity can work and indeed want to work in ways compatible with their health condition. However, those who wish to return to work may not be sufficiently motivated to actively look or take up employment, or may not be able to afford it, when they face steep benefit withdrawal upon entering work. In recent years, a number of policy reforms have sought to reduce disability benefit dependency by (i) strengthening employment-oriented policies and rehabilitation for those with partial disabilities, (ii) restricting inflows to long-term disability programmes by improving the assessment procedures, as well as (iii) strengthening financial incentives for those claiming benefits to take up employment or to increase working hours (OECD, 2010^[6]). Making work pay is particularly important for workers with reduced work capacity as many of them are likely to enter low-paid jobs or start working reduced hours, and so are likely to be particularly sensitive to the strength of the work incentives they face.

23. This chapter illustrates the financial work incentives faced by those claiming disability benefits in the same 12 EU Member States examined in Chapter 2. **Section 3.1** describes the incentives to move into work whereas the incentives to increase working hours for those who are already in employment are analysed in **Section 3.2**. The two measures of work incentives considered throughout this chapter are the Participation Tax Rate (PTR) and Marginal Effective Tax Rate (METR).

24. Similarly to Chapter 2, work incentives for individuals with reduced work capacity are compared with those of otherwise similar out-of-work individuals with full work capacity, who may be entitled to unemployment benefits and/or to GMI benefits. **Box 3.1** describes the individual and household circumstances under which work incentive indicators have been calculated.

Box 3.1. Indicators of work incentives

This report uses two measures of work incentives: the financial incentive to move into paid work (as opposed to not working), measured by the *Participation Tax Rate (PTR)*, and the incentive for an employee to increase their working hours, measured by the *Marginal Effective Tax Rate (METR)*.

PTRs and METRs measure the fraction of any (additional) earnings that is lost to either higher taxes or lower benefits when individuals take up a new job (PTR) or increase their number of working hours (METR). Increasing working hours are given as a percentage of statutory full-time work. PTR and METR are calculated as follows (expressed in percent):

$$PTR/METR = 1 - \frac{\Delta y_{net}}{\Delta y_{gross}}$$

Values are multiplied by 100. Δy_{net} and Δy_{gross} denote respectively the change in net and gross household income following the transition from one working status to another. Higher PTRs or METRs both indicate *weaker* work incentives.

In line with Chapter 1 (Box 2.1), **PTRs** are calculated for jobless individuals for the following out-of-work scenarios:

1. Individuals *without* disabilities. Assuming a 'long and continuous' previous employment record and eligibility as applicable to unemployment benefits. A 'long and continuous' employment record means employment since age 19 until the age of 50. This indicator is often referred to as "unemployment benefit trap".

2. Individuals *without* disabilities who may be entitled to GMI or social assistance benefits but not to unemployment benefits (e.g. because they have expired). This indicator is often referred to as “inactivity trap”.
3. Individuals *with* disabilities, who may be entitled to disability benefits as applicable. This indicator can be referred to as “disability benefit trap”. For this scenario results are calculated for the following circumstances:
 - i. ‘Minimum disability’, i.e. the lowest-possible level of severity needed to qualify for benefit support in each Member State, and ‘maximum disability’, i.e. the level classified as the most severe disability.
 - ii. A ‘long and continuous’ previous employment record (as defined above) and, at the other extreme, not any previous employment record.

PTRs are calculated for six family types (single without children, single with two children, single-earner couple without children, single-earner couple with two children, two-earner couple without children and two-earner couple with two children) and two earnings levels: the average wage (‘average earner’) and 50% of the average wage (‘low-wage’ earner). Results refer to 50-year-old adults whereas children are 6 and 4 years old (as applicable). For couple families, only one spouse can have disabilities and if the second adult member is in paid work, they are assumed to work full-time at 67% of the average wage.

Note that for individuals without any previous employment record, variation by earnings affects only the ‘in-work’ incomes, but not the net incomes received while being out of work. The same remark applies when previous earnings do not enter the calculation of benefit entitlements. For individuals with a previous employment record, it is assumed that the earnings level of an individual who is moving into work is the same as when they were working previously (as relevant). In all cases, it is assumed that a claimant’s assessed disability level is not affected if they move into work.

The report shows PTRs for working hours between 10 and 50 hours per week. Housing and social assistance supplements as well as other means-tested benefits are assumed to be available in all the scenarios, subject to relevant eligibility and income conditions. Benefit amounts are calculated during the 4th month of payment for the relevant out-of-work benefit. Any temporary (“transitional”) benefits paid to those who make the transition into paid work are excluded.

METRs are calculated for an ‘average’ and a low-wage earner with ‘maximum’ / ‘minimum’ disability (as defined above), assuming a transition from part-time (20 hours) to full-time work (40 hours). [Annex B](#) provides also METRs for two other transitions: from 20 to 26.8 (i.e. 2/3 of full-time work) and from 26.8 to 40 hours. All METRs refer to an employee with a ‘long and continuous’ employment record (as defined above). Results are shown for the six family types above assuming availability of social assistance and housing benefits as well as other means-tested benefits subject to relevant income conditions. Also in this case, it is assumed that a claimant’s assessed disability level is not affected if they increase their working hours.

3.1. Incentives for disability benefit recipients to move into work

25. **Figure 6** shows average PTRs calculated over six family types and two earnings levels (see **Box 3.1**). Charts are organized in 4 Panels: Panels A and B show average PTRs for individuals with previous employment record who take up part-time employment (20 hours per week, **Panel A**) and full-time employment (40 hours per week, **Panel B**). Panels C and D consider the case of an individual without any past employment record who takes up part-time (**Panel C**) and full-time (**Panel D**) employment. Each panel shows PTRs for the case of ‘maximum’ and ‘minimum’ disability (dark and light blue bars, respectively) and compares these values with the PTRs of taking up employment for those who may receive as applicable other types of earnings replacement benefits, namely unemployment (Panels A and B) and GMI or social assistance (Panels C and D) benefits (grey bars).

26. In Member States such as **Belgium**, **Sweden** and the **United Kingdom** where disability benefit entitlements for individuals with ‘maximum disability’ and a long and

continuous employment record are more generous than unemployment insurance and/or social assistance benefits (as applicable, see also **Table 2.1**), and are withdrawn relatively quickly upon entering work, financial work incentives to move into part-time work are comparatively weak (**Figure 6**, Panel A). Similarly, in **Finland** and the **Netherlands** out-of-work benefits are withdrawn quickly when moving into work, but since this happens regardless of the type of earnings replacement, work incentives for disability benefit recipients with ‘maximum disability’ are similar to those of otherwise fully-capable individuals receiving social assistance or unemployment benefits.

27. In other Member States, PTRs are lower for disability benefit recipients with a long and continuous employment record, as it is possible for them to continue receiving some or all of their benefits when they re-enter work. For example:

- In the **Czech Republic** and **Lithuania**, and for those with the most severe disabilities in **Ireland**, the full amount of disability benefit can be retained on re-entering work;
- In **Denmark**, the Flexi-Job subsidy continues to be paid when the recipient is in work, though the amount is means-tested against earnings, and disability benefits are withdrawn only gradually when earnings rise;
- In **Estonia**, the Work Ability Allowance only starts to be withdrawn when earnings exceed a relatively high threshold (around 85% of the average wage);
- In **Hungary**, disability pensions are fully withdrawn if earnings exceed 150% of the minimum wage but are unaffected otherwise. Of the situations examined in **Figure 6**, this only affects those working full-time at the average wage.
- In **Poland**, for those with a ‘long and continuous’ previous employment record, disability benefits are partially withdrawn when earnings exceed 70% of the average wage and fully withdrawn when they exceed 130% of the average wage.²³

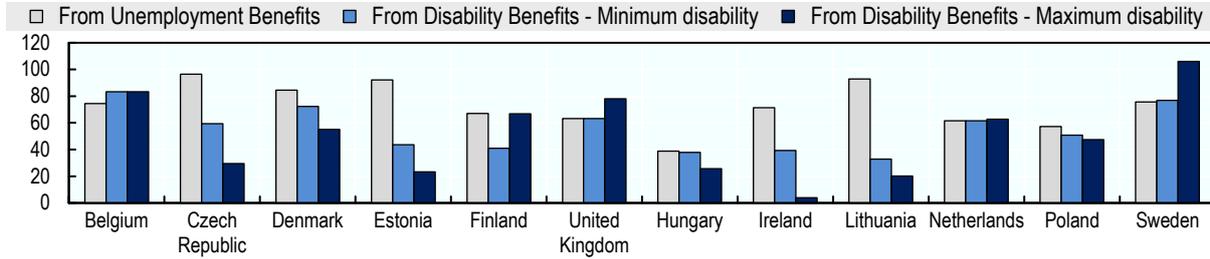
28. Individuals with disabilities and without any previous employment record receive social assistance or GMI benefits in most of the Member States, and so face identical or very similar work incentives to individuals who are without disabilities and do not have any previous employment record, particularly if their disability is less severe and they take up full-time employment (**Figure 6**, Panels D). Significant differences in work incentives compared to the case without disabilities (grey bars) occur only in **Estonia**, where the disability assistance benefit is withdrawn more slowly as earnings increase compared to the standard social assistance benefit, and, in the case of part-time work, in **Ireland**, where the Disability Allowance (i.e. the disability benefit for those with insufficient past contributions to qualify for the disability insurance benefit) is also withdrawn more gradually compared to social assistance (Panel C).

29. An important caveat to these results is that the calculations in this section, as well as in [Annex B](#), assume that the disability benefit claimant’s assessed disability level is unchanged when they move into work. When this is not the case, or claimants fear that their disability level will be reassessed and they will lose entitlement if they work, work incentives will be weaker than they appear here. Also, for those with a previous employment record, the earnings level of an individual who is moving into work is the same as when they were working previously (as relevant).

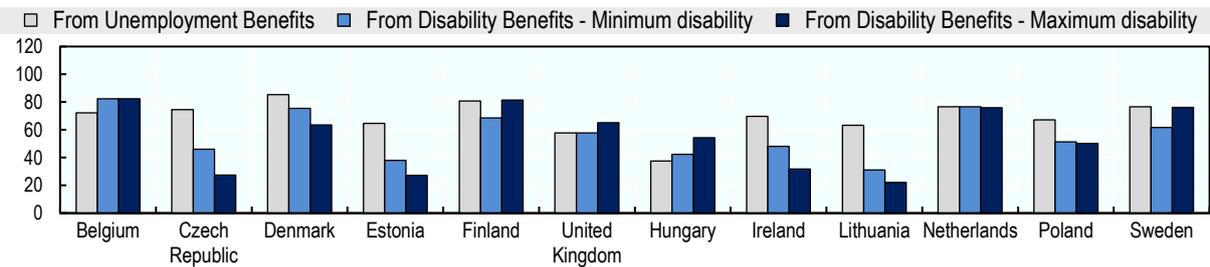
²³ This latter provision does not affect any of the situations examined in **Figure 6**, where the highest earnings level considered is the average wage.

Figure 6. Average participation tax rates by disability level, 2016

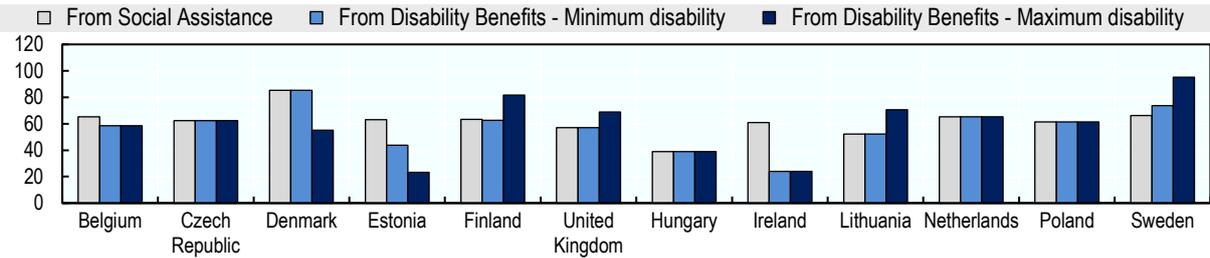
Panel A: 'long and continuous' employment record, taking up part-time employment



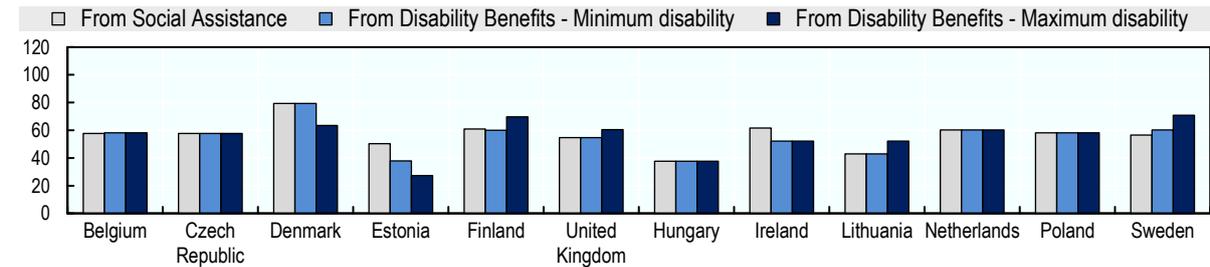
Panel B: 'long and continuous' employment record, taking up full-time employment



Panel C: without any previous employment record, taking up part-time employment



Panel D: without any previous employment record, taking up full-time employment

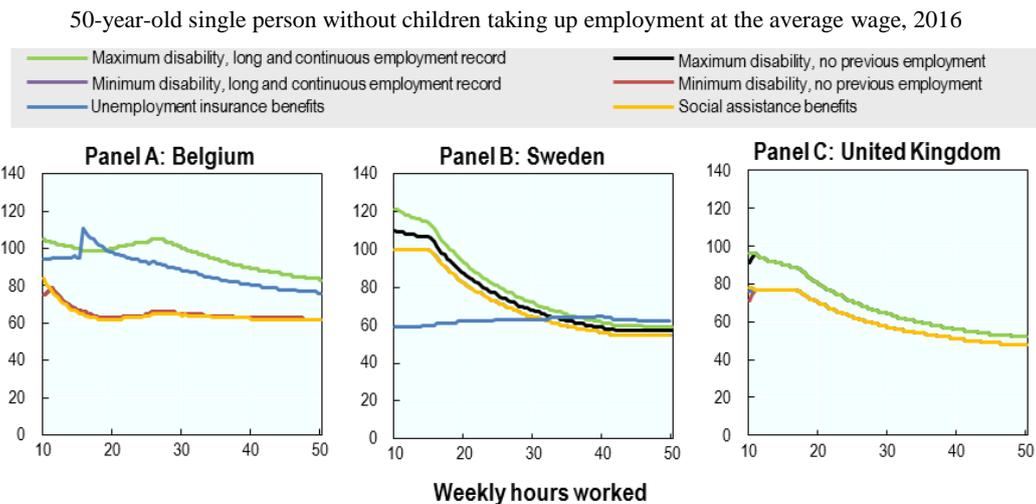


Notes: The figure shows arithmetic averages of PTRs over six family types and two earnings levels: 50% and 100% of the average wage (see Box 3.1 for details). Variation by earnings affects the net out-of-work incomes only if the individual has a previous employment record and the Member State uses previous earnings to calculate benefit entitlements. In all the other cases, variation by earnings affects only in-work incomes. 'SA' refers to the case of a fully-capable individual receiving as applicable GMI or social assistance benefits. 'UB' refers to the case of a fully-capable individual receiving as applicable unemployment benefits. 'Minimum disability' refers to the lowest-possible level of severity needed to qualify for benefit support in each Member State, 'maximum disability' is the level classified as the most severe. 'Long and continuous' employment record means the individual has been in employment since age 19 until the age of 50. Annex A describes the methodology for calculating disability benefit entitlements. [Annex B](#), accessible online, shows the full set of PTRs calculated as part of this report.

Source: OECD calculations using [OECD tax-benefit model](#).

30. In some Member States, disability benefits are withdrawn very quickly on entering work, thus producing high PTRs especially for those working few hours per week (**Figure 7**): in **Belgium** (Panel A), the amount of disability benefit received is reduced by 75% of earnings above a low threshold, in **Sweden** (Panel B), benefits are fully withdrawn if the claimant has any earnings at all,²⁴ and in the **United Kingdom** (Panel C) it is not possible to receive disability benefits if the claimant works more than 16 hours per week.

Figure 7. PTRs in Member States with swift withdrawal of disability benefits on entering work



Notes:

1. See **Box 3.1** and **Table 2.1** for details on the calculation of PTRs and the interpretation of the results. The yellow (blue) line refers to the case of a fully-capable individual receiving social assistance (unemployment) benefits, as applicable. ‘Minimum disability’ refers to the lowest-possible level of severity needed to qualify for disability benefit support in each Member State, ‘maximum disability’ is the level classified as the most severe. ‘Long and continuous’ employment record means the individual has been in employment since age 19 until the age of 50.

2. Some lines are not visible on the charts. In all the three charts, individuals with ‘minimum disability’ and no previous employment record (red line) have similar or identical PTRs as social assistance benefit recipients without disabilities (yellow line). In **Belgium**, benefit amounts do not vary by disability level so the PTRs referring to disabled individuals with a previous employment record (purple and green lines, depending on the disability level) are the same, just like the PTRs of those without previous employment record (black and red lines, depending on the disability level). In **Sweden** those with ‘minimum disability’ have the same PTRs as social assistance benefit recipients (yellow line) regardless of the previous employment record (purple and red lines). In the **United Kingdom** individuals with ‘minimum disability’ working more than 12 hours a week, have the same PTRs as social assistance and unemployment benefit recipients without disabilities (yellow and blue lines) regardless of the previous employment history (purple and red lines).

Source: OECD calculations using [OECD tax-benefit model](#).

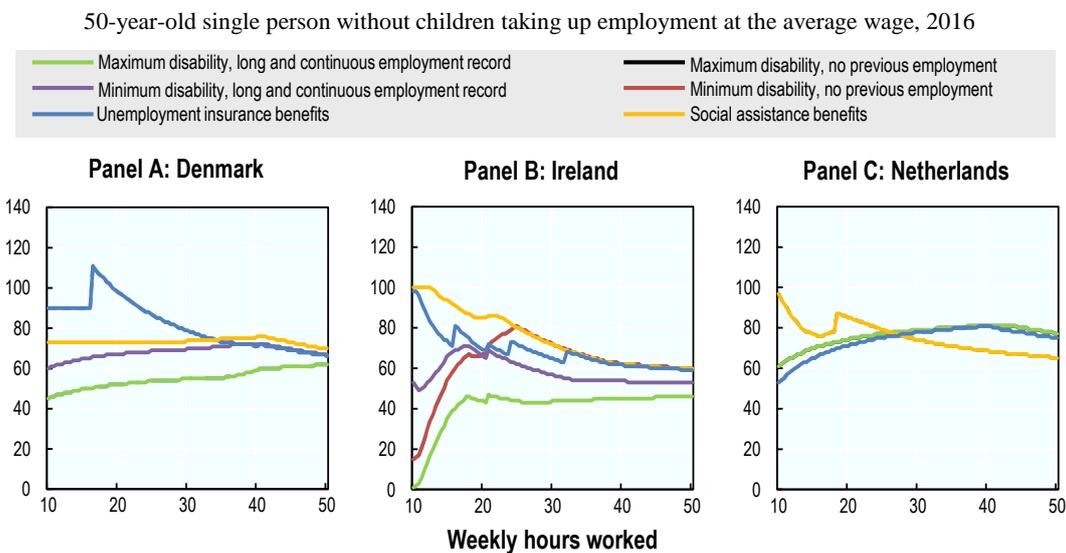
31. In other Member States, disability benefits are withdrawn more gradually or only partially as earnings rise, giving benefit recipients comparatively stronger incentives to move into part-time work (**Figure 8**). In **Denmark** (Panel A), disability benefit

²⁴ In **Sweden**, those who move into work can retain 25% of the benefit up to 24 months. Although transitional ‘into-work’ benefits are simulated in TaxBEN, this report analyses ‘long-term’ work incentives and therefore excludes temporary benefits from the analysis. A comparative account of ‘short-term’ PTRs for the 12 Member States is available upon request.

withdrawal rates are relatively low, and so claimants of these benefits face stronger incentives than those claiming unemployment benefits or social assistance. In **Ireland** (Panel B), individuals with ‘minimum disability’ and previous employment record who have enough previous contributions to receive disability insurance (so-called ‘Invalidity Pension’) can receive a Partial Capacity benefit when they move into work (the Invalidity Pension is not compatible with working activities). As this benefit is between 50% and 100% of the previous disability benefit amount (depending on the level of disability), PTRs are particularly low for these individuals (purple and green lines). Similarly, individuals with insufficient past contributions to qualify for the disability insurance benefit receive a disability assistance benefit characterized by relatively generous earnings disregards, which produces relatively low work disincentives at low hours of work (Figure 8, Panel B – red line).

32. In the **Netherlands**, although benefit withdrawal rates are relatively high, at about 70% in the scenarios considered here, reductions in the out-of-work benefits upon entering work are partially offset by the increased entitlement to the so-called Supplementary Benefit. Entitlement to this benefit requires a certain level previous social security contributions so only those with a ‘long and continuous’ employment record have PTRs below 70% (**Figure 8**, Panel C – green line). When the Supplementary Benefit is fully withdrawn (which occurs at about 28 hours of work per week at the average wage), PTR increase up to 80% when working full-time at the average wage.

Figure 8. PTRs in Member States with more gradual withdrawal of benefits on entering work



Notes:

1. See note 1 to Figure 7.

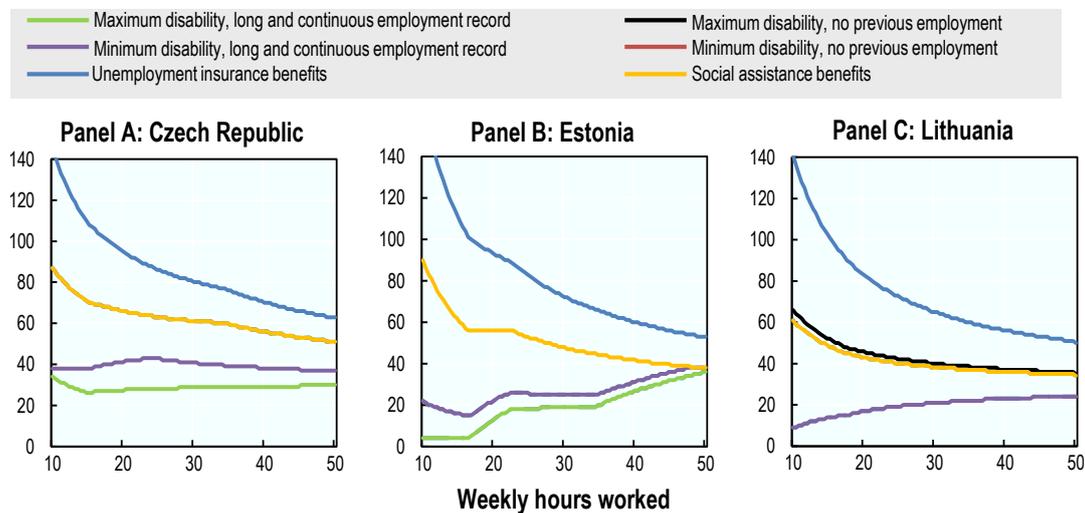
2. Some lines are not visible on the charts: In **Denmark**, individuals with ‘minimum disability’ and without previous employment record (red line) have the same PTRs as social assistance benefit recipients without disabilities (yellow line), whereas individuals with ‘maximum disability’ have the same PTRs regardless of their previous employment record (black and green lines). In **Ireland**, individuals with disabilities and without any previous employment record face the same PTRs regardless of their level of disability (black and red lines). In **the Netherlands**, individuals with ‘minimum disability’ and previous employment record (purple line) have the same PTRs as those receiving unemployment benefits (blue line), whereas disabled individuals without any previous employment record have the same PTRs regardless of their level of disability (black and red lines) as those of otherwise similar social assistance benefit recipients without disabilities (yellow line).

Source: OECD calculations using [OECD tax-benefit model](#).

33. PTRs tend to be relatively low in those Member States where disability benefits are not withdrawn upon entering work, as in the **Czech Republic** and **Lithuania**, or if they only start to be withdrawn when earnings exceed a relatively-high threshold, as in **Estonia** (**Figure 9**). In all these Member States, PTRs for those entitled to disability benefits are generally below 40%. Exceptions to this are the PTRs of those without any previous employment record in the **Czech Republic** and **Lithuania**: in these two Member States, people with disabilities receive social assistance benefits (Figure 9, yellow lines) or, in the case of ‘maximum disability’ in **Lithuania**, the so-called Social Assistance Pension (which is slightly higher than the standard social assistance benefit, see Panel C – black line), both of which are withdrawn at steep rates upon entering work.

Figure 9. PTRs in Member States with no or slow withdrawal of benefits on entering work

50-year-old single person without children taking up employment at the average wage, 2016



Notes:

1. See note 1 to Figure 7.

2. Some lines are not visible on the charts. In all the three charts, individuals with ‘minimum disability’ and no previous employment record (red line) have the same PTRs as those of otherwise similar individuals without disabilities receiving social assistance benefits (yellow line). In the **Czech Republic**, individuals with disabilities and without previous employment record have the same PTRs regardless of the disability level as those of social assistance benefit recipients without disabilities (black and red lines overlap with the yellow line). In **Estonia** individuals with ‘maximum disability’ face the same PTRs regardless of their previous employment record (black and green lines overlap). In **Lithuania**, disabled individuals with a previous employment record face the same PTRs irrespective of the level of disability (green and purple lines overlap).

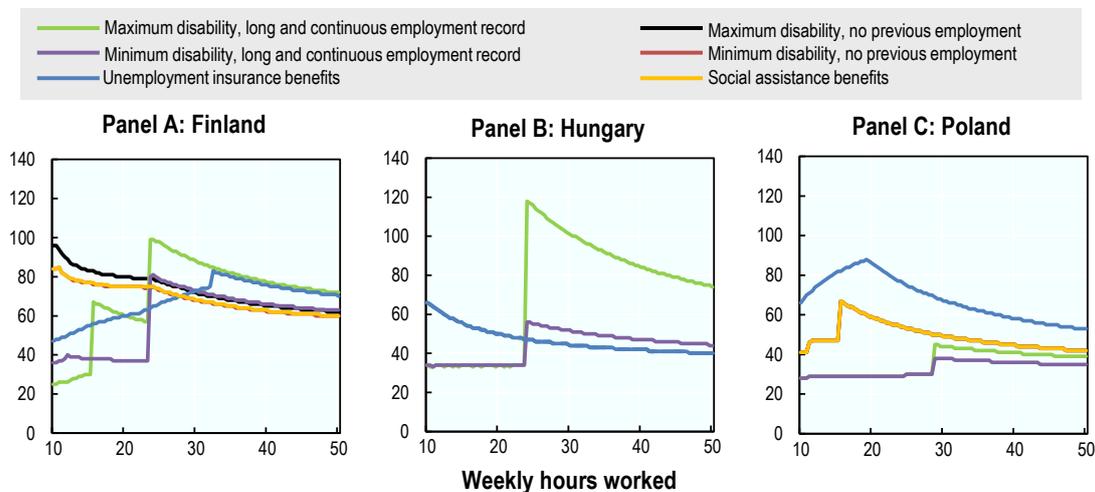
Source: OECD calculations using [OECD tax-benefit model](#).

34. The final group of Member States withdraw fully disability benefits when earnings exceed a particular threshold (**Figure 10**). In these Member States, disability benefit recipients with a ‘long and continuous’ previous employment record have relatively strong incentives to earn up to the threshold, but face weak incentives to earn above this level. For example, in **Finland** earnings-related disability benefits are withdrawn if the claimant’s earnings are more than 60% of their average earnings in the five years prior to the onset of disability, and a full disability pension is converted to a partial disability pension if earnings exceed 40% of this amount. Similarly, in **Hungary** benefits are withdrawn if earnings exceed 150% of the minimum wage, and in **Poland**,

the Invalidity Pension is partially withdrawn when earnings exceed 70% of the average wage and fully withdrawn when they exceed 130% of the average wage (though Figure 10 does not extend to such high earnings levels). For those with no previous employment record (Figure 10, black and red lines, when visible – see notes to the Figure), incentives are similar or identical to those of individuals receiving social assistance benefits (yellow line). As non-contributory benefits are typically withdrawn relatively quickly upon entering work, this leads to relatively higher PTRs for those wishing to work part time.

Figure 10. PTRs in Member States where disability benefits are suddenly withdrawn if earnings exceed a threshold

50-year-old single person without children taking up employment at the average wage, 2016



Notes:

1. See note 1 to Figure 7.

2. Some lines are not visible on the charts. In all the three charts, individuals with ‘minimum disability’ and no previous employment record (red line) have the same PTRs as those of otherwise similar individuals without disabilities receiving social assistance benefits (yellow line). In **Hungary**, those with disabilities and without any previous employment record have the same PTRs as otherwise similar individuals without disabilities receiving social assistance or unemployment benefits (black and red lines overlap with yellow and blue lines). In **Poland**, individuals with disabilities and without any previous employment record have the same PTRs as those of otherwise similar individuals without disabilities receiving social assistance benefits (black and red lines overlap with the yellow line).

Source: OECD calculations using [OECD tax-benefit model](#).

3.2. Incentives for disability benefit recipients to move from part-time to full-time work

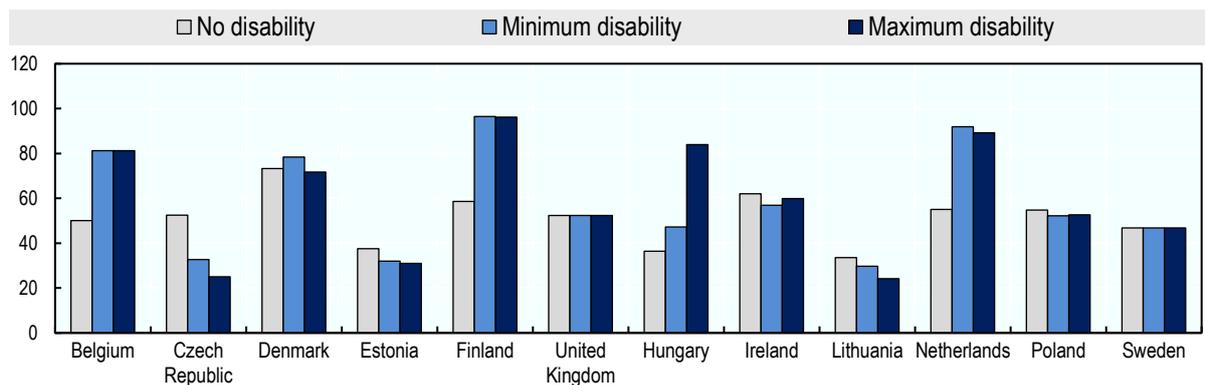
35. Chapter 3 has focused so far on the financial incentives of entering work for disability benefit recipients. A related yet different question arises when analysing work incentives for disabled employees who may receive a disability benefit and are considering working more hours. This section uses Marginal Effective Tax Rates (METRs) to analyse the financial incentives of increasing working hours from part-time (20 hours per week) to full-time work (40 hours per week) for individuals with a ‘long and continuous’ employment record and ‘maximum’ / ‘minimum’ disability (as defined above). In line with the other sections, results are compared with those of otherwise

similar individuals with full work capacity. **Box 3.1** above describes in detail the individual and household circumstances under which METRs have been calculated.

36. **Figure 11** shows average METRs calculated over six family types and two earnings levels (as defined in **Box 3.1**).²⁵ In **Belgium, Finland** and the **Netherlands** employees with reduced work capacity have weaker financial incentives to increase working hours from part-time to full-time. In **Finland**, disability benefit entitlements are fully withdrawn when earnings are above 60% of the average wage and because this threshold falls in the range between part-time and full-time work, METRs are close to 100%. A similar mechanism works in **Belgium** and the **Netherlands**, where about 70% – 75% of additional earnings are lost to withdrawn benefits when moving from part-time to full-time work at the earnings levels considered here. **Hungary** shows also comparatively high METRs, but only for those with ‘maximum disability’. These individuals receive substantially higher benefit entitlements relative to those with ‘minimum disability’, and their benefit entitlements are entirely withdrawn when earnings exceed 150% of the minimum wage, which corresponds to around 60% of the average wage.

Figure 11. Average marginal effective tax rates by disability level, 2016

Transition from ‘part-time’ to ‘full-time’ work.



Note: The figure shows arithmetic averages of METRs over six family types and two earnings levels: 50% and 100% of the average wage (see **Box 3.1** for details). ‘No disability’ refers to the case of a fully-capable individual receiving social assistance benefits subject to relevant eligibility and income conditions. ‘Minimum disability’ refers to the lowest-possible level of severity needed to qualify for benefit support in each Member States, ‘maximum disability’ is the level classified as the most severe disability. **Annex A** describes the methodology for calculating disability benefit entitlements. **Annex B**, accessible online, shows the full set of METRs calculated as part of this report.

Source: OECD calculations using the [OECD tax-benefit model](#).

37. In **Denmark, Estonia, Ireland** and **Poland**, disability benefits can be partly retained while working, so METRs for those with disabilities are in general slightly below those of individuals without disabilities. In **Denmark**, individuals with and without disabilities have similar METRs as marginal income tax rates increase relatively quickly and for both groups benefits are either withdrawn or partially taxed away when earnings increase.²⁶ By contrast, the Work Ability Allowance in **Estonia** and the Invalidity

²⁵ **Annex B** provides the indicators by family type, earnings levels and for three different increases in working hours.

²⁶ Individuals with ‘maximum disability’ face slightly lower METRs compared to those without disabilities when moving from part-time to full-time work as disability benefits are withdrawn less

Pension in **Poland** start to be withdrawn only when earnings exceed a relatively high threshold, so METRs are generally slightly lower for employees with reduced work capacity.²⁷

38. In **Ireland**, receipt of Invalidity Pension cannot be combined with earnings, but those returning to work can receive a Partial Capacity Benefit, which is between 50% and 100% of their previous disability benefit amount depending on the level of disability. As the amount of this benefit does not depend on the level of earnings or number of hours worked, incentives for claimants to increase their earnings are somewhat stronger than for claimants of other benefits who see their benefits withdrawn if they move from part-time to full-time work. Nevertheless, METRs for disability benefit claimants in **Ireland** are still relatively high on average as they often face withdrawal of housing or in-work benefits when they increase their earnings.

39. In **Sweden** and the **United Kingdom**, METRs are identical for those with and without a disability. This is because those with disabilities who work part time already see their disability benefits completely withdrawn in these Member States: in **Sweden**, benefits are fully withdrawn²⁸ upon moving into work, and in the **United Kingdom** it is not possible for those who work more than 16 hours per week to receive disability benefits.

40. The **Czech Republic** and, to a lower extent, **Lithuania** are the countries where the incentives to increase hours from part-time to full-time work are substantially stronger for those with disabilities than for non-disabled persons. This is because, as discussed in Section 3.1, the full amount of disability benefit can be retained on re-entering work in both Member States. Thus, those without disability (or with ‘minimum disability’) receive higher social assistance supplements compared to those with ‘maximum disability’. As social assistance supplements are withdrawn relatively quickly when earnings increase, individuals without disabilities (or with ‘minimum disability’) face in both Member States higher METRs than people with ‘maximum disability’ when they move from part-time to full-time work.

quickly compared to social assistance. By contrast, those with ‘minimum disability’ receiving the so-called Flexi-Job subsidy face a stricter means test than social assistance benefit recipients, so they face slightly higher METRs. Both social assistance and disability benefits are subject to taxation.

²⁷ The Invalidity Pension is fully withdrawn for earnings above 130% of the average wage, so incentives to increase earnings beyond this level are much lower.

²⁸ For those who move into work, 25% of the benefit can be retained for up to 24 months. Although this report shows ‘long-term’ PTRs that therefore exclude temporary (transitional) benefits, ‘short-term’ PTRs are available upon request.

4. Conclusions

41. This report provides new evidence on the net replacement rates and financial work incentives of individuals with reduced work capacity in 12 EU Member States. The analysis focused on the main types of long-term disability schemes that cover a sizeable proportion of jobless working-age individuals in the EU: i) disability insurance schemes, which provide contribution-based income-replacement benefits, and ii) disability assistance schemes, which provide tax-financed benefits. Results are shown for the minimum degree of disability that is required to qualify for benefits ('minimum disability'), as well as for the highest category as specified in applicable benefit provisions ('maximum disability'). As benefit levels can vary depending on previous employment records, results also differentiate between a situation of no previous work experience and one of a 'long and continuous' employment record (as defined throughout the text), as well as between average pay and low pay (50% of the average).

42. On average, income levels for families reliant on disability benefits as their main source of income are in line with those of otherwise similar families with full work capacity claiming unemployment or social assistance benefits. However, depending on the individual and household circumstances considered, e.g. the level of disability or the previous work history, benefit entitlements can be significantly different from those received under unemployment or social assistance.

43. For instance, although in nearly all the Member States disability benefit entitlements are similar or identical to social assistance benefit amounts for individuals without previous employment record and 'minimum disability', amounts are in general higher for those with more severe disability levels. By contrast, net incomes received by out-of-work individuals with 'maximum disability' and a 'long and continuous' previous employment record are always higher than the net incomes received by out-of-work individuals with full work capacity receiving either social assistance or unemployment insurance. However, individuals with 'minimum disability' and previous employment record receive more generous disability benefit entitlements relative to unemployment insurance only in few Member States, whereas in the majority benefit entitlements are similar or identical to social assistance benefit amounts independently of the years of previous contributions.

44. The design of disability benefit schemes can induce further differences in benefit entitlements relative to other types of earnings replacement benefits: For instance, while disability benefit entitlements for a 50-years-old persons are typically very similar to levels of unemployment or social assistance benefits in Member States with flat-rate type schemes (e.g. **Estonia, Ireland**), they are usually higher in those Member States with earnings-related schemes (e.g. **Lithuania, Poland**). Furthermore, unlike unemployment benefits, disability benefits generally have indefinite duration and are not conditional on taking part in job-search related activities, so claiming disability benefits can be a more attractive option for some groups.

45. In those Member States where benefit levels are closely earnings-related, namely **Czech Republic, Finland, Lithuania** and **Poland**, average net replacement rates are higher, compared to other Member States, for those with high previous earnings, whereas in other Member States net replacement rates are generally comparatively higher for those with lower previous earnings. This can occur for several different reasons across Member States, e.g. when disability benefits are entirely flat-rate (i.e. not related to previous earnings) such as in **Denmark, Estonia, Ireland** and the **United Kingdom**; or when benefit entitlements are related to previous earnings but only up to a certain income threshold, e.g. in **Belgium, the Netherlands** and **Hungary**; or when disability benefits enter the means tests for other benefits, as observed for **Sweden**.

46. When disability benefit entitlements depend on the entire employment history, net replacement rates can be considerably lower for those with unstable careers. Results for **Poland** and **Finland** show that the reduction in benefit entitlements is substantial for longer career breaks and when the break(s) are characterized by periods of labour-market inactivity as opposed to unemployment. Contribution credits for some types of career breaks as well as entitlements to other means-tested benefits can however moderate the negative impact of career interruptions on the net incomes of people with disabilities.

47. Financial work incentives are often, though not always, stronger for those claiming disability benefits compared to claimants of other earnings replacement benefits. This is because when people re-enter work, disability benefits are frequently withdrawn more gradually than unemployment or social assistance benefits. However, there are substantial differences across Member States in this respect. For example, in the **Czech Republic** and **Lithuania** disability benefit entitlements are unaffected by earnings, and financial incentives to take up employment are therefore strong. In **Finland** and **Hungary**, benefits are withdrawn when earnings exceed a moderate threshold, which leads to strong incentives to work part time, but weak incentives to move from part-time to full-time work. In **Belgium** and the **Netherlands**, disability benefits are withdrawn relatively quickly upon entering work but incentives to move from part-time to full-time are relatively strong. In **Denmark, Estonia, Ireland** and **Poland**, disability benefits can be partly retained while working, so work incentives are generally stronger for individuals with disabilities compared to those claiming other out-of-work benefits. In contrast, in **Sweden** and the **United Kingdom**, work incentives are weak as benefits are stopped for those entering employment, even when they work very little. In these Member States, incentives to work part time are weak for those claiming disability benefits, but the incentive to move from part-time to full-time work is relatively strong.

Annex A: The disability module of the OECD tax-benefit model

48. The OECD tax-benefit model (TaxBEN) incorporates detailed policy rules for tax liabilities and benefit entitlements as they apply to working-age individuals and their dependent children. The model’s policy scope includes the main taxes on employment income (earnings), social security contributions paid by employees and employers, as well as the main cash and near-cash benefit programmes: unemployment insurance and unemployment assistance programmes, family benefits, guaranteed minimum-income benefits and social assistance programmes, cash housing benefits for rented accommodation and employment-conditional (“in-work”) benefits. Provisions that provide support for the costs of childcare are included for some years, most recently 2015.²⁹

49. The model provides results for *stylised* families (sometimes referred to as “vignettes”, e.g. a married couple of 40 years old adults with two children aged 4 and 6) and covers all OECD countries (except Mexico) and all EU Member States. Box A.1 gives more details of the characteristics that can be altered by model users and its default settings. A more detailed illustration and discussion of the assumptions underlying the OECD tax-benefit model can be found in the [methodology document](#).

Box A.1. Standard assumptions of the OECD tax-benefit model

Calculating tax liabilities and benefit entitlements requires information on a wide range of household and individual characteristics. The OECD tax-benefit model allows users to alter many of these characteristics, for example, age of adults, earnings levels, number and age of children, past social security contribution records and housing costs. In this way, users can explore the functioning of particular existing policy mechanisms and their implications at the family level. It is also possible to analyse the consequences of policy reforms over time. In other cases, however, users are restricted in the choices they can make as some important policy areas including taxes on wealth or property, indirect taxes, (early-) retirement benefits, sickness benefits and in-kind transfers such as free school meals, subsidised transport and free health care are outside the scope of the model. Excluding these policy areas also facilitates cross-country comparisons since it is difficult to calculate a ‘standard’ value for these characteristics that is comparable across countries. For example:

- Households are assumed to have no unearned income or assets (or at least, have a low enough level of unearned income and assets that their tax-benefit position is unaffected);
- Households are assumed not to use “itemized” tax deductions that may be available for specific expenditure categories, such as commuting costs (where available, standard tax deductions are applied instead);
- In cases where the extended family or a former spouse are expected to provide financial support to those with no resources of their own, it is assumed that such support is not forthcoming.

In other cases, the model uses default values for certain characteristics. These are chosen to

²⁹ These will also be included in the model update for the 2018 policy year.

represent the most common situations or to be well-suited for illustrating relevant policy mechanics. In particular:

- In most scenarios, adults are assumed to be 40 years old (though a different assumption is made for this report).
- Families with children have two children aged 6 and 4.
- Individuals who are out of work and entitled to contributory unemployment benefits are assumed to have been in work and making social security contributions for a “long” time to ensure that they meet the conditions of a full contribution record.
- Housing costs are assumed to be 20% of the national average wage for all household types. While this may be “high” for some low-income households in particular, it allows the model calculation to capture any applicable ceilings to the housing costs that are applicable to housing-benefit claims in some countries.
- All adults in the household are assumed to comply with any job search conditions for receiving benefits.
- In countries with regional differences in the operation of the tax-benefit system, the model uses the default scheme set by central government where that exists, or else takes the scheme operating in a ‘typical’ region or state.

These are all reasonable assumptions to make and small variations often make little difference to the results. Assumptions can also be changed in situations where this is necessary (for example, when analysing the impact of childcare costs on parents’ financial work incentives, younger ages of children are assumed, and in this report the age of adults is increased to 50 to better reflect a ‘typical’ claimant of disability benefits).

It is also sometimes desirable to examine a range of scenarios to be read in conjunction with each other. For instance, net replacement rates are often calculated both with and without contributory benefits to account for the situations of those with short contribution records or who do not comply with relevant job-search conditions. If this is not done, however, it is important to keep these assumptions in mind when interpreting the results. Users should be aware that, for example, job-losers with very short contribution records will frequently receive much lower (or no) unemployment insurance benefits.

Assumptions for modelling disability benefits in TaxBEN

50. The new TaxBEN “disability” module calculates entitlements to long-term disability benefits designed to replace income from work. Other types of health-related benefits, including allowances designed to cover disability-related costs or needs, short-term sickness or disability benefits and benefits for those individuals who have been disabled since childhood, are not simulated. A full description of the benefits covered in each country is accessible online from a [companion note](#).

51. Entitlements to the disability benefits that are simulated by the model depend on a wide range of characteristics. While the module allows users to alter some of these characteristics some assumptions are made to keep the code clear and transparent:

- Only the first adult in a family can have a disability: their partner and children (if any) cannot.
- A person is assumed to have resided in the country in question since birth.
- In some countries, it is necessary to claim temporary sickness benefits for a period of time before the long-term disability benefits can be claimed: this period is ignored (i.e. it is assumed that the individual was working until they started claiming the disability benefit).

- In some countries, the level of disability benefits changes after an individual has been claiming for a certain period of time. This is taken into account through a new parameter denoting the number of months since the first payment of “permanent” disability benefits that can be chosen by the model user. Results in this report refer to the 4th month of benefit receipt.
- Any behavioural requirement related to eligibility such as participation in rehabilitation programmes or engaging in work-related activity is assumed to be met. However, any supplements paid for participation in such programmes are not modelled.
- In some cases, recipients of partial disability benefits can be registered as unemployed and receiving supplementary unemployment benefits. Such cases are not covered by the model.

52. There are other characteristics that can be changed by model users, but ‘typical’ values are used in all the cases examined in this report. In particular:

- Unlike the standard TaxBEN assumption of a 40-year-old person, the results in this report refer to the case of a 50-year-old (a more typical case for a claimant of disability benefits). This age refers to the age when disability is established as well as to the age when the first payment of a long-term disability benefit is made. Thus, any time in between these two events is ignored. In the model, it is possible to set adult’s age from 18 up to normal retirement age.
- Two main scenarios are considered for working history: (1) a person who started to work at age 19 and worked continuously until disability was established or (2) a person has never worked and has no contribution record. Additional scenarios for some countries allow for one career break and delayed entry into the labour market. The minimum work experience before the career break is at least 2 years. Two types of career breaks are modelled: inactivity and unemployment. In case of unemployment, it is assumed that a person is eligible for unemployment insurance (UI) benefit. The duration of UI is determined according to the rules prevailing in the year when a person applies for disability benefit. After UI expires, it is assumed that a person claims unemployment assistance (if available). The impact of a career break on disability benefit entitlement is examined in Box 2..
- Periodic reassessments of the degree of disability and the amount of disability benefits are not taken into account. In particular, when estimating Participation Tax Rates, it is assumed that the assessed disability level remains the same when the benefit claimant moves into work.

Modelling “pension-type” disability benefits:

53. Particular modelling difficulties arise in countries where disability benefits resemble pensions. In these cases the benefit entitlement depends on earnings across the claimant’s entire working career (or a long-term period), not just the period immediately preceding the benefit claim. Among the 12 countries covered in this project, four

countries have these types of benefits: the Czech Republic, Finland, Lithuania and Poland.³⁰

54. For cross-country comparability, it is assumed that benefit claimants earned a fixed proportion of the average wage prevailing in each year of their working life. Information on historical average wages (AW) is taken from the OECD tax-benefit database, the OECD pension database or national statistics databases and inserted in the model via a new variable. When the relevant time series is not long enough, historical AWs are imputed by applying the wage growth observed in the national data to the earliest available AW.

55. Individual working histories are constructed using the historical AWs and the percentage of the AW chosen for the individual-specific calculations. The way TaxBEN constructs the employment record can be described as follows: each observation in the data (i.e. an individual family for a given year and country) is “expanded” as many times as the number of years of their entire working history (which is set by the user). Each new observation can be therefore interpreted as a different year of the person’s working history. TaxBEN then attaches to each year the relevant annual wage received by the first adult member at a certain age. In case of a career break, observations for relevant years enter with zero annual wage (in case of inactivity) or relevant earnings base or notional earnings (in case of eligibility to unemployment insurance or assistance benefits, if such provisions are available). The total contribution record is then computed, taking into account both periods of paid contributions and credited periods.

Additional tax and benefit schemes not previously simulated:

56. Incorporating the disability module into the OECD tax-benefit model required expansion of other policy modules, as in some cases people with a disability are eligible to more generous supplements within other benefit schemes or special tax allowances and credits. For example:

- **Poland:** a different social assistance benefit, permanent social assistance, is available to those with disabilities;
- **Finland:** specific tax allowances and tax credits, a pension tax for high pensions, and a housing allowance for pensioners exist for those receiving disability pensions;
- **Sweden:** those claiming disability benefits are entitled to a housing supplement (*bostadstillägg*) and a particular housing supplement (*särskilt bostadstillägg*). The former is included in the model, while the latter is not.

57. In some countries, disability benefits are closely linked to unemployment insurance benefit calculations. If this is the case, the interdependencies between both types of benefits have been taken into account accordingly, namely in **Denmark**.

³⁰ In Sweden, benefit levels depend on the three years with the highest earnings during the last 5-8 years before the onset of the disability, so Sweden can be also considered among this group.

Model outputs

58. Disability benefits (DB) are classified into two main groups: disability benefits based on insurance schemes (contribution-based, denoted DI) and disability benefits based on assistance schemes (tax-financed, denoted DA), i.e. $DB = DI + DA$. If one of these schemes is not available in the country, the corresponding variable is set to zero. If there is more than one disability benefit of the same type, country-specific names are used to distinguish between the specific schemes, e.g. $DA = DA1 + DA2$. Social assistance schemes for people with disability are not included in the category “disability benefits (DB)” but will appear under the heading “social assistance (SA)”.

Future developments

59. Flexible earnings patterns: In countries with “pension type” disability benefits, users can specify only a single earnings level, that is, it is assumed that the adult earned the same proportion of the yearly average wage in each year they were working. Further developments could allow for more flexible earnings patterns, e.g. providing the model with ad-hoc (customized) earnings trajectories when calculating benefit entitlements. These trajectories can be based either on historical data (e.g. historical average wages, minimum wages or wage percentiles) or on hypothetical data (e.g. to analyse complex career patterns, including multiple career breaks and growing age-earnings profiles).

60. Sickness benefits: Another technical extension to the TaxBEN disability module could be to include sickness benefits (currently not modelled). Sickness benefits vary enormously in terms of levels and durations across countries, and also affect people’s “total lifetime benefit income”. The simulation of sickness benefits would enable to analyse benefit entitlements and work incentives over the full period from the onset of disability, rather than just once an individual became entitled to long-term disability benefits.

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