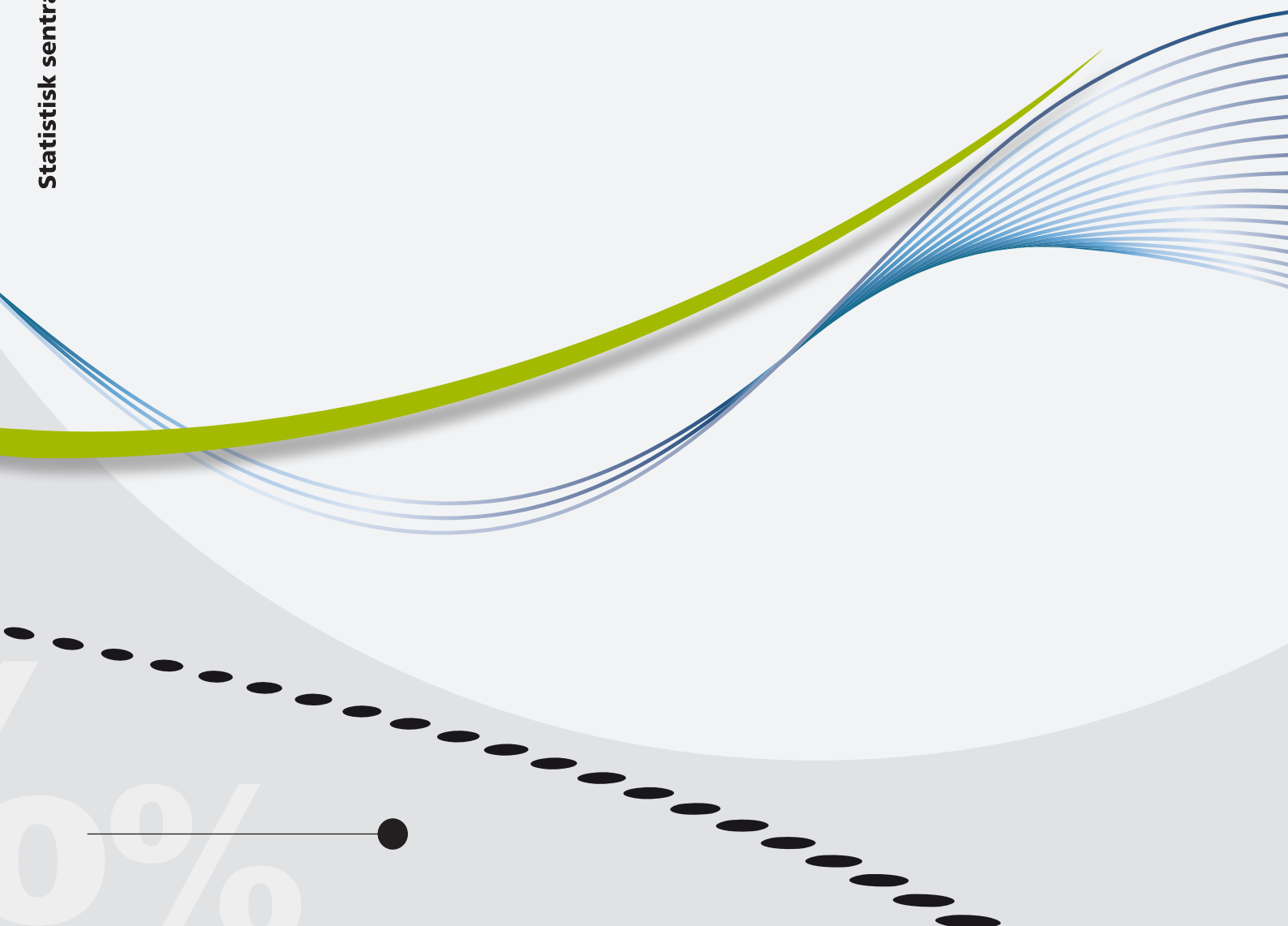




*Arve Hetland*

## **Benefit Analysis**

Documentation for the benefit analysis  
component of the OECD data table delivery





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Documentation for the benefit analysis component  
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In the series Documents, documentation, method descriptions, model descriptions and standards are published.

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## Preface

This is documentation for one part of a larger delivery of tables according to Statistics Norway internal reference W15/0716, specifically the tables delivered as part of the Benefit Analysis.

Statistisk sentralbyrå, 16. desember 2016

Elisabeth Nørgaard

## Abstract

This document specifies the data sources, assumptions, and constraint that are relevant to the tables that have been produced and delivered in response to the Benefit Analysis-part of a larger data delivery of tables to OECD (Statistics Norway's reference W15/0716). The specific data sources are not discussed in detail here, but references to further documentation are provided. Also provided here are some descriptive statistics of the data used in the tables delivered.

The benefit analysis consists of four tables, one for each of four areas of benefit/allowance:

1. Unemployment benefit
2. Disability benefit
3. Social assistance
4. Family allowances

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# 1. Assumptions and presumptions

## 1.1. General information

### Age at the start of the spell

For all tables, the age at the start of the spell is calculated as the number of years between date of birth and date of the start of the spell, measured in months, i.e. a person is considered to be one year in month of birth + 12 months. This means that a person born in January 1995 with a spell starting in January 2010 will be considered to be 15 years of age at the start of this spell, but would be considered to be 14 years of age if the spell started December 2009. Age is calculated at the start of each spell for persons experiencing more than one spell, and spells are selected on the person's age at the start of each individual spell.

The population "15-29 years of age at the start of the spell" include those who turn 15 in the month the spell starts, those who are still 29 years of age in the month the spell starts, and all ages between. So spells are not included if the person turned 30 years in the month the spell starts.

Note that most of the benefits and allowances considered here require a person to be 18 years of age before becoming eligible.

### Population

The population for these tables have been limited to those registered as inhabitants of Norway according to the National population register ("Folkeregisteret"). Specifically, for a spell to be included in these statistics, the person to whom the spell pertains must have been a registered inhabitant (of Norway) in the month the spell starts. For the purposes of this benefit analysis, no special considerations have been taken as to the status as inhabitant after the start, but most of these benefits are contingent on, at least on some level, residing in Norway.

### "Chaining" subsequent spells

For the benefit areas disability, social assistance, and family allowances subsequent spells are chained together into one longer spell, if the gap between spells is less than 3 months. Within each of these three areas spells are chained together regardless of the specific benefit received. If the gap between two spells is 3 months or more, they are considered as separate spells.

### Spell duration

In this analysis the resolution of spell duration for all benefits/allowances is calendar months. If a person received a benefit in a specific month, regardless of whether the benefit/allowance covers the whole month, this is counted as one month; spell-duration for a benefit is the number of subsequent months in which the benefit was received, plus up to two months between spells for disability benefits, social assistance and family allowances. For some benefits the underlying ("real") duration is counted in days, most importantly unemployment benefit and parental benefit, but these have been "rounded" to months in these tables. Specifically, spell duration is calculated as the number of months between the first month of receipt of the benefit/allowance and the last month, including both. If several consecutive spells are "chained" together to one spell, the spell duration is calculated as the number of months between the first month of the first spell and the last month of the last spell, including both, and including any gaps of up to two months.



## Education

Education is linked from the National Education Database NUDB. The detailed level of education has been grouped into the following categories:

1. Compulsory school only
2. Upper secondary school
3. Some college or short college-level course
4. University degree

Educational attainment is measured as of October 1 in the year that the spell starts, for all spells. For chained spells, the educational attainment for the first spell is used.

### 1.2. Unemployment benefit

For the unemployment benefit, only periods when a person is registered as having received the economic benefit “dagpenger” are considered. *All* periods in which a person received unemployment benefit are considered, regardless of the underlying status (i.e. unemployed (no work), partially unemployed, or other statuses).

In FD-Trygd unemployment is primarily registered as different cases of unemployment with different statuses, and with start and stop dates registered for the underlying status. In this analysis, however, these cases are rearranged to account for start and stop of “dagpenger”, regardless of whether this is one or many cases of differing unemployment statuses. Spell duration is then measured as the number of consecutive months in which “dagpenger” were received. Moreover, for this benefit, *only* consecutive months are considered part of a continuous spell; a gap of one month marks the end of one spell and the start of a new.

Benefits included in the Unemployment Benefit Analysis:

- Unemployment benefit

### 1.3. Disability benefits

For disability benefits spells are considered continuous if there are less than 3 months between two spell, regardless of the underlying benefit for each constituent spell. Any overlapping months are only counted once. For example, for the period considered here, a person might start with rehabilitation benefit, then get work assessment allowance, and end up with disability benefit; this is considered one spell and the duration is the sum of the length of each component, *plus* up to two months gap between benefits, *given* that any gaps between spells are two months or less.

Benefits and allowances included in the Disability Benefits Analysis:

- Disability benefit (pension) before and after 2011
- Work assessment allowance
- Temporary disability benefit
- Time limited disability benefit
- Rehabilitation benefit

### 1.4. Social assistance

For social assistance, as for disability above, spells are considered continuous if the gap between them is less than three months, regardless of which benefit is received during each individual spell. Any overlapping months are only counted once.

Benefits and allowances included in the Social Assistance Benefits Analysis:

- Financial assistance/social assistance
- Qualification program

## 1.5. Family allowances

For family allowances, as for disability above, spells are considered continuous if the gap between them is less than three months. Any overlapping months are only counted once.

Note that parental benefit is contingent on having been gainfully employed, and for the youngest parents the probability of having been employed will likely be significantly lower than for all parents. Those who do not qualify for parental benefit may qualify for a lump-sum grant on birth or adoption, which is a set sum per child. We do not have data for lump-sum that could be included here, and it would be meaningless as such to include this grant in these tables, as it by definition does not have any duration.

More information on lump-sum grant on birth or adoption can be found on NAV: <https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/lump-sum-grant-on-birth-or-adoption>

NAV also has some statistics (only in Norwegian) on lump-sum grant on birth or adoption:

<https://www.nav.no/no/NAV+og+samfunn/Statistikk/Familie+-+statistikk/Tabeller/personer-med-engangsst%C3%B8nad-i-l%C3%B8pet-av-%C3%A5ret-fordelt-p%C3%A5-alder.2006-2015.antall>

Benefits and allowances included in the Family Benefits Analysis:

- Parental benefit
- Single mother/father:
  - Transitional benefit
  - Child care benefit for working single parents
  - Supplemental benefits and support for tuition for education
- Cash-for-care benefit

## 2. Descriptive statistics

We include some tables below showing some descriptive statistics for each of the four areas. The tables are based on all records selected within the timeframe for the analysis, January 2008-December 2011, and not restricted by age or status as inhabitant at the start of the spell; the numbers are therefore somewhat higher than in the final tables as delivered, even for the age-group 15-29 years. The tables below contain several extra statistics compared to the final tables, but only for the total population, not broken down by background variables. These tables are included to give some more context for the main tables as delivered.

The number of persons reported in the tables below is a simple count of the number of unique national ID numbers for the spells included.

The number of censored spells is over all quite low, and has no or little discernible effect on the mean and median spell length. The exception is disability benefits, where censoring has a significant effect. As disability benefit is generally a long term benefit, this is as expected.

For all benefits, the mean and median number of spells per person represented is also low; the reasons for this may vary from benefit to benefit, but it is not surprising.

Note that because of the chaining of spells the *number* of spells is underestimated and the *duration* of spell is overestimated for all chained benefits, when compared to results without chaining of spells. This over-/underestimation is more pronounced for social assistance compared to the other benefits in this study, and even more pronounced for social assistance spells of more than 6 and more than 12 months duration. The censored mean spell length for social assistance after chaining is more than 75% longer than before chaining (for the age-group 15-29 years).

Also note that for social assistance a significant number of spells have duration of more than 12 months, but note that because of the chaining done for social assistance, a person might not have received social assistance in all of the months. In theory a person might receive social assistance every 3 months and be counted here for the full duration of the period, though this is not very likely to happen.

**Table 2.1 Unemployment benefits<sup>1</sup> – All spells starting January 2008 – December 2011**

	Total	Age at start of spell	
		30+ years	15-29 years
Number of spells	403 519	272 609	130 910
Median spell length	5	5	5
Mean spell length	7,36	7,72	6,62
Median spell length (censored)	5	5	5
Mean spell length (censored)	7.35	7.7	6.62
Number of spells longer than 6 months	155 745	109 865	45 880
Number of spells longer than 6 months. % of all	38.6	40.3	35.05
Median spell length for spells > 6 months	12	12	11
Mean spell length for spells > 6 months	13.96	14.37	12.97
Median spell length for spells > 6 months (censored)	12	12	11
Mean spell length for spells > 6 months (censored)	13.92	14.32	12.96
Number of spells longer than 12 months	71 038	52 555	18 483
Number of spells longer than 12 months. % of all	17.6	19.28	14.12
Median spell length for spells > 12 months	19	19	18
Mean spell length for spells > 12 months	19.74	20.07	18.78
Median spell length for spells > 12 months (censored)	19	19	18
Mean spell length for spells > 12 months (censored)	19.66	19.98	18.77
Number of censored spells (>36 months)	831	774	57
Number of persons	284 554	187 704	96 850
Median number of spells per person	1	1	1
Q3 number of spells per person	2	2	2
Mean number of spells per person	1.41	1.45	1.34

<sup>1</sup> Unemployment benefit is here defined as receiving "dagpenger".

Source: Statistics Norway.

**Table 2.2 Disability benefits<sup>2</sup> – All spells starting January 2008 – December 2011**

	Age at start of spell		
	Total	30+ years	15-29 years
Number of spells	595 324	530 521	64 803
Median spell length	51	52	37
Mean spell length	43.86	44.6	37.78
Median spell length (censored)	36	36	36
Mean spell length (censored)	28.38	28.74	25.41
Number of spells longer than 6 months	535 381	480 408	54 973
Number of spells longer than 6 months. % of all	89.93	90.55	84.83
Median spell length for spells > 6 months	55	57	47
Mean spell length for spells > 6 months	48.42	48.92	44.01
Median spell length for spells > 6 months (censored)	36	36	36
Mean spell length for spells > 6 months (censored)	31.21	31.41	29.43
Number of spells longer than 12 months	494 925	446 042	48 883
Number of spells longer than 12 months. % of all	83.14	84.08	75.43
Median spell length for spells > 12 months	60	60	50
Mean spell length for spells > 12 months	51.61	51.97	48.32
Median spell length for spells > 12 months (censored)	36	36	36
Mean spell length for spells > 12 months (censored)	32.99	33.1	31.93
Number of censored spells (>36 months)	369 576	336 878	32 698
Number of persons	561 618	503 432	58 186
Median number of spells per person	1	1	1
Q3 number of spells per person	1	1	1
Mean number of spells per person	1.06	1.06	1.12

<sup>2</sup> Disability benefits: Disability benefit, work assessment allowance, temporary disability benefit, time limited disability benefit, and rehabilitation benefit.

Source: Statistics Norway.

**Table 2.3 Social assistance<sup>3</sup> – All spells starting January 2008 – December 2011**

	Age at start of spell		
	Total	30+ years	15-29 years
Number of spells	366 149	224 891	141 258
Median spell length	3	3	3
Mean spell length	7,55	7,69	7,34
Median spell length (censored)	3	3	3
Mean spell length (censored)	6.97	6.98	6.95
Number of spells longer than 6 months	111 275	67 092	44 183
Number of spells longer than 6 months. % of all	30.39	29.83	31.28
Median spell length for spells > 6 months	14	14	13
Mean spell length for spells > 6 months	19.48	20.44	18.04
Median spell length for spells > 6 months (censored)	14	14	13
Mean spell length for spells > 6 months (censored)	17.57	18.07	16.8
Number of spells longer than 12 months	62 055	38 302	23 753
Number of spells longer than 12 months. % of all	16.95	17.03	16.82
Median spell length for spells > 12 months	23	24	22
Mean spell length for spells > 12 months	27.74	28.98	25.74
Median spell length for spells > 12 months (censored)	23	24	22
Mean spell length for spells > 12 months (censored)	24.31	24.84	23.45
Number of censored spells (>36 months)	13 090	9 123	3 967
Number of persons	214 773	126 123	88 650
Median number of spells per person	1	1	1
Q3 number of spells per person	2	2	2
Mean number of spells per person	1.64	1.7	1.54

<sup>3</sup> Social assistance: Social assistance and the qualification program.

Source: Statistics Norway.

**Table 2.4 Family allowances<sup>4</sup> – All spells starting January 2008 – December 2011**

	Age at start of spell		
	Total	30+ years	15-29 years
Number of spells	568 710	372 009	196 701
Median spell length	8	6	9
Mean spell length	9.29	8.3	11.16
Median spell length (censored)	8	6	9
Mean spell length (censored)	9.03	8.14	10.7
Number of spells longer than 6 months	310 773	183 577	127 196
Number of spells longer than 6 months. % of all	54.65	49.35	64.66
Median spell length for spells > 6 months	11	11	11
Mean spell length for spells > 6 months	14.47	13.72	15.57
Median spell length for spells > 6 months (censored)	11	11	11
Mean spell length for spells > 6 months (censored)	14	13.4	14.85
Number of spells longer than 12 months	102 010	55 797	46 213
Number of spells longer than 12 months. % of all	17.94	15	23.49
Median spell length for spells > 12 months	20	19	21
Mean spell length for spells > 12 months	24.13	22.94	25.55
Median spell length for spells > 12 months (censored)	20	19	21
Mean spell length for spells > 12 months (censored)	22.67	21.91	23.58
Number of censored spells (>36 months)	14 816	5 986	8 830
Number of persons	416 238	266 588	149 650
Median number of spells per person	1	1	1
Q3 number of spells per person	2	2	1
Mean number of spells per person	1.32	1.34	1.28

<sup>4</sup> Family allowances: Parental benefit, single mother/father (transitional benefit, child care benefit for working single parents, supplemental benefits and support for tuition for education), cash-for-care benefit.

Source: Statistics Norway.

## References

### Data-sources

To get data for the highest attained education level as of 1. October each year we use The National Education Database, NUDB:

<http://www.ssb.no/en/omssb/tjenester-og-verktoy/data-til-forskning/utdanning>

Cash-for-care benefit: Monthly register files from NAV

For all other benefits and inhabitant status we use these tables from FD-Trygd:

- Population, status as inhabitant: F\_DEMO
- Unemployment benefit: F\_ARBSOK
- Work assessment allowance: F\_AAP
- Temporary disability benefit: F\_FUFOR
- Disability pension before and after 2011: F\_UFP / F\_PENSJ\_UFP
- Time limited disability benefit: F\_TU
- Rehabilitation benefit: F\_REHAB
- Financial assistance/social assistance: F\_SHJ
- Qualification program: F\_KVALIF
- Parental benefit: F\_FP
- Single mother/father:
  - Transitional benefit: F\_ENSL\_OVGST
  - Child care benefit for working single parents: F\_ENSL\_BTLSN
  - Supplemental benefits and support for tuition for education: F\_ENSL\_UTDST

About FD-Trygd, including up-to-date list of tables and variables (in Norwegian only):

<http://www.ssb.no/omssb/tjenester-og-verktoy/data-til-forskning/fd-trygd>

List of tables and variables available in FD-Trygd (English; out of date for some benefits):

[http://www.ssb.no/a/english/publikasjoner/pdf/doc\\_200705\\_en/doc\\_200705\\_en.pdf](http://www.ssb.no/a/english/publikasjoner/pdf/doc_200705_en/doc_200705_en.pdf)

### Background information about the benefits/allowances, from NAV:

- Unemployment benefit (“dagpenger”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/unemployment-benefits>
- Work assessment allowance (“arbeidsavklaringspenger”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/work-assessment-allowance-aap>
- Disability benefit (pension) before and after 2011 (“uførepensjon/uføretrygd”):  
<https://www.nav.no/en/Home/Benefits+and+services/Pensions+and+pension+application+from+outside+Norway/Disability+benefit>
- Temporary disability benefit (“foreløpig uføretrygd”): Discontinued
- Time limited disability benefit (“tidsbegrense uføre”): Discontinued
- Rehabilitation benefit (“rehabiliteringspenger”): Discontinued

- Financial assistance/social assistance (“økonomisk sosialhjelp”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/financial-assistance-social-assistance>
- Qualification program (“kvalifikasjonsprogrammet”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/qualification-programme>
- Parental benefit (“foreldrepenger”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/parental-benefit>
- Cash-for-care benefit (“kontantstøtte”):  
<https://www.nav.no/en/Home/Relatert+informasjon/cash-for-care-benefits-for-the-parents-of-toddlers--805369180>
- Single mother/father (“enslig mor eller far”):
  - Transitional benefit (“overgangsstønad”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/transitional-benefit>
  - Child care benefit for working single parents (“stønad til barnetilsyn”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/child-care-benefit>
  - Supplemental benefits and support for tuition for education (“tilleggsstønader og stønad til skolepenger”):  
<https://www.nav.no/en/Home/Benefits+and+services/Relatert+informasjon/Supplemental+benefits+and+support+for+tuition+for+education>

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