Developing longitudinal statistics on recipients of welfare benefits and their labour market position

Thematic area addressed: IV: The production of official statistics

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Text A characteristic of the Norwegian welfare state is comprehensive welfare benefits aimed at providing subsistence level, as well as improving labour market participation. This paper will describe a project where Statistics Norway has developed a new and more dynamic statistics on recipients of some central welfare benefits by measuring their position in the labour market and welfare system over a period of time after benefit reception. Contrary to ordinary cross sectional statistics, this new statistics has a longitudinal approach, following the recipients over a period of five years. The paper will describe some of the main challenges faced during the process of developing this statistics, focusing on data availability, definition of populations and the construction of indicators. In the Norwegian case, the access to comprehensive register data is an obvious advantage, and the project extracted data from Statistic Norway's events database, containing information on the population's benefit reception and labour market participation as events. The paper describes how this made it possible to measure the duration and sequence of benefits over a period of time, including labour market participation. The definition and construction of the longitudinal statistical populations, unique for each of the welfare benefit included in this new statistics, was a central element in the project. The criteria for inclusion in the population were reception of benefits over a period of time, and eligibility for the labour market in an output period. The benefits in question are work assessment allowance, social assistance, and sickness allowance. Indicators must take into consideration the variation over the measurement period. At the same time, when

including both labour market position and benefit reception, the challenge of simultaneous events was an issue. The paper will present the different indicators, now published by Statistics Norway.

Keywords: longitudinal statistical populations, welfare benefits, labour market position

1. The need for longitudinal statistics on welfare schemes and benefits

Norway and the Nordic countries are known for their high employment rates, especially among women. High labour market participation can be seen as a prerequisite for a comprehensive welfare state, of which one of the main characteristics is universal and relatively generous welfare benefits for persons outside the labour market. In addition, to support the high labour market participation, benefits are connected to schemes aimed at helping the recipients in entering or re-entering employment. As these benefits are quite comprehensive and expensive, and make up an important parts of the welfare model, it is also important to develop statistics to measure how these benefits meet their aim, and who among the recipients achieve improved labour market participation.

Historically, cross sectional welfare statistics is dominating, measuring the number of recipients and different statuses in the labour market at a given point of time. For a long time, an intention at Statistics Norway has been to develop more dynamic, meaning longitudinal, statistics and indicators in this important area. The advantages of a longitudinal approach are the possibilities to illustrate "flows" through different welfare schemes and long term outcomes in an efficient way, and thereby give us more important information beyond a more "static" status in a welfare scheme or in the labour market at a specific point in time. Longitudinal indicators can also give more detailed information regarding aspects as flows from one welfare scheme to another, and the long term effects on their labour market status.

In this kind of statistics, different personal characteristics such as education, sex, age and immigrant status are important breakdowns to follow outcomes for different groups in the population. This kind of statistical information is requested by the expanding heterogeneous users of welfare statistics in Norway. The aim of the statistics labeled "*Welfare benefits – employment and receipt of benefits*" is to describe trends between different welfare benefits and trends in the labour market.

1.2. Data source for constructing longitudinal indicators

To be able to develop this kind of longitudinal statistics, individual register data linking personal information on all relevant variables is necessary. For this statistics, the event database FD-Trygd has been used. Here, we find data from different types of welfare benefits from administrative registers as well as other types of statistical data. The individual is the statistical unit. Information is linked by personal identification number, and consists of registration, and also the dates of events in the life-course of persons. These registrations can then be assembled to individual episodes- or longitudinal stories (longitudinal data) which then constitute the basis for longitudinal data on the individual level. They can also be aggregated to a group of individuals or a whole population.

FD-Trygd consists of information from administrative registers from 1992. The welfare registers which constitutes some of the data sources in FD-Trygd, the basis for developing these dynamic statistics as presented in this paper, are the following:

1) Work assessment allowance (WAA)
2) Social assistance
3) Sickness benefit

Out of the three registers mentioned here, Statistics Norway has the main responsibility only for the social assistance register, which is collected through KOSTRA (Municipality-State-Reporting). The two other registers have been transferred from the Norwegian Labour and Welfare Directorate (NAV) to Statistics Norway. Thereafter they have been processed and transferred to the event database FD-Trygd. All administrative register and data must be prepared before input to FD-Trygd.

Linked to these data on social benefits, we have register data on individual level providing information on participation in the labour market. Information on both employment and the agreed number of hours to be worked during a week is available. Our indicators on labour market participation combine these two elements, giving information on both in or out of work, and the number of agreed hours. Unfortunately, there is no information on the actual hours worked. Administrative data on salaries is used to verify the data on employment in FD-Trygd. "In work" in year n means that the calculated number of hours of work in this year is greater than zero, i.e. the person has been employed during the year.

Individual level information on highest level of education (ISCED codes) from the Norwegian National Education Database (NUDB) and demographic background variables

(sex, age, immigration category, and country background) from the Central Population Register (CPR) is merged with event data from FD-Trygd.

We have extracted the data which form the basis for the statistical tables from FD-Trygd through SQL. Thereafter we have arranged the data from the event base in a dataset for developing tables in a longitudinal design.

1.3   Facts on welfare benefits

There are different types of welfare benefits and schemes in Norway. In this new statistics we decided to look into three of the most substantial ones, already mentioned above:

WAA: *a relatively new temporary benefit introduced on 1ˢᵗ of March 2010, which simultaneously replaced the following benefits: 1) temporary disability benefit; 2) vocational rehabilitation allowance and 3) rehabilitation grant. WAA can in principle be paid to a recipient for up to 4 years, with a possible extension in certain cases. This allowance aims to provide income in a transitional period where, due to illness or injury, a person has a need for employment initiatives, medical treatment or other follow-up by NAV in order to return to work.*

Social assistance: *The purpose of the social assistance in the Norwegian welfare system is to give temporary relief ("Safety net at the bottom") in difficult life situations where there are no other possibilities for income from work or so-called "ordinary" welfare benefits. The social assistance statistics gives information about: the number of recipients, average payments, total expenditure and development of economic social assistance. The statistics only cover payments in cash. Social assistance includes both allowances and loans. All figures in the statistics refer to the gross amount received. Neither public reimbursements nor repayment of loans are registered. Economic assistance does not include expenses for different social services such as institutionalizations. There is no limit in how many years it is possible to receive this benefit.*

Sickness benefit/long-term sickness: *Sickness benefits compensate for loss of income for those who are occupationally disabled due to an illness or injury. In the new statistics we restricted the population to those receiving long-term sickness benefits. Long-term receipt of sickness benefits is defined here as continuous sickness absence of 180 days or more from the start to end date during the period of* sickness absence, *where the start and*

end are defined from a continuous period in FD-Trygd. It is possible to receive sickness benefits for 52 weeks.

2. Developing indicators and statistics

There are different aspects and challenges regarding duration and "flows" when considering the welfare benefits for the purpose of statistics, depending on which scheme/benefit we are studying.
Each scheme has specific purposes and arrangements, and this had to be taken into consideration when developing longitudinal indicators (see facts).

Social assistance and sickness benefit are welfare benefits where the recipients can "flow" in and out of the schemes depending on needs, health and labour market status. WAA is a more permanent scheme limited to a period of time. A common feature is that they all aim at recipients (re-)entering the labour market.

To construct relevant indicators, we focused on both duration of receipt of benefit and the relation to the labour market over a period of years. Each release of these statistics is based on a five-year period, although each of the four sub-areas in the statistics use this five-year period in slightly different ways. In the following definitions, year t is the first year of the publishing period, and the publishing period is therefore from year t until year $t+4$. During this period, the outcome is observed, mainly as the relation to the labour market and social benefits.

When designing statistics aimed at following persons over a lengthy period of time, the definition of populations had to differ from a cross sectional approach. To avoid outcomes related to "exit" from the population, only person registered as residents **both** at the beginning and end of the period covered by the statistics were eligible. Those who died or emigrated from the country during our period of observation, were excluded from the populations, even though they may have been recipients of one or more of the benefits in question at the beginning of our period. Also, to avoid old-age pension as an outcome, and to ensure that those benefits in question were relevant, age limits were set so that the populations did not include persons above the age of 67 by the end of the period.

During the development of the statistics, it also became clear that we wanted to avoid measuring, or even try to measure, effects of benefit reception. As a consequence, we only included persons who actually received one out of the three benefits during a specified period

of time. Those not receiving a benefit were excluded from the populations (see facts on populations). It is important to underline the fact that we tried to design the statistics as descriptive as possible, focusing on development and differences within the populations, avoiding effect analysis.

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The different populations:

Work assessment allowance (WAA): The population generally covers all those who received WAA in year *t* and were registered as resident as per 1 January in year *t* and resident as per 31 December in each of the years from year *t* until year *t+4*.

Long-term recipients of sickness benefit: The population is made up of persons who have been long-term recipients of sickness benefit in the years from *t-5* until *t-1*, and who were registered as resident and in the age group 18-62 years per 1 January in year *t*, and who were resident as per 31 December in every year from *t* until *t+4*.

Social assistance: The population is made up of all recipients of social assistance in year *t* who were registered as resident and in the age group 18-62 years per 1 January in year *t*, and who were resident as per 31 December in every year from *t* until *t+4*.

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Before deciding on indicators and breakdowns, data was analysed trying to define the most relevant statistical definition of variables. A report on these analyses were published, and later discussed in a reference group, consisting of members from Statistics Norway, NAV (Norwegian Labour and Welfare Directorate) and Ministry of Labour and Social Affairs. Following this process, the final tables to be published in the statistics were decided upon.

Outcome over a period of time may be shifting and complex. This is hard to reflect in statistical indicators, which has to simplify and focus on the main outcomes. This will be described in the following. The breakdowns by demographic characteristics such as sex, age and immigration status will not be described, although they are important part of the statistics as they describe how outcomes differ between groups. The same goes for benefit dependency as breakdowns for the some of the statistics, which is an essential part for some of the benefits described.

2.1. Description of indicators on the three different schemes/benefits

Social assistance is the lowest safety net of the welfare state, and contrary to other benefits, it can be received without any acquired rights. In principle, this benefit is short term to help recipients in a transition to becoming self-supporting. Nevertheless, analysis point out that many are quite dependent upon social assistance for a longer period of time. To illustrate this statistically, an indicator for social assistance dependency was developed. As previously mentioned, a prerequisite for being a part of the population is reception in year *t*, and

dependency is measured by counting the number of years a person has received social assistance for at least one month within the following five year period (*t – t+4*). The indicator shows only 22 per cent of the recipients received the benefit for only one year, 27 per cent received the benefit in 5 years (table 1). Another way of measuring dependency made possible by an event database, is measuring the number and length of incidents over the five year period (table 2). From this we find that 20 per cent have only one incident, while 29 per cent have two or more short incidences, but no long ones (the cutting point is 6 months).

As for the other benefits and schemes, labour market participation in the long run is an important outcome for social assistance recipients. To be able to describe this, we developed three different indicators. The first one measures the number of years with work in the period *t – t+4* for recipients in year *t*. The indicator clearly indicates the marginalised position in the labour market for social assistance recipients (table 3). Almost half, 48 per cent, had no years of work, while only 14 per cent had work in all 5 years. This indicator says nothing about the amount of work each year, so in addition, we developed indicators measuring the amount of work. The second indicator gives the average number of hours worked per year in *t – t+4* for recipients of social assistance in year *t*, depending on the number of years benefits were received (table 4). Corresponding to the previous indicator, 48 per cent had an average of zero hours. The indicator also clearly indicates that only a few of the recipients worked full time on average (9 per cent), and the amount of work has a clear negative correlation with social assistance dependency. Third, and finally, there is also an indicator showing the average number of hours worked each year in the period *t – t+4*, depending on the number of years receiving social assistance (table 5). Again, those most dependent on social assistance has the lowest average number of hours worked each year, but over all there is a tendency that the number of hours increases as years pass after receipt of social assistance.

Since persons dependent on social assistance have relative weak connections to the labour market, it is also of great interest to follow their use of other social benefits at the end of the five-year period following social assistance reception. Here, the most important combinations were selected and prioritized as shown in table 6. The most common outcome in the year *t+4* for those who received social assistance in *t* was disability pension (23 per cent), while only 19 per cent had what we might call a strong connection to the labour market.

Sickness benefits can only be received by persons who have been employed for at least 4 weeks, and employment is kept during the benefit reception period. The main goal for all is re-entering the labour market, primarily to ones prior job. Normally, sickness leave for shorter periods of time constitutes limited danger of falling out of the labour market, but long-term sickness leave has been proved to be linked to increased danger of being excluded or marginalised. Thus, measuring labour market participation following long term sickness was our priority when choosing indicators.

One indicator for long term sickness benefit recipients illustrates the outcome during the five years after benefit reception (see population). This variable combines information on in or out of work and the number of hours worked. It is meant to describe the continuum from full time employment in all years, to completely out of work. It is important to note that this indicator only describes the formal position in the labour market, not the actual hour worked, or even if the person has received any kind of social benefits, including sickness benefits. The value of this variable is that it describes which connection to the labour market the recipients have been able to keep, and how this differs among groups of recipients. In total, 21 per cent of all recipients had no work during the following five-year period, while only 15 per cent had what we label as full time work all years. The most common is keeping some work in all years, but not full time (36 per cent), while fewer have some work some of the years, but not all (28 per cent).

The other indicator describing connection to the labour market also includes receipt of welfare benefits, and measures the status in the year *t+4*, five years after the initial benefit reception defining the population. The aim here is to describe a more long term outcome regarding both employment, including the relation to two particular important welfare schemes for persons with reduced working ability (due to health or other reasons).

In theory, all of the above statuses may occur for one person during a year, making the lack of mutual exclusion between categories a challenge in the interpretation of the statistics. Nevertheless, this indicator provides important information on the long term outcome, especially when compared to the five year indicator on work (see above). As seen from the table, 68 per cent had a connection to the labour market five years after their long term sickness leave, 28 per cent received disability benefits. Both indicators are presented in tables by sex, age, education, and immigration background.

Work assessment allowance can only be received by persons with impaired work capability, and the scheme is aimed at clarifying the relation to the labour market. One might claim that the primary goal is work, and secondary the qualification for disability pension. Other outcomes are also possible. Given these aims, indicators are designed to describe the labour market participation and relation to social benefits for receivers of WAA. All indicators are presented in tables by sex, age, education, and immigration background.

First, WAA is limited to maximum four years, and the efficiency of the scheme can also be measured by how long participants stay in the scheme. An indicator taking recipients in the year t and measures their time of exit during the years t+4 (table 9), shows that 19 per cent of the recipients are still in the scheme at the end of this period, 33 per cent exits during the first two years.

To be able to measure WAA participants' connection to the labour market and other social benefits, we also developed an indicator illustrating their position each year after exit from WAA. Among other things, this is also dependent upon how long they stayed in WAA. An example for this indicator is shown as in table 10, where only those who exited during the first year of WAA are included (similar figures exist for those who exited during the second, third and eventually fourth year). From this table we see that less than half of the recipients exit to work, and that the positions in the labour market and social benefits are very stable in the years after exit. The outcomes in this table are not mutually exclusive, so there might be combinations of a number of them. A different indicator gives prioritised activities in the last year of the period (*t+4*), and again by looking at those exited during the first year of WAA, we see that 49 per cent are in work, 41 per cent receive disability pension (table 11). Finally, taking into consideration that work and disability are the major outcomes for WAA, and that these two might be combined, we also developed an indicator showing the combination of these two by number of years after exit from WAA. The result corresponds to what other indicators show, and also that status after exit from WAA tends to be stable over years (table 12).

Tables

Table 1. Recipients of social assistance, by number of years with social assistance, 2009-2013.

	Number	Per cent
Total	102 087	100
1 year	22 371	22
2 years	19 082	19
3 years	17 342	17
4 years	16 256	16
5 years	27 036	27

Table 2. Recipients of social assistance, by number and length of incidents, 2009-2013

	Number	Per cent
Total, all combinations of number and length of incidents	102 087	100
Two short incidents	9 870	10
Three or more short incidents, but not every year	19 952	20
One long and one or more short incidents, but not every year	17 301	17
One incident regardless of length, but not every year	20 298	20
Two or more long incidents, but not every year	7 630	8
Received soscial assistance in each year, regardless of length of incident(s)	27 036	27

Table 3. Recipients of social assistance, by number of years with social assistance and number of years with work, 2009-2013. Per cent.

	0 years with work	1 year with work	2 years with work	3 years with work	4 years with work	5 years with work
All, regardless years with social assistance	48	10	10	9	9	14
1 years with social assistance	35	7	7	9	13	29
2 years with social assistance	40	9	9	11	14	17
3 years with social assistance	46	11	11	11	10	11
4 years with social assistance	50	13	13	10	7	7
5 years with social assistance	65	13	9	6	4	3

Table 4. Recipients of social assistance, by working hours per year and number of years with social assistance, 2009-2013. Per cent

		Years of social assistance				
	Total	1 år	2 år	3 år	4 år	5 år
0 hours	65,4	48,7	55,9	63,7	70,7	83,9
1-499 hours	7,3	7	7,6	7,7	8,2	6,4
500-949 hours	5,5	6,6	6,4	5,8	5,8	3,7
950-1499 hours	6,8	9,7	8,5	7,7	5,9	3,3
1500-1949 hours	5,5	9,6	7,8	5,6	4	1,4
1950 hours or more	9,4	18,4	13,8	9,5	5,4	1,3

Table 5. Average calculated work hours for recipients of social assistance, by year in the period number of years with social assistance, 2009-2013.

		Years of social assistance				
	Total	1 year	2 years	3 years	4 years	5 years
The entire period	1 758	3 128	2 335	1 693	1 191	599
First year of the period	275	452	312	264	216	145
Second year of the period	298	579	373	251	188	108
Third year of the period	354	664	499	322	210	103
Fourth year of the period	402	706	566	412	264	111
Fifth year of the period	428	727	584	443	311	131

Table 6. Recipients of social assistance, by work and benefit situation, 2013.

	Number	Per cent
All combinations	102 087	100
Disability pension	23 810	23
Long term recipients of social benefit	13 394	13
Working 950 hours or more, no work assesment benefit	19 698	19
Working less then 950 hours, no work assesment benefit.	8 006	8
Working and work assesment benefit	4 396	4
Under education	3 205	3
Unemployed	5 853	6
Work assesment, not unemployed	16 808	17
Other combinations	6 917	7

Table 7. Long term recipients of sickness benefit during the sickness benefit period, level of work participation in the outcome period, 2009-2013

	Number	Per cent
All levels of work participation	390 076	100
No work in the period	81 257	21
Worked during 1 year	26 969	7
Worked during 2-4 years	84 667	22
Some work all years, at least 950 work-hours in 1-4 years	100 026	26
Some work all years, at least 950 work-hours in 5 years	40 592	10
Full-time work all years	56 565	15

Table 8. Long term recipients of sickness benefit during the sickness benefit period, by work and benefit situation, 2013

	Per cent
Working	68
Work assessment allowance	22
Disability benefit	28

Table 9. Recipients of work assessment allowance, by exit, 2010-2014

	Number	Per cent
All	196 547	100
Out after first year of the period	24 641	13
Out after second year of the period	38 241	20
Out after third year of the period	30 206	15
Out after forth year of the period	24 759	13
Exits in hte last year of the period	34 420	18
Receives work assessment allowance in desember of the last year of the period	36 628	19
Exits and enters work assessment allowance spells	7 652	4

Table 10. Recipients of work assessment allowance (per cent) who exited in the first year, by work and benefit status in the years after exit.

	One year after exit	Two years after exit	Three years after exit
Working 950 hours or more	38	38	38
Working less than 950 hours	11	11	11
Not working	51	50	51
Unemployed	6	5	5
Received disability benefit	54	53	52
Received social assistance	6	5	4
Long term sick leave	4	7	4

Table 11. Recipients of work assessment allowance who exited during the first year, by prioritised activity in the last year of the period. 2014

	Number	Per cent
All, regardless of activity	24 641	100
Working 950 hours or more	9 474	38
Working less than 950 hours	2 694	11
Unemployed	425	2
Received disability benefit	9 990	41
Old age pension or contractual pension	948	4
Received social assistance	156	1
All others	954	4

Table 12. Recipients of work assessment allowance who exited during the first year, by combinations of work and disability and number of years after exit, 2010-2014. Per cent.

	One year after exit	Two years after exit	Three years after exit
Work, but no disability benefit	37	38	38
Work and disability benefit	12	12	12
No work, but disability benefit	42	41	41
No work and no disability benefit	9	9	10

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