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**Working Paper**

## Micro-level dynamics of social assistance receipt. Evidence from 4 European countries

Discussion Papers, No. 797

**Provided in Cooperation with:**

Research Department, Statistics Norway, Oslo

*Suggested Citation:* Königs, Sebastian (2015) : Micro-level dynamics of social assistance receipt. Evidence from 4 European countries, Discussion Papers, No. 797, Statistics Norway, Research Department, Oslo

This Version is available at:

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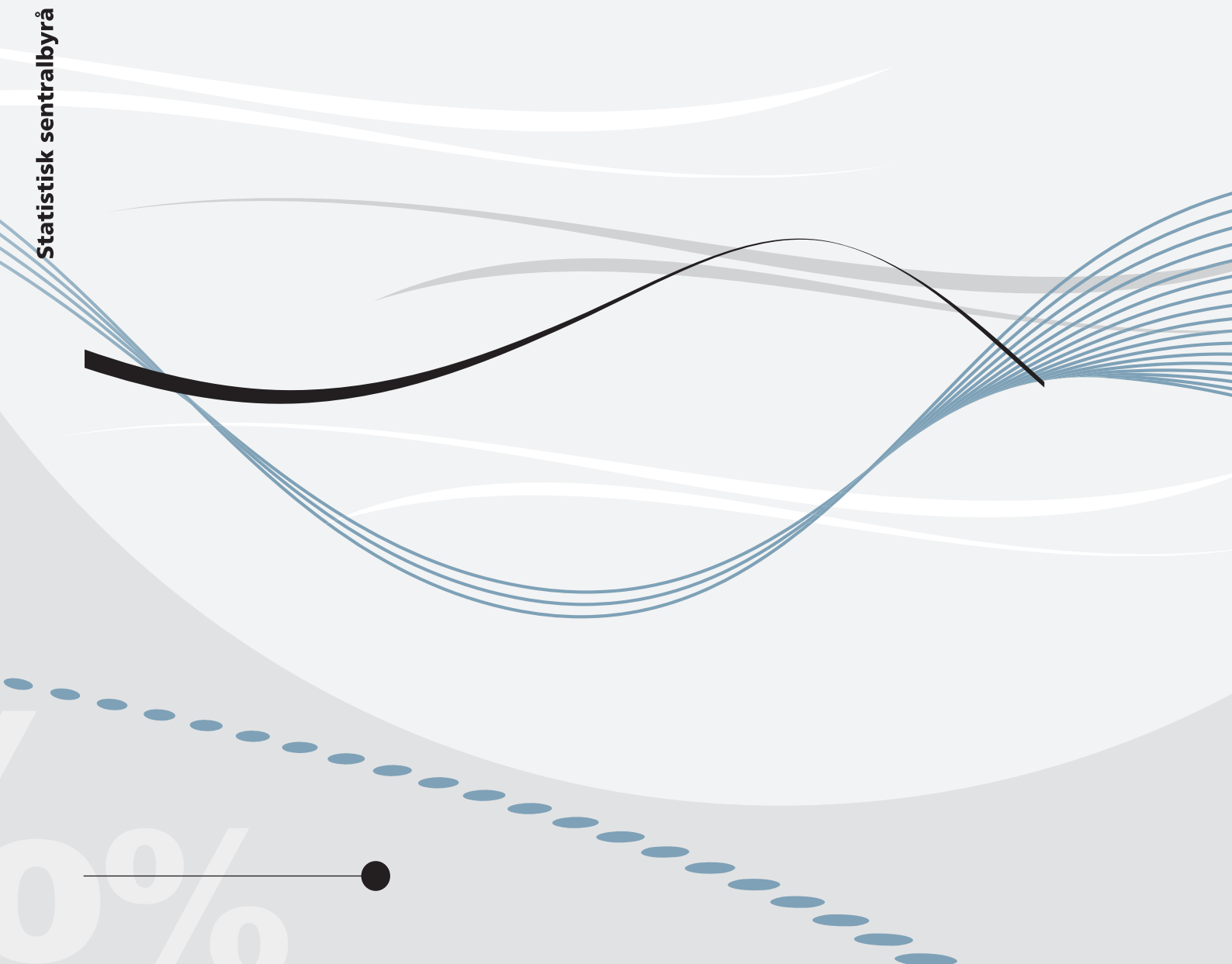
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*Sebastian Königs*

## **Micro-level dynamics of social assistance receipt**

Evidence from 4 European countries





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**Abstract:**

This paper presents a study of the monthly dynamics of social assistance benefit receipt – in particular the distribution of spell lengths and the incidence of repeat receipt – in four European countries: Luxembourg, the Netherlands, Norway and Sweden. The analysis is based on four separate administrative panel data sets with long observation periods. Benefit dynamics vary considerably across countries over the eight-year period from January 2001 to December 2008: In the two Nordic countries, short-term benefit receipt is the norm with only around 6% and 11% of spells in Norway and Sweden lasting longer than 12 months. Most recipients however have multiple spells, and the majority of benefit leavers return to benefits within three months of leaving. In Luxembourg and the Netherlands, long-term benefit receipt is frequent, with median spell lengths of 14 and 9 months, respectively, and one-third and one-quarter of all spells lasting 24 months or longer. Benefit leavers in these countries are by contrast much less likely to return to benefit receipt after exit. The total duration of benefit receipt per individual across spells is two to three times as high in the Netherlands and Luxembourg than in Norway and Sweden over the eight-year period.

**Keywords:** Social assistance dynamics, Welfare benefit dynamics, Benefit spell lengths

**JEL classification:** I38, J60

**Acknowledgements:** A modified version of the analysis presented in this paper is included in a more comprehensive OECD Social, Employment and Migration Working Paper (Immervoll, Jenkins & Königs, 2014). I thank Rolf Aaberge, Wiji Arulampalam, Tony Atkinson, Manudeep Bhuller, Steve Bond, Ian Crawford, Herwig Immervoll, Stephen Jenkins and Monika Queisser for helpful comments. I am also grateful to Marianne Loutsch at the IGSS for her assistance and advice with the Luxembourg data. Financial support from the Research Council of Norway (194339) and the INET grant INO1200010 by the Institute for New Economic Thinking at the Oxford Martin School is gratefully acknowledged. The usual disclaimer applies. In particular, the views expressed in this paper do not represent the official positions of Statistics Norway, the OECD or the governments of OECD member countries.

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**Discussion Papers**

comprise research papers intended for international journals or books. A preprint of a Discussion Paper may be longer and more elaborate than a standard journal article, as it may include intermediate calculations and background material etc.

## **Sammendrag**

Denne artikkelen presenterer resultatene fra en analyse av fordelingene av varigheten som sosialhjelpmottaker i Luxembourg, Nederland, Norge og Sverige.

# 1 Introduction

Most OECD countries operate extensive minimum-income benefit systems designed to guarantee an adequate standard of living to households and individuals with insufficient means from other sources. Means-tested ‘social assistance’ or ‘welfare’ benefits target unemployed individuals who lack the necessary employment and contribution record to be entitled to insurance-based unemployment benefits and those who have exhausted their rights to such benefits.<sup>1</sup> In many countries, social assistance can moreover provide a top-up to earnings for low-income workers and their families. The support provided through social assistance is typically intended – implicitly or even explicitly – to be temporary covering employable individuals during periods of economic hardship. Benefits can however in principle be received for an unlimited time period as long as the recipient continues to pass the means-test and satisfy other eligibility criteria.<sup>2</sup>

Rising caseload numbers in the 1980s and early 1990s (as documented for instance by Gough, Bradshaw, Ditch, Eardley & Whiteford (1997)) and the resulting burden to public finances led to growing concerns about long-term social assistance receipt. Under the impression – be it right or wrong – that a significant share of recipients rely on benefits for prolonged time periods, public and academic debates evolved around the question whether benefit receipt might have ‘scarring effects’, creating its own dependence and thus leading to ‘welfare traps’ (Plant, 1984). Such debates and the financial pressure from rising welfare reliance resulted in major welfare reforms in a number of OECD countries – notably in the United States, the United Kingdom and Germany. These reforms emphasised an ‘activating’ approach to benefit provision by tightening eligibility criteria, strengthening conditionality, and increasing support to employable recipients.<sup>3</sup>

In the academic work on social assistance receipt, there has been a long interest in studying the drivers of benefit receipt and in particular the incidence of long-term dependence (see for instance Bane & Ellwood (1983) for an early contribution). The literature aims to contribute to a better understanding of the incentive structures inherent to benefit systems and to an improved targeting of policies at those who are likely to benefit the most. Measures to support or ‘activate’ unemployed benefit recipients – such as job-search assistance, counselling or work experience programmes – should be well-targeted and tend to work best when implemented early-on in a benefit spell (Martin, 2000). Policy design therefore requires evidence on who receives benefits, what recipient groups are likely to remain on benefits for longest, and what the chances are of remaining self-sufficient for those who manage to leave benefits. Yet, remarkably little evidence exists to date on these ‘micro-dynamics’ of benefit receipt, especially in Europe.

The principal obstacle for such work to date has been the lack of high-quality micro-level panel data with short observation intervals. Survey-based panel data sets often provide reliable information on benefit receipt and household composition at the annual level only.<sup>4</sup> Administrative records, which could provide higher-frequency observations (and which often also come with larger sample sizes, lower attrition rates, and a higher data quality) are seldom available

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<sup>1</sup>Parts of the results of this paper were produced during a period when the author had a part-time position at the Group of Microeconomics at Statistics Norway.

<sup>2</sup>An exception is the U.S. Temporary Assistance for Needy Families (TANF) that generally comes with a 60-month lifetime limit (for a discussion see Grogger (2003, 2004) and Grogger & Michalopoulos (2003)).

<sup>3</sup>For a recent overview of the institutional features of social assistance systems in OECD countries see Immervoll (2010).

<sup>4</sup>An exception is the U.S. Survey of Income and Programme Participation (SIPP) that is based on four-monthly interviews but whose panels only run for a maximum of four years.

for research purposes. Much of the existing research on spell lengths and the frequency of long-term benefit receipt is therefore based on annual data. An obvious limitation of such studies is that they do not distinguish between single long spells and a series of recurrent shorter spells. Where data at monthly or quarterly intervals are available, observation periods tend to be short, making an analysis of re-entry into benefits of benefit leavers (sometimes unfortunately referred to as ‘recidivism’) difficult.

In this paper, I describe the patterns of social assistance benefit receipt in four European countries – Luxembourg, the Netherlands, Norway, and Sweden – based on long panels of monthly administrative data. The paper adds to the literature on social assistance dynamics by providing comparable evidence on the length of benefit spells in these countries. For Luxembourg, the Netherlands and Sweden, this is first such analysis at the national level that I am aware of. For Norway, the paper updates and extends an earlier analysis for the 1990s by Dahl & Lorentzen (2003a). A main contribution of the paper lies moreover in that it exploits the long observation periods of the data sets by studying the frequency of repeat benefit receipt, an issue on which there currently exists little evidence.

The first part of my analysis provides an overview of social assistance benefit receipt rates in the four countries. There has been no uniform trend in benefit receipt over the last decade or so, with receipt rates having declined in the Netherlands and Norway, having remained stable in Sweden, and having risen in Luxembourg. In the late 2000s, benefit receipt rates for the working-age population varied between 2% in Norway and 4% in Luxembourg and the Netherlands. Comparing receipt rates and transition rates for monthly and annualized data, I find that, unsurprisingly, annualized rates of benefit receipt substantially overestimate the frequency of benefit receipt in any single month of the year. The magnitude of this effect depends on the degree of turnover in benefit receipt and is much higher in Norway and Sweden than in Luxembourg and the Netherlands.

In the second part of the paper, I present evidence on the paths that individuals take into and out of social assistance for the period from January 2001 to December 2008. There is substantial heterogeneity in benefit spell lengths, both within and across countries. In the two Nordic countries, short-term benefit receipt is the norm with median spell lengths of only two months, and with only 6% and 11% of spells in Norway and Sweden lasting longer than one year. In Luxembourg and the Netherlands, long-term benefit receipt is frequent: Median spell lengths are 14 and nine months, respectively, and 35% and 24% of all benefit spells last 24 months or longer. Benefit leavers are however much more likely to return into benefits in Norway and Sweden, and time until re-entry into benefits for benefit leavers moreover is typically very short. The total duration of benefit receipt per recipient across spells however remains shorter in the two Nordic countries with a median ‘net duration’ of 7 and 10 months in Norway and Sweden, respectively, compared to 23 and 33 months in the Netherlands and Luxembourg.

The remainder of this paper is structured as follows: Section 2 provides a review of the existing work on individual-level patterns of social assistance receipt. Sections 3 and 4 give a brief overview of the institutional framework in the four countries and present the data sources used in the analysis. In Section 5, I describe the aggregate dynamics of benefit receipt, before presenting in Section 6 results from my analysis of the micro-dynamics of benefit receipt.



Section 7 concludes.

## 2 Relevant literature

The earliest available evidence on the duration of social assistance benefit receipt is based on annual household survey data on the receipt of Aid to Families with Dependent Children (AFDC)<sup>5</sup> in the United States. Bane & Ellwood (1983) and O'Neill, Bassi & Wolf (1987) study the receipt of AFDC in the late 1960s and 1970s using data from the Panel Study of Income Dynamics (PSID) and the National Longitudinal Survey of Young Women, respectively. Hoynes & MaCurdy (1994) document developments in the distribution of spell lengths over a 20-year period until 1989 again based on PSID data and relate them to changes in recipient characteristics and in the economic environment. In a seminal study, Bane & Ellwood (1994) use again PSID data for the late 1960s to 1980s to study AFDC spell lengths and the return to benefits of welfare leavers. They raise the important methodological point that when measuring spell lengths, it is crucial to distinguish between results obtained from a sample of individuals receiving benefits *at a certain point in time* and those *beginning a spell* in that period. This finding is discussed in more detail further below. One common conclusion of these studies is that while there is clear evidence of long-term benefit receipt, the large majority of spells are relatively short. An obvious limitation of studies based on annual data is however that the measurement of spell lengths is quite imprecise. For individuals who remain on benefits for prolonged periods, benefit spell lengths will be overestimated as no distinction can be made between single long spells and a series of recurrent shorter spells.

Later studies of U.S. welfare benefit dynamics that use information at the monthly level are typically also based on survey data. A series of articles use data from the Survey of Income and Programme Participation (SIPP): Fitzgerald (1991, 1995) studies AFDC spell lengths over a period of 32 months, Harris (1993) examines to what extent single mothers combine receipt of AFDC with work, and Blank & Ruggles (1994) and Harris (1996) look at re-entries to AFDC benefit receipt among welfare leavers over periods of up to three and up to six years, respectively. Using data from the National Longitudinal Survey of Youth (NLSY) for the years 1979 to 1989, Pavetti (1993) compares AFDC spell lengths obtained from monthly and annualized data. She finds that spell lengths are indeed overestimated in the annualized data, though the magnitude of this effect is relatively modest.<sup>6</sup>

One concern about these studies is that survey-based data on benefit receipt may not be very reliable. Even though interviews in the SIPP are conducted at four-monthly intervals and thus relatively frequently, Blank & Ruggles (1994) report a 'seam bias problem' observing a disproportionately large number of benefit transitions where interview periods start and end. Similarly, Pavetti (1993) observes that in the NLSY, 22% of all welfare spells last exactly from January to December, and that December endings account of 47% of all spell endings. This casts doubts on the reliability of these results.

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<sup>5</sup>AFDC was the precursor of Temporary Assistance for Needy Families (TANF), which was introduced in 1996.

<sup>6</sup>Based on monthly data, Pavetti estimates that 70% of all starting spells last two years or less and that only 7% of spells last eight years or longer. When annualizing these data, she finds that the share of spells lasting no longer than two years drops to 47% while the proportion of spells with a length of eight years or above rises to 12%.

A rare example of an early study of welfare benefit dynamics based on monthly data from administrative sources comes from Blank (1989), who, using six years of data from Denver and Seattle for the early 1970s, finds weak evidence for duration dependence in AFDC receipt. Hoynes (2000) presents evidence on receipt of AFDC in California based on administrative data for the period from 1987 to 1992. The spell lengths she finds are relatively similar to those calculated in previous studies that use survey data, with 28% of spells lasting at most six months and 38% lasting over two years. Among benefit leavers, 41% re-enter within two years of leaving.

From the late 1990s, increased availability of data from administrative records for research purposes primarily outside the U.S. has allowed researchers to produce what are arguably more reliable results on the length of benefit spells. For Canada, Barrett & Cragg (1998) study welfare use in the province of British Columbia using administrative data for the 1980s and early 1990s. They find benefit duration to be typically short, with 75% of spells ending within six months. Repeat benefit receipt however is frequent, with 25% of benefit leavers returning within three months and half of all benefit leavers returning within a year. Wilson (1999) uses administrative data from New Zealand to study benefit receipt for a cohort of welfare receivers from 1993 over a period of five years. While only 5% of benefit recipients remained on benefits for the entire period, more than one-third were still receiving benefits at the end of the observation period. A challenge therefore appears to be not so much to quickly move recipients off benefits, but rather to ensure that they remain self-sufficient after having left.

A series of articles based on fortnightly administrative data from the Australian Longitudinal Data Set (LDS) illustrate again the high frequency of repeated spells and emphasise the importance of considering transfers across different income-support programmes. For the 1995 inflow sample of recipients of means-tested single parent benefits, Gregory & Klug (2003) show that spell lengths tend to be short with 45% of all spells lasting shorter than one year. However, nearly half of all recipients had spells of other types of income-support benefits during the 5<sup>1</sup>/<sub>2</sub>-year observation period (though this includes receipt of Newstart Allowance, Australia's unemployment benefit). Tseng & Wilkins (2003) show that up to one-third of the Australian working-age population touches on at least one of various income-support benefits in a given year; one-sixth of all recipients continuously receive support over the same 5<sup>1</sup>/<sub>2</sub>-year period. Tseng, Vu & Wilkins (2008) find that 'churning' is a typical feature of income-support receipt, with over half of all recipients leaving and re-entering benefits at least once over a five-year period. Repeated cycling into and out of benefits by contrast is not the norm, and less than one-quarter of 'churners' have four or more spells. Transfers between different programme types during a single benefit spell do not occur very often.

Relatively little evidence exists to date on benefit spell lengths in Europe. A series of studies look at benefit receipt duration at the city level using monthly data for the German city of Bremen (Buhr & Weber, 1998; Leisering & Leibfried, 1999), Bremen and Gothenburg (Gustafsson & Voges, 1998), and a set of eight different European cities (Gustafsson, Müller, Negri & Voges, 2002). The first three studies conclude that social assistance receipt is mostly a temporary phenomenon, whereas Gustafsson et al. find large differences in benefit spell lengths across cities as discussed further below. With observation periods of five years or less, the authors

are however limited in their ability to account for repeat spells in benefit receipt. In a recent study on benefit receipt in the Dutch city of Rotterdam, Snel, Reelick & Groenenboom (2013) challenge Leisering & Leibfried’s conclusion (drawn for a different city) that episodes of social assistance receipt are typically short. Based on seven years of administrative data starting in 1999, they calculate that nearly two-thirds of benefit spells last longer than a year. One in four recipients has a total (or ‘net’) benefit duration of five years or more over the seven-year period. Repeat spells by contrast are found to be the exception, with four out of five benefit recipients in 1999 having had only one single spell. Dahl & Lorentzen (2003a) look at the duration of benefit receipt in Norway for the 1995 cohort of social assistance recipients over an eight-year period from 1992 to 1999. Using the same source of administrative data for Norway as I do, they illustrate the point raised by Bane & Ellwood (1994) that sample selection (above all the distinction between samples of starting *vs.* on-going spells) and spell censoring have a strong influence on measured spell lengths.

This paper contributes to the summarized literature on social assistance spell lengths by presenting comparable evidence for four European countries. The results for the Netherlands and Sweden complement existing studies at the city level by Snel et al. (2013) for Rotterdam and by Gustafsson & Voges (1998) and Gustafsson et al. (2002) for Gothenberg and Helsingborg. The analysis for Norway updates and extends results presented by Dahl & Lorentzen (2003a) for an earlier time period. The study of benefit dynamics for Luxembourg is the first of its kind.

### 3 Institutional background

All four countries included in this study operate relatively generous minimum-income benefit systems for the working-age population.<sup>7</sup> These are meant to guarantee a basic standard of living to individuals with no or very limited income from other sources. Social assistance benefits may represent a person’s sole source of income or top up limited earnings from work, unemployment benefits, or other government transfers. The exception is Sweden, where social assistance is generally not paid to supplement earnings from work but where a tax credit exists to support low-income earners.

A defining characteristic of these social assistance programmes is that they are means-tested at the level of the ‘core family’: A spouse’s or cohabiting partner’s income and the couple’s assets, typically beyond a certain minimum threshold, are taken into account for determining eligibility; benefits are more generous for recipients with dependent children. Benefit withdrawal with any income from work or other types of government transfers is steep: In the Netherlands, Norway, and Sweden, any income earned in addition to benefit payments is fully deducted from the amount of benefits received. In Luxembourg, total income may reach 130% of the guaranteed minimum income; The implied marginal tax rate on any additional income is 100%.

While social assistance programmes are generally understood as providing temporary relief to individuals during periods of economic hardship, the maximum duration of benefit receipt in all four countries is in principle unlimited. Benefit receipt is however conditional on active job

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<sup>7</sup>More detailed information on the institutional framework in these countries, see Königs (2012) for Luxembourg and Gustafsson (2011) for Sweden.

search or participation in training measures. These requirements extend beyond the claimant to other adult members of the family.<sup>8</sup>

Notable differences exist between the four countries in the degree of centralization of the benefit administration. The Luxembourg Guaranteed Minimum Income (RMG – *revenu minimum garanti*) is administered by the National Solidarity Fund (FNS) at the Ministry of Family Affairs and Integration. Minimum-income thresholds are expressed as a set of fixed base rates, the level of which depend on size and composition of the recipient family. These base rates are then augmented by an index factor that is identical for a range of different social parameters including the national minimum wage and pension, and that is adjusted for inflation at an annual basis. Jobless RMG benefit recipients are required to register with the national public employment service and apply for participation in activation measures.

In the Netherlands, the 2004 Work and Social Assistance Act (WWB) brought about a substantial decentralization of the social assistance (or *bijstand*) benefit administration. Municipalities received large budgetary responsibilities along with incentives to move recipients from social assistance into work quickly. While benefit levels continue to be set by national authorities, the administration of benefit payments and activation programmes takes place entirely at the level of the 415 Dutch municipalities. The central government allocates two separate budgets for reintegration measures and benefit payments to the municipalities. Local authorities are entitled to use any money left in the budget for benefit payments for other purposes, while any excess spending on benefit payments has to be covered out of own funds. The funds in the budget for re-integration measures must be used or paid back. Job-search assistance is provided jointly with the public employment service.

In Norway and Sweden, the administration of social assistance benefits is largely decentralized: The Norwegian Social Services Act of 1991 leaves the generosity of benefit levels of Social Economic Assistance (*Økonomisk sosialhjelp*) and the administration of payments largely to the discretion of the municipalities. Municipal governments determine so-called social assistance benefit norms as guidelines about the level of monthly payments to be made to a ‘standard’ recipient. In practice, actual payments then depend on the caseworker’s assessment of the applicant’s needs. Since 2001, the central government additionally provides national social assistance norms, which are updated annually and aim at equalizing the generosity of social assistance benefit payments across municipalities. These national norms however are not binding.

The Swedish Social Assistance (*Ekonomiskt bistånd*), regulated by the Social Services Act of 1982, is financed and administered by the municipalities. The National Board of Health and Welfare (NBHW) provides national social assistance norms that are meant to harmonise the level of benefits across the country. Unlike for Norway, these national norms have been binding since 1998. As important items like the cost of childcare or electricity are however not covered by these national norms, the level of benefit payouts is in practice determined by municipal social assistance norms and the discretion of the local caseworkers.

To cover the costs of housing, low-income families in all four countries can draw on separate housing allowance programmes. Since 2009, Luxembourg pays its low-income residents a Cost of Living Allowance (*allocation de vie chère*), which replaces the earlier Heating Allowance

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<sup>8</sup>For an overview of eligibility conditions for social assistance in OECD countries, see Immervoll (2010).

(*allocation de chauffage*). In the Netherlands, low-income families who spend a substantial part of their income on the costs of housing are entitled to receipt of Housing Allowance (*huurtoeslag*; until 2006: *huursubsidie*). Means-tested housing allowances for low-income families also exist in Norway (*bostøtte*) and Sweden (*bostadsbidrag*).

Additional income-support programmes for specific client groups exist in two of the four countries. In the Netherlands, there are three smaller programmes targeted at older working-age individuals, referred to as IOAW, IOAZ, and IOW.<sup>9</sup> The main difference between these programmes and the standard *bijstand* is a more generous means-test, especially in terms of the treatment of the applicants' assets. A means-tested Supplementary Benefit (TW, *Toeslagenwet*) is available for recipients of insurance-based benefits who do not reach a certain minimum-income threshold. In Norway, the Transitional Allowance (*Overgangsstønad for enslige forsørgere*) is a separate minimum-income benefit programme targeted at single parents with insufficient means to cover their living expenses.

Due to data limitations and for reasons of comparability, the analysis presented in this paper focuses only on a country's main social assistance programme for able-bodied working-age individuals: the RMG for Luxembourg, *bijstand* for the Netherlands, Social Economic Assistance for Norway and Social Assistance for Sweden. Housing Benefits or any of the smaller minimum-income benefit programmes, for which receipt dynamics are likely to be different, are not considered.<sup>10</sup> The same applies to programmes targeted at those unable to work.

The results presented in this paper should therefore not be interpreted as approximating individuals' receipt patterns of income-support benefits more broadly. Many individuals may receive unemployment benefits before entering social assistance, and many will draw on other types of income-support benefits after leaving. If such moves are frequent, as it is described for Australia by Gregory & Klug (2003) and Tseng et al. (2008), the results presented in this paper will give a lower receipt duration and a higher frequency of repeat spells than would be observed if other income-support benefits were taken into account.

Since benefit receipt in all countries is conditional on the recipient passing a means-test at the 'core family' level, I categorise an individual as a benefit recipient in a given period if a positive amount of benefit payments is registered for any household member in that period. For a discussion of the advantages and limitations of this approach, see Cappellari & Jenkins (2008). I restrict my analysis to individuals of working age, which I define as the range from 25 to 59 years. This corresponds to the usual practice in the existing work on social assistance benefit dynamics and is meant to make sure that the results are not too strongly affected by individuals

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<sup>9</sup>Two of these programmes take the form of unemployment assistance programmes: The Act on Income Provision for Older and Partially-Disabled Unemployed Persons (IOAW, *Wet Inkomensvoorziening Oudere en gedeeltelijk Arbeidsongeschikte Werkloze Werknemers*) provides income support to unemployed individuals who were 50 years or older when losing their job and who have exhausted their unemployment insurance benefit entitlements. Individuals who were 60 years or older when becoming unemployed and who have exhausted their unemployment insurance entitlements are eligible to claim benefit payments in the framework of the Income Provision for Older Unemployed Persons (IOW, *Inkomensvoorziening Oudere Werklozen*).

The Act on Income Provision for Older and Partially-Disabled Formerly Self-Employed Persons (IOAZ, *Wet Inkomensvoorziening Oudere en Gedeeltelijk Arbeidsongeschikte Gewezen Zelfstandigen*) supplements incomes of individuals aged 55 years or more who have been self-employed but were forced to shut down their business.

<sup>10</sup>For instance, earlier calculations showed that spell lengths for the Norwegian Transitional Allowance tend to be very long. This probably reflects less stringent work requirements in particular for single parents with young children. Housing Benefit dynamics may show a similar pattern due to the typically higher income thresholds especially for families with children.



who enter the labour market or retire.

## 4 Data used

The analysis presented in this paper is based on data from four separate national administrative data sets for Luxembourg, the Netherlands, Norway, and Sweden. Each of them provides information on benefit receipt for the entire population of the respective country at monthly intervals. The observation periods vary from 108 months (9 years) for Sweden to 276 months (23 years) for Luxembourg and overlap during a window of 96 months from January 2001 to December 2008.

Results for Luxembourg are based on a data set of social assistance benefit spells collected by the National Solidarity Fund (FNS) that administers the RMG in Luxembourg. Access was granted by the General Inspectorate of Social Security (IGSS). The data come in the form of the starting and end months of all benefit spells between January 1988 and December 2010. They contain records on about 30,400 benefit recipients of working age, which corresponds to about 1.6 million person-month observations.<sup>11</sup>

The data for the Netherlands come from two separate databases administered by Statistics Netherlands (CBS). The Social Statistical Database (SSB, *Sociaal Statistisch Bestand*) provides precise starting and end dates of all benefit spells for the Dutch resident population over the years 1999 to 2010. I match these records into data from the municipal population registers (GBA, *Gemeentelijke Basisadministratie*) that contain information on the personal and household characteristics of the entire Dutch population (recipients and non-recipients). From the resulting population data set, I use a 0.5% random sample of individuals, which consists of about 96,000 persons (11.7 million person-month observations), 12,000 of which are benefit recipients (527,000 recipient-months).<sup>12</sup> All data work was done on-site at CBS in The Hague.

For Norway, I use data from the Social Security Event-History Database (*FD-Trygd*) that is administered by Statistics Norway. This dataset provides information on benefit receipt for the entire Norwegian population for the years 1993 to 2008. I work with a 10% random sample from the population, which translates into 323,000 individuals (41.9 million person-month observations) of whom 46,000 are benefit recipients (883,000 recipient-month observations).<sup>13</sup>

For Sweden, data come from the Social Assistance register maintained and made available by the National Board of Health and Welfare. This data set provides monthly information on

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<sup>11</sup>The full observation period even extends from November 1986 to February 2012. The data appear to be less reliable however at the beginning and towards the end of the observation period such that I do not use them (for additional details, see Königs (2012)). I am not aware of any earlier research papers that use the FNS data. The IGSS however publishes statistics on trends in benefit receipt derived from FNS data in its annual reports (IGSS, 2012).

<sup>12</sup>To my knowledge, the only existing study of social assistance dynamics using SSB data is from Zorlu (2013), who estimates standard probit models to examine the determinants of benefit receipt for a cross-section of first- and second-generation immigrants in 2005.

<sup>13</sup>*FD-Trygd* has been used extensively to study social assistance benefit receipt: Dahl & Lorentzen (2003a) analyse the length of benefit spells in Norway using monthly data over an eight-year period from 1992 to 1999. Hansen (2009) also looks at social assistance spell lengths for the years 1992 to 2002 however annualizes the monthly data on benefit receipt. *FD-Trygd* data have also been used to study exits from benefit receipt (Dahl & Lorentzen, 2003b), state dependence in benefit receipt (Bhuller, Brinch & Königs, 2014), the effects of ALMPs on social assistance dynamics (Dahl & Lorentzen, 2005; Lorentzen & Dahl, 2005), social assistance dependency over the life cycle (Hyggen, 2006; Lorentzen, Dahl & Harsløf, 2011) and across generations (Lorentzen, 2010).

benefit receipt for the years from 2001 to 2009. Over this period, the population of benefit recipients consists of about 530,000 individuals, which translates into about 10.5 million person-month observations.<sup>14</sup>

All four data sets permit linking individuals with other members in the same household based on a household identifier, which allows me to define the benefit receipt variable at the household level. The data also provide limited information on the demographic characteristics of sample members, notably their sex, age, nationality / country of origin, and family status (except for Luxembourg). The Norwegian data can in principle be matched with information on educational attainment, a feature which however I do not make use of since no comparable data are available for the other countries. For a description of all variables used in this paper see Appendix A.2, Table A.1.

Since the data for Luxembourg and Sweden only contain information on individuals for as long as they receive benefits (and no records for non-recipients), I use annual statistics on the size of the working-age population provided by the OECD (2013) for the calculation of receipt rates and entry rates into benefits.<sup>15</sup>

## 5 Trends in aggregate benefit dynamics

Due to the lack of suitable panel data with monthly observations, much of the existing work on social assistance benefit dynamics is based on annual data taken from household surveys (Cappellari & Jenkins (2014), Königs (2014)) or administrative records (Finnie & Irvine (2008); Andrén & Andrén (2013); Hansen, Lofstrom, Liu & Zhang (2014)). While analyses based on annual data can provide important insights about the frequency of benefit receipt, its trends over time, and the most important recipient groups, the minimum period of benefit entitlement is in reality shorter than a year in most countries.<sup>16</sup> Annual data on benefit receipt can therefore only give an approximate representation of the underlying dynamic processes, and trends in benefit receipt observed in annual data may not always adequately reflect the benefit dynamics at the monthly level.

This section provides a short overview of the aggregate benefit receipt dynamics in Luxembourg, the Netherlands, Norway and Sweden. Its main purpose is to provide some background to the analysis of individual-level receipt dynamics presented in the following section. By presenting comparable results for both monthly and annualized data, it also permits determining to what

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<sup>14</sup>Two earlier studies use the Swedish NBHW database to analyze social assistance benefit receipt: Bergmark & Bäckman (2004) study re-entries into benefit receipt of social assistance leavers, however restrict their analysis to annual data for the years 1990 to 1999. Bäckman & Bergmark (2011) use the monthly data to study duration dependence in social assistance receipt over the period from 2002 to 2004.

<sup>15</sup>To assess the robustness of the results, I have replicated the analysis for Norway using the same annual OECD population statistics (rather than the monthly population numbers constructed from the *FD-Trygd* sample), and I find that this leaves the results virtually unaffected. Over the period from January 2001 to December 2008, the largest difference found in any given month between the benefit receipt rates calculated using those two sources of population numbers is 0.03 percentage points; entry rates derived using the two sources of population numbers differ by less than 0.01 percentage points in each month. It thus seems reasonable to use aggregate population statistics to calculate benefit receipt rates and entry rates for Luxembourg and Sweden where no micro-based population numbers are available.

<sup>16</sup>In Norway and Sweden for instance, individuals are usually required to re-confirm the circumstances that justify benefit receipt every month. Ayala & Rodriguez (2007a,b) by contrast report that the benefits of Madrid's Minimum Income programme (IMI) are granted for one year, renewable automatically.

extent the conclusions drawn from data at different levels of time aggregation are consistent.

## 5.1 Rates of benefit receipt

Rates of social assistance benefit receipt differ across countries in both levels and trends over the observation period (Figure 1). The share of working-age individuals receiving benefits declines in two of the four countries: In the Netherlands, the receipt rate falls from over 5% in the late 1990s to around 4% in the late 2000s, in Norway it decreases from around 2.5% in the early 1990s to below 2% in the late 2000s.<sup>17</sup> Benefit receipt rates are relatively stable for Sweden, where they fluctuate around 2% to 2.5%. In Luxembourg, receipt rates increase from around 1% in the late 1980s to over 4% in 2011.

The declining benefit receipt rates for the Netherlands and Norway match similar downward trends for other countries. Cappellari & Jenkins (2014) and Hansen et al. (2014) report a decline in benefit receipt rates in Britain and Canada, respectively. In both cases, receipt rates peaked at around 12% in the mid-1990s to fall to about 6% in Britain and 8% in Canada in the mid-2000s.<sup>18</sup> For the United States, Scholz, Moffitt & Cowan (2009) find a 50% drop in caseload numbers of Temporary Assistance for Needy Families (TANF) from its introduction in 1996 to 2007.<sup>19</sup>

These downward trends likely reflect a combination of different factors. One possible driver are policy reforms, notably stricter eligibility requirements and a greater focus on the activation of employable benefit recipients. At least in part, the fall in receipt rates however certainly also reflects an improvement in the general economic environment after the economic downturn of the early 1990s with negative GDP growth rates in Canada, Norway, Sweden, and the United Kingdom. The rising rates of benefit receipt in Luxembourg can be understood in the context of the gradual expansion of the RMG after its introduction in 1986, with increasing take-up rates, looser eligibility conditions, and greater benefit generosity (Königs, 2012). A discussion of corresponding changes in the composition of the recipient population is provided in Appendix A.1.

There is no evidence of seasonality in benefit receipt for working-age individuals in any of the four countries despite relatively strong month-to-month fluctuations in receipt rates especially in Norway and Sweden.<sup>20</sup> Figure 2 plots the average rate of benefit receipt in each calendar month over all years of the observation period. The lines for all four countries are essentially flat, which implies that there is very little systematic variation in rates of benefit receipt between calendar months. Any month-to-month fluctuations in benefit receipt observed in monthly receipt rates for Sweden and Norway thus represent ‘noise’ rather than seasonal effects.

Figure 3 presents annualized benefit receipt rates. To construct these rates from the monthly data, I have employed the ‘benefit year’ approach used in much of the existing literature classifying an individual as a recipient in a given calendar year if any benefit payments are recorded

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<sup>17</sup>In the Netherlands, the decline in receipt rates was much stronger in the late 1990s, for which however no monthly data are available (see Immervoll et al. (2014)).

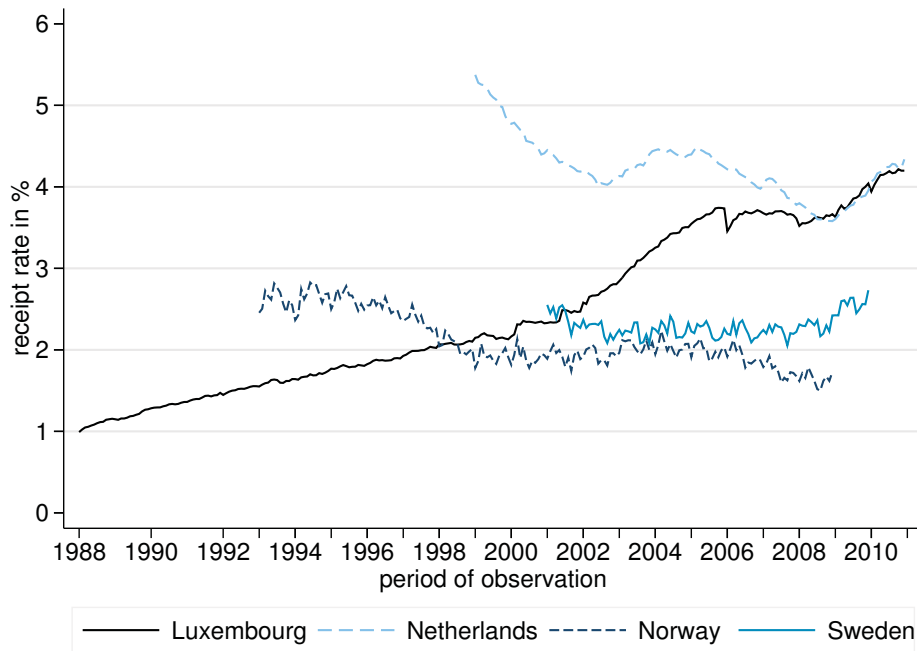
<sup>18</sup>The benefit programmes taken into account are Social Assistance in Canada and Income Support or Unemployment Benefits / Jobseeker’s Allowance in Britain.

<sup>19</sup>TANF is the successor of the AFDC programme mentioned in Section 2 and was introduced in 1996 by the Clinton administration through the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA).

<sup>20</sup>For Norway and Sweden, this result changes if the bottom age threshold is lowered from 25 years to also include individuals in their early 20s. In this case, rates of benefit receipt rise considerably over the summer months as young adults flow into social assistance to bridge gaps in their educational schedules.

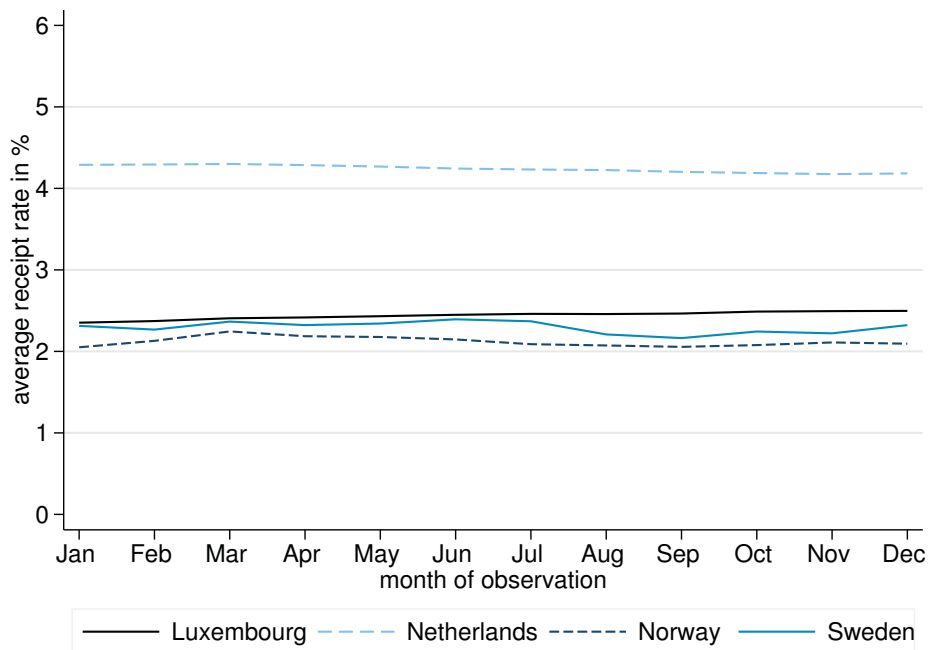


Figure 1: Rates of benefit receipt – monthly data



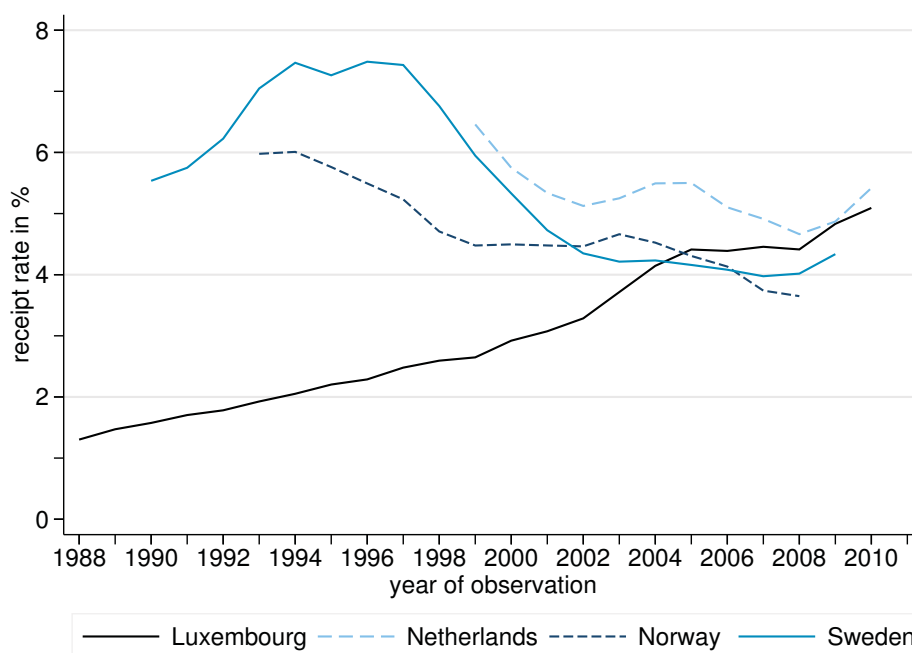
*Note:* Receipt rates measure the share of working-age individuals (25-59 years) who receive benefits in a given period. Calculations are based on administrative data from Luxembourg (FNS database, 1988-2010), the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). For Luxembourg and Sweden, I calculate receipt rates by combining micro data on recipient numbers with annual aggregate statistics on the size of the working-age population in these countries (OECD, 2013).

Figure 2: Rates of benefit receipt – seasonality



*Note:* See note to Figure 1. Seasonality is measured as the receipt rate for a given calendar month averaged over all years of the respective observation period.

Figure 3: Rates of benefit receipt – annual(ized) data



*Note:* Annual receipt rates measure the share of working-age individuals (25-59 years) who receive benefits at any time in a given year. Calculations are based on administrative data from Luxembourg (FNS database, 1988-2010), the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 1990-2009). To calculate receipt rates for Luxembourg and Sweden, I combine micro data on recipient numbers with annual aggregate statistics on the size of the working-age population in these countries (OECD, 2013).

during that year. For Sweden, I moreover present results for the years 1990 to 2000 for which only annual data are available. The numbers can be compared directly for instance to those presented by Finnie & Irvine (2008) or Hansen et al. (2014) for Canada or by Andrén & Andrén (2013) for Sweden.<sup>21</sup>

Unsurprisingly, annualized receipt rates are much higher than their corresponding monthly counterparts. This reflects the fact that the share of individuals who receive benefit payments at any time during the year must be greater than the ‘instantaneous’ receipt rate in any month of that year. The ratio between the annualized and monthly receipt rates provides a measure of the ‘turnover’ in benefit receipt during the calendar year. This result is summarized in Table 1.

Turnover in benefit receipt is much lower in Luxembourg and the Netherlands than in Norway or Sweden. In the former two countries, the annual rate of benefit receipt is about 25% higher than the average monthly rate of benefit receipt (column IV of Table 1). Over the course of a year, and for a stable annual rate of benefit receipt, about 25% of all Luxembourg and Dutch recipients at the beginning of a year thus leave benefits and are ‘replaced’ by new benefit entrants. The corresponding figures are substantially higher for the two Nordic countries: In Sweden, the share of individuals who receive benefits at any time during the year is 73% higher than the average monthly rate of benefit receipt. In Norway, the recipient population on average completely changes more than once during a calendar year.

<sup>21</sup>Meanwhile, the numbers are not directly comparable to those reported by Cappellari & Jenkins (2014) for the United Kingdom or Königs (2014) for Germany, who use survey data and measure benefit receipt rates at the interview date only.

Table 1: Monthly and annualized rates of social assistance benefit receipt

country	average monthly rate of benefit receipt in %	average annual rate of benefit receipt in %	ratio of columns III and II
Luxembourg	2.4	3.0	1.22
Netherlands	4.2	5.3	1.26
Norway	2.1	4.7	2.23
Sweden	3.2	5.5	1.73

*Note:* Calculations are based on administrative data from Luxembourg (FNS database, 1988-2010), the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). For Luxembourg and Sweden, I calculate receipt rates by combining micro data on recipient numbers with annual aggregate statistics on the size of the working-age population in these countries (OECD, 2013).

The results demonstrate that relatively similar average monthly rates of benefit receipt in Luxembourg and Norway can go hand in hand with very different degrees of turnover and, hence, benefit durations (an aspect studied in more detail in Section 6). Annual rates of benefit receipt calculated using the ‘benefit year’ approach (as presented in Figure 3) tend to give a much better measure of the frequency of benefit receipt at any point in time if the month-to-month turnover in benefit receipt is low.

The numbers can also be used to illustrate that especially where turnover is high, a greater share of the population may be in social assistance for at least a short period at some point during their lives. For instance, 10.2% of working-age individuals in Norway who were in the sample for the eight-year period from 2001 to 2008 received benefits at least once during that time (*not shown*). This share is more than five times the average monthly rate of benefit receipt of 1.9% among the same individuals. In the Netherlands, the average monthly receipt rate among individuals observed for the same eight years is 3.9%, but 9.8% of individuals receive benefits at some point during this period. In both countries, the number of individuals who draw on social assistance at some point is thus much higher than the low monthly receipt rate may suggest. At least for some individuals, benefit receipt thus tends to be a transitory phenomenon. ‘Recipients’ and ‘non-recipients’ should thus not necessarily be considered as two very distinct groups.

## 5.2 Benefit transition rates

The trends in benefit receipt rates can be linked to transition rates into and out of benefits. For this purpose, I define an entry rate as the number of individuals who receive benefits at time  $t$  and who did not receive benefits in  $t-1$  as a percentage of the non-recipient population in period  $t-1$ . Analogously, I define an exit rate as the number of individuals who do not receive benefits in period  $t$  but who received benefits in  $t-1$ , as a share of all benefit recipients in  $t-1$ . As the data for Sweden and Luxembourg do not include non-recipients, I use again OECD statistics on the size of the working-age population in these countries for the calculation of entry rates (OECD, 2013). Figures 4-6 plot month-to-month benefit transition rates, seasonal variations in transition rates, and annualized transition rates calculated from the monthly data, respectively.

The larger turnover in benefit receipt in the Nordic countries observed in Table 1 is reflected in much higher benefit transition rates. In Norway and Sweden, around 0.5% and 0.4% of non-

recipients, respectively, enter benefits from one month to the next (upper panel of Figure 4). In Luxembourg and the Netherlands, the corresponding average monthly entry rates are much lower at around 0.1%. Similar disparities are observed for exit rates: In Norway and Sweden, around 25% and 15% of recipients in a given month leave benefits in the next month, compared to below 3% of Dutch recipients and not even 1.5% of recipients in Luxembourg (bottom panel).

Trends in benefit receipt rates observed in Figure 1 appear to be driven primarily by changes in entry rates. In Norway, the decline in the receipt rate coincides with a fall in the entry rate while the exit rate remains relatively stable. In Luxembourg, where the receipt rate increased, a similar rise can be observed in the entry rate again at stable exit rates. These results again confirm earlier findings for Canada (Finnie & Irvine, 2008) and Britain (Cappellari & Jenkins, 2014), who report that declining benefit receipt rates coincide with falling entry rates into benefit receipt while exit rates remain stable or even drop. The pattern differs however in the two other countries: Figure 1 shows a decline in the receipt rate for the Netherlands, yet both entry and exit rates remained relatively stable over the observation period. The decline in benefit receipt thus represents a move towards a new ‘equilibrium receipt rate’.<sup>22</sup> For Sweden, a stable receipt rate is associated with declines in both entry and receipt rates.

Like the benefit receipt rates, also benefit transition rates display a perhaps unexpected lack of seasonality (Figure 5). While there are some fluctuations across calendar months, the only systematic patterns appear to be the somewhat higher exit rates from benefits in January and in the summer months for the two Nordic countries. For Luxembourg and the Netherlands, the low observed exit rates and the lack of seasonality in entries and exits hint at long benefit spell lengths. Overall, the large fluctuations in month-to-month benefit transition rates observed for all four countries in Figure 4 thus do not reflect seasonality in benefit receipt.

The patterns in benefit transition rates are remarkably well preserved when the data are aggregated to the annual level (Figure 6). Annual entry rates show similar trends as their monthly counterparts, declining for Norway and Sweden, remaining stable for the Netherlands, and rising for Luxembourg. Similarly, exit rates calculated from the annualized data display the same lack of trend observed for monthly exit rates.

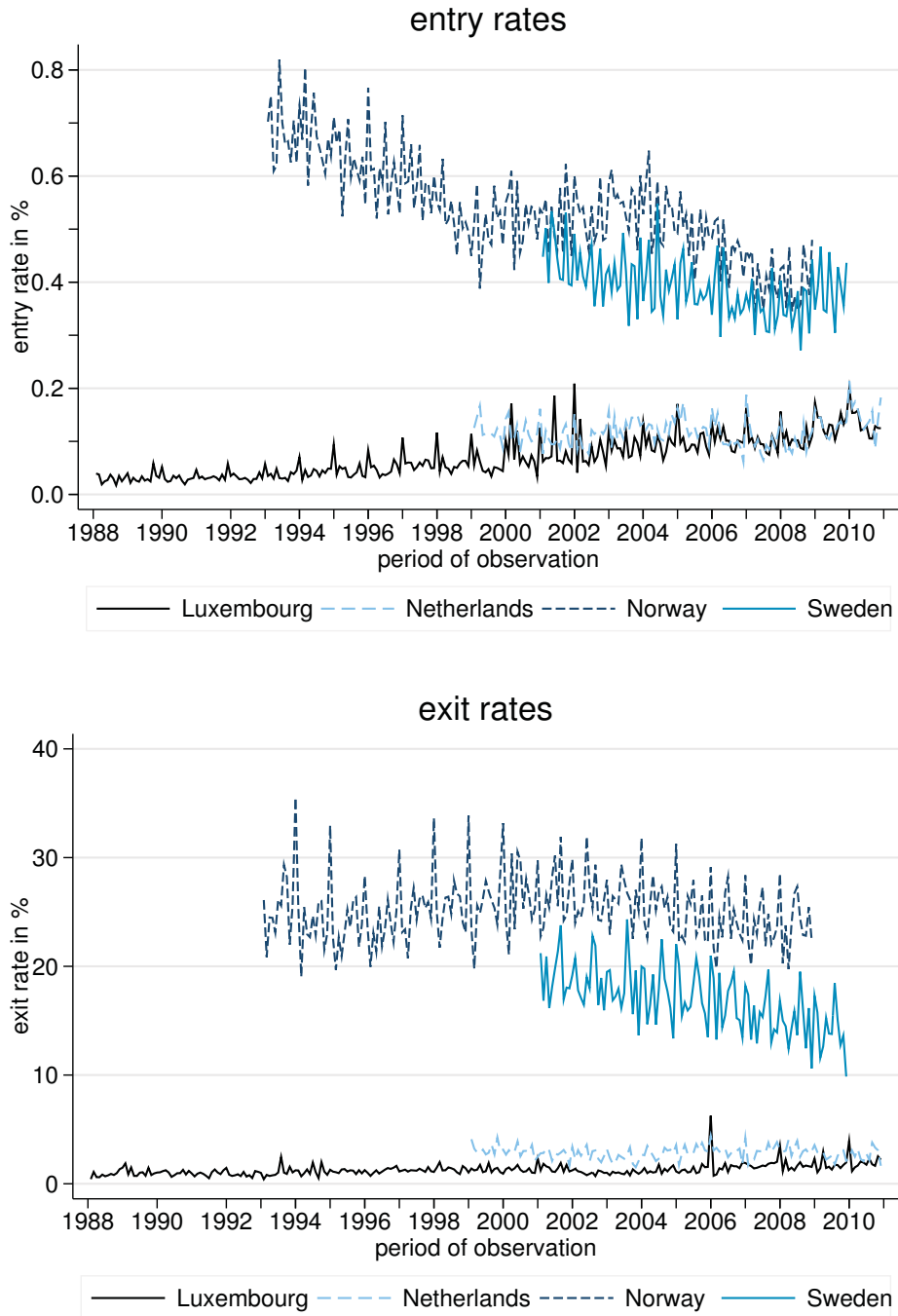
Annual transition rates can be thought of describing the benefit dynamics purged of any short-term turnover: Annual entry rates consider benefit receipt of those individuals who did not receive any payments last year, which means that they do take into account direct re-entries of benefit leavers. Similarly, annual exit rates do not reflect short-term departures from benefits but only consider exits that last for one year at least. The much lower cross-country disparities in the level of annual transition rates compared to the monthly rates thus imply that a substantial share of the month-to-month transitions observed for the two Nordics are only temporary.

An implication of these benefit transition rates is that observed state dependence in benefit receipt is strong: Even for Norway, where benefit transition rates are highest, monthly-to-month persistence rates of around 75% are considerably higher than the corresponding entry rates of about 0.5%. While most of this gap between benefit persistence and entry rates likely reflects differences in characteristics between recipients and non-recipients, it raises concerns about

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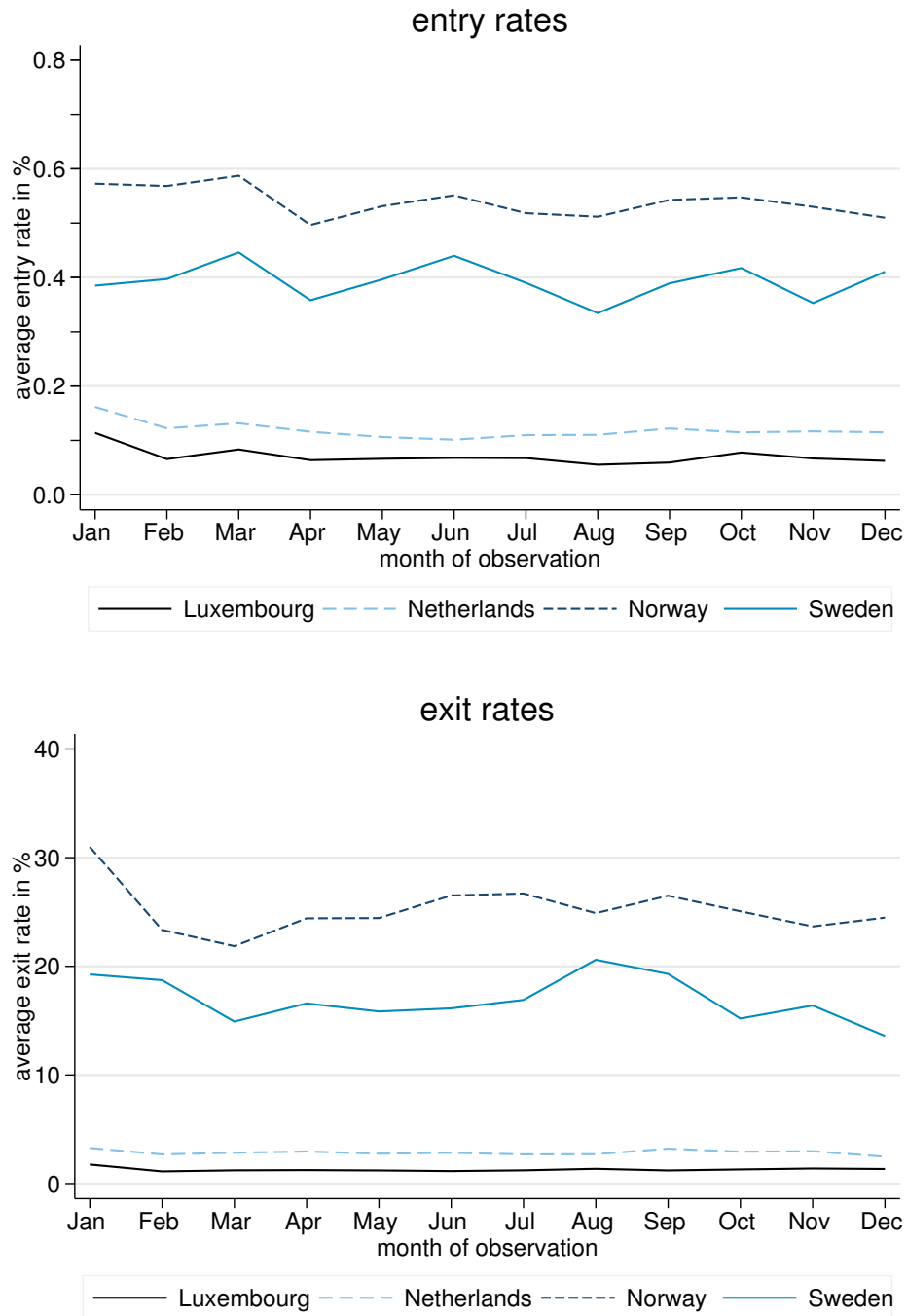
<sup>22</sup>At an average monthly entry rate of 0.12% and an average exit rate of 2.86%, the receipt rate at which entries equal exits is at 4%. This roughly corresponds to the receipt rate attained towards the end of the observation period.

Figure 4: Benefit transition rates – monthly data



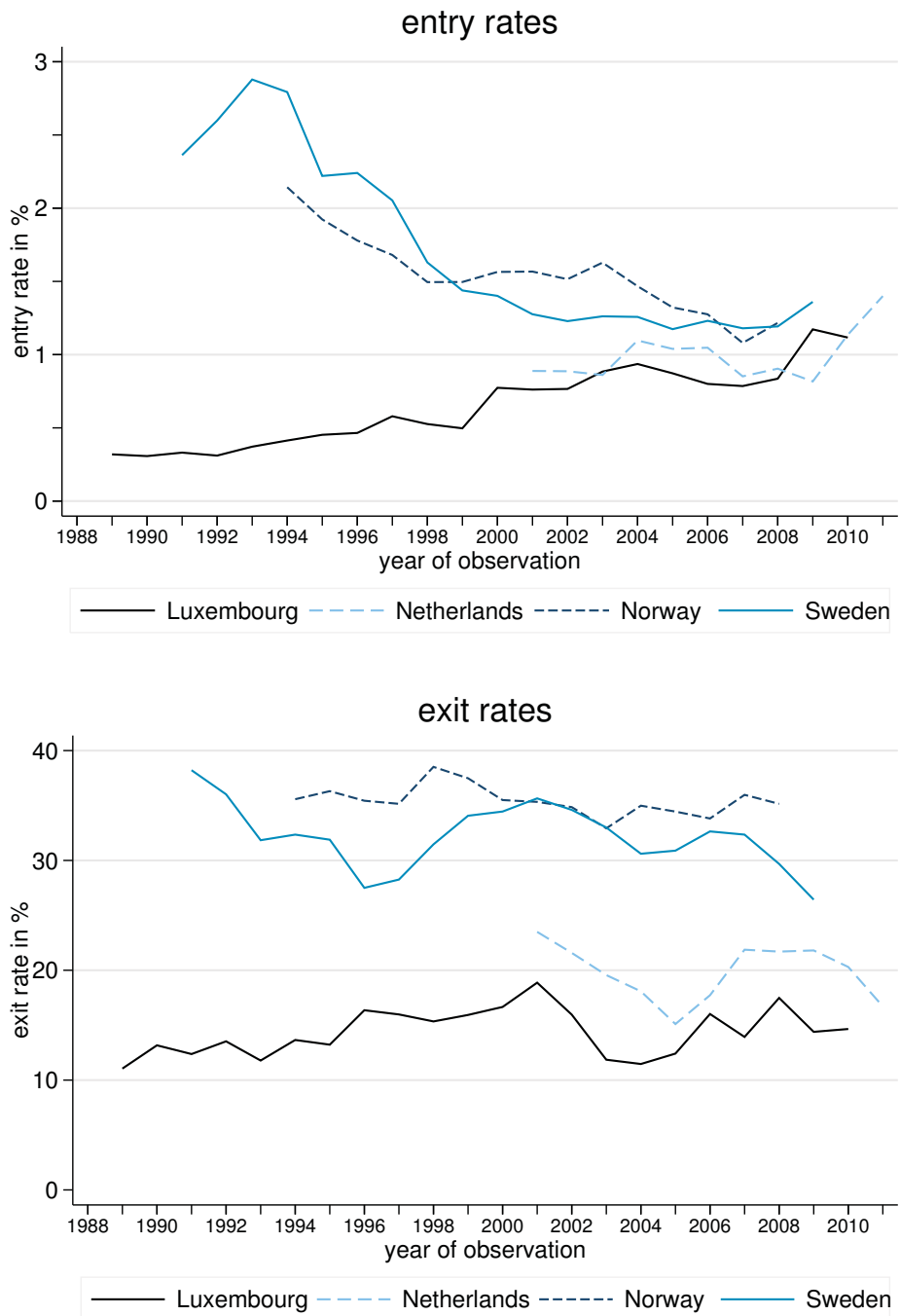
*Note:* Entry rates are defined as the number of individuals who receive benefits in period  $t$  and who did not receive benefits in  $t-1$  divided by the total number of non-recipients in  $t-1$ . Exit rates are defined accordingly as the number of individuals who do not receive benefits in period  $t$  but who received benefits in  $t-1$  as a fraction of all benefit recipients in  $t-1$ . Calculations are based on administrative data from Luxembourg (FNS database, 1988-2010), the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). For Luxembourg and Sweden, I calculate receipt rates by combining micro data on recipient numbers with annual aggregate statistics on the size of the working-age population in these countries (OECD, 2013).

Figure 5: Benefit transition rates – seasonality



*Note:* See note to Figure 4. Seasonality is measured as the transition rate for a given calendar month averaged over all years of the respective observation period.

Figure 6: Benefit transition rates – annual(ized) data



Note: See note to Figure 4.

possible ‘scarring’ effects and motivates research on the drivers of state dependence in benefit receipt (see for instance Bhuller et al. (2014)).

## 6 The micro-dynamics of benefit receipt

The aggregate benefit receipt rates and transition rates presented in the previous section suggest that the degree of ‘turnover’ in benefits – and thus the length of benefit spells – differs across the four countries studied. In this section, I take a spell-based perspective to show how these aggregate-level differences are reflected in individual-level benefit receipt dynamics. To ensure that the results are comparable across countries, I limit my analysis to the eight years from January 2001 to December 2008 during which the observation periods of all four data sets overlap.<sup>23</sup> The samples are restricted to benefit spells of individuals who are of working age (25-59 years) at the beginning of their spell.

### 6.1 The definition of a benefit spell

The advantage of using monthly data for an analysis of benefit dynamics is that spell lengths can be measured with precision, and that even very short spells can be easily identified in the data. A contentious issue in the existing literature on the duration of benefit receipt has been, however, how short interruptions in receipt should be dealt with when spells are defined. Short periods without benefit receipt may not represent actual exits from benefits but may result from ‘administrative churning’, for instance caused by delays in benefit pay-outs or errors in data entry. In this case, they should arguably be corrected for.

Even if data have been recorded correctly, a case can be made for ignoring short exits from benefit receipt because they may not represent genuine departures from a situation of dependency. Kazepov (1999) suggests that one should really be concerned with *dependence episodes*, which he defines as periods of benefit receipt that might span multiple *cash episodes* (*i.e.* benefit spells) interrupted by short times without benefit receipt. Blank (1989) ignores interruptions in benefit receipt of up to three months unless she can link them to changes in employment status or income, and a similar approach is taken in most of the later work on the topic.

I choose to employ a different approach by defining a benefit spell as a period during which a positive amount of benefit payments is observed for every single month. The spell is thus coded as having ended as soon as no benefit payment is recorded. The justification for this approach is that – as we will see – a large share of the observed benefit spells in the two Nordic countries are of very short duration, and that it is not obvious why short spells on and off benefits should be treated asymmetrically. To illustrate the robustness of my findings, I also report results obtained when ignoring interruptions in benefit receipt of two months or less. Unlike it is done by previous authors, I however do not count these interruptions as contributing towards the length of the benefit spell.<sup>24</sup>

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<sup>23</sup>Results for the entire observation periods are provided by Immervoll et al. (2014).

<sup>24</sup>For instance, an individual might be observed as receiving benefits for two times four months interrupted by a period without payments of two months. In my analysis, such an episode would be classified as either two separate spells of four months or as a single spell of eight months. Gustafsson et al. (2002) for instance would



## 6.2 Hazard rates

A plot of the hazard rates of exits from and re-entries into benefit receipt can provide a first overview of the benefit transition dynamics at the individual level. The upper panel of Figure 7 presents the hazard rate out of benefits among recipients who started their spell during the observation period. The lower panel shows the corresponding hazard rate from non-receipt into benefits for those who have ended a spell of benefit receipt.<sup>25</sup>

In all four countries, hazard rates from benefit receipt show the typical declining pattern indicating that the probability of leaving benefits in a given period (conditional on not yet having left in any of the previous periods) falls with increased duration of benefit receipt. Exit probabilities however differ substantially across the four countries: In Norway and Sweden, the period-specific exit rate from benefits is above 30% per month in the beginning of a benefit spell but strongly declines to around 10% after 12 months and further to around 5% after 36 months. In Luxembourg and the Netherlands, exit probabilities are much lower to start with and consequently decline less strongly.

Re-entry hazards, *i.e.* the exit rates from self-sufficiency among those with a previous benefit spell, tend to be lower but show a very similar pattern. In the two Nordic countries, re-entry rates are much higher in the early periods of a spell off benefits declining from around 25% in the initial months to 2-3% at 12 months and 1% at 24 months and thereafter. In Luxembourg and the Netherlands, re-entry rates of benefit leavers are only around 6% per month already at the beginning of a spell off benefits and decline less strongly. 18 months after the end of a benefit spell, the re-entry hazard rates in all four countries have practically converged.

The hazard rates' declining patterns of course cannot be interpreted as evidence for duration dependence. The fall in exit rates with increased spell length likely reflects primarily compositional effects as individuals with favourable characteristics leave social assistance more quickly. Rapidly falling hazard rates from self-sufficiency back into benefits indicate that a large share of departures from social assistance only represent short interruptions in benefit receipt, potentially as individuals seize short-term employment opportunities, or indeed as a result of administrative churning.

The larger exit and re-entry probabilities in the two Nordic countries, especially at the beginning of a spell, reflect the higher aggregate month-to-month benefit transition rates observed in Figure 4. As shown below, they also imply much shorter spell lengths and a higher share of individuals with multiple benefit spells.

## 6.3 The length of benefit spells – evidence from long panels

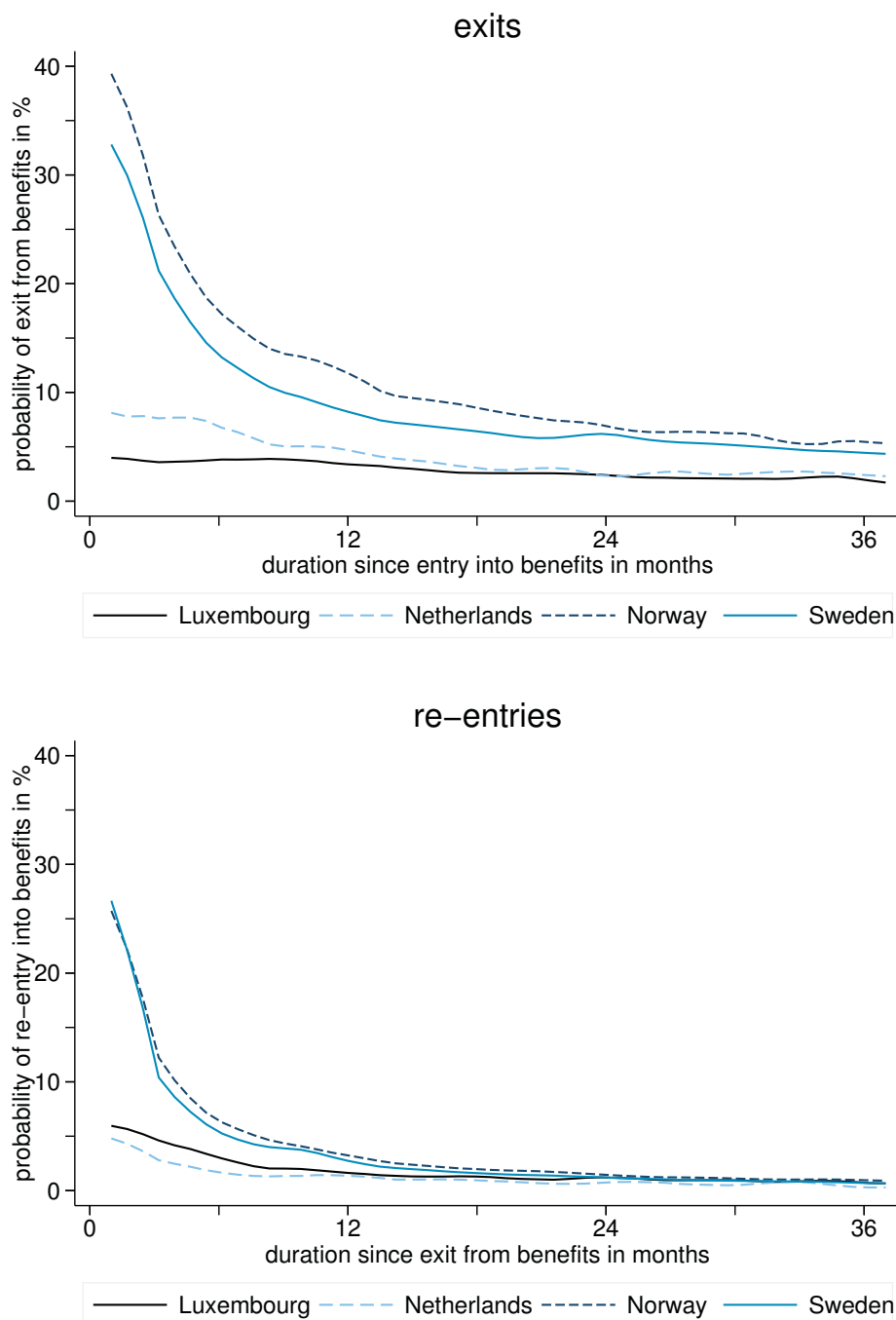
To assess the incidence of long-term benefit dependence, I study the distribution of spell lengths over the time from January 2001 to December 2008. Table 2 presents an overview of the lengths of all benefit spells that start during the eight-year observation period. Spells that are ongoing in December 2008 are counted as right-censored but included in the calculations. Left-censoring is not an issue for inflow samples.

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record a single spell of ten months.

<sup>25</sup>For consistency, I restrict the sample to spells of non-receipt that follow a benefit spell which started during the observation period.

Figure 7: Hazard rates



*Note:* Calculations are based on monthly administrative data for the period January 2001 to December 2008 from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd), and Sweden (NBHW database). The exit hazard rate gives the probability of leaving benefits at a given spell length conditional on not having left in any of the earlier periods. Analogously, the re-entry hazard rate gives the probability of re-entering among welfare leavers after a given duration off benefits conditional on not having re-entered in an earlier period.

Observed spell lengths differ substantially across countries. Benefit spells are generally relatively short in Norway and Sweden but much longer in the Netherlands and Luxembourg (Table 2, panel A). The average length of a benefit spell in the sample varies from below 4 months in Norway to 23 months, *i.e.* nearly 2 years, in Luxembourg. Median lengths indicate that short-term benefit receipt is the norm in Norway and Sweden, where 50% of all spells are of length 2 months or shorter. By contrast, for the Netherlands and Luxembourg, half of all benefit spells last at least 9 and 14 months, respectively.

The duration of benefit receipt is also heterogeneous across spells within countries. In all four countries, at least a small proportion of recorded spells last very long. In Luxembourg, 57% of all spells are longer than 12 months and 35% last two years or longer. In the Netherlands, close to one out of four spells lasts longer than 24 months. In Norway and Sweden, where mean and median spell lengths are short, only about 2% and 4% of all spells, respectively, last for 24 months or longer.

Despite the long observation period, a substantial fraction of spells in Luxembourg and the Netherlands are right-censored. The observed spell length until the end of the observation period will therefore generally be shorter than the true spell length. Since I include right-censored spells in my calculations, the already long average spell lengths calculated for these countries still underestimate true spell lengths. Similarly, the differences in spell lengths between the Nordics and the Netherlands and Luxembourg is likely to be greater still than the numbers in Table 2 suggest.

Ignoring short exits from benefits in the calculation of spell lengths does not strongly affect results. Median spell lengths change little, remaining stable for the Netherlands and Norway, increasing by 1 month for Sweden and by 2 months for Luxembourg (Table 2, panel B). By contrast, measured average spell lengths rise by about 75% for the two Nordic countries from 3.8 to 6.7 months in Norway and from 5.0 to 8.8 months in Sweden. This increase is reflected in the measured durations of long benefit spells. The proportion of spells that last 24 months or longer rises from 3.8% to 10.8% in Sweden and more than triples from 2.0% to 6.4% in Norway. For the Netherlands and Luxembourg, ignoring short exits from benefit receipt does not have a major effect on average spell lengths. This reflects the finding from Figure 7 that benefit leavers in these countries are much less likely to return to benefits quickly.

It is interesting to compare the presented spell lengths with those found in earlier studies. Blank (1989) reports in her analysis of AFDC-receipt in Denver and Seattle that 62% of the completed spells for a household ended within a year, with an average duration of benefit payments of 13 months. She however does not include the 36% of right-censored spells in these calculations, which generally have a longer duration until censoring. Fitzgerald (1991) calculates a much longer median AFDC benefit spell length of 20 months over a shorter observation period (32 months), but calculates a median spell length of 11-12 months for receipt of AFDC and Food Stamps in a follow-up study (Fitzgerald, 1995). Also Hoynes (2000) reports higher AFDC spell lengths for California, where 46% of spells end within 12 months and 62% end within 24 months. The finding of relatively high AFDC spell lengths, at least compared to spell lengths in Norway and Sweden, is maybe not so surprising since the U.S. AFDC primarily targeted highly disadvantaged single mothers, whom we would generally expect to remain on welfare for longer.

Table 2: The length of benefit spells – inflow sample for 2001-2008

Panel A – standard sample									
country	# of spells	duration in months		share of spells in % with a duration of at least				share of censored spells in %	
		median	mean	3 months	6 months	12 months	24 months		
Luxembourg	20,987	14	22.6	90.0	77.5	57.0	34.8	36.7	
Netherlands	4,408	9	17.0	82.7	63.2	42.3	24.1	22.6	
Norway	164,486	2	3.5	34.4	15.2	5.6	1.6	3.6	
Sweden	1,551,454	2	5.0	42.5	22.3	10.5	3.8	6.5	

Panel B – ignoring short-term exits									
country	# of spells	duration in months		share of spells in % with a duration of at least				share of censored spells in %	
		median	mean	3 months	6 months	12 months	24 months		
Luxembourg	19,335	16	24.6	91.6	80.2	60.8	38.4	39.8	
Netherlands	4,112	9	18.2	83.5	64.9	44.4	26.4	24.2	
Norway	94,436	2	6.1	46.6	26.4	13.3	5.8	6.3	
Sweden	873,441	3	8.8	52.3	34.4	21.4	10.8	11.5	

*Note:* Calculations are based on monthly administrative data for the period January 2001 to December 2008 from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd), and Sweden (NBHW database). Panel A uses the standard sample while Panel B ignores exits from social assistance benefit receipt of up to two months. More specifically, spells that are interrupted by a period of non-receipt of 1-2 months are counted as continuous, but the interjacent period of 1-2 months off benefits is not counted towards the length of the benefit spell. Spells are counted as censored if they are ongoing in December 2008. The sample consists of all spells that start during the observation period. It is restricted to individuals of working age (25-59 years) at the beginning of their benefit spell.

More recent and comparable results are presented by Gustafsson et al. (2002) in their study of social assistance dynamics in eight European cities. For a 42-month period starting in the late 1980s or early 1990s, they report median spell lengths of around 4 months for an individual's first observed spell in Gothenburg and Helsingborg and of 5-6 months for Bremen, Milan and Turin. By contrast, median spell lengths are 1 year for Vitoria, over 2 years for Barcelona and nearly 3 years for Lisbon. The results for Helsingborg and Gothenburg are relatively close to the ones reported in Table 2 for Sweden. The median durations for Barcelona and Lisbon are much longer, which, as Gustafsson et al. (2002) suggest, may reflect stricter means-tests and thus more disadvantaged recipient populations in these cities.

My results are remarkably similar to those reported by Dahl & Lorentzen (2003a) who study benefit spell lengths in Norway using the same data set for an earlier period. For their sample of spells that start in 1995, they calculate median and mean spell lengths of 2 and 4 months, respectively, and a 94%-share of spells that last 12 months or shorter (p. 295, Table 6). These numbers are nearly identical to those that I present in Table 2 for a later and longer time period.

My findings for the Netherlands by contrast differ from those reported by Snel et al. (2013) for *bijstand* receivers in the Dutch city of Rotterdam. For the 1999 inflow cohort, they calculate a median spell length of 23 months (p.184, Table 5), which is more than double the 9 months that I report in Table 2 for the country as a whole. Similarly, they calculate that only 35% of benefits spells last one year or less, compared to around 58% of spells with a duration below 12 months in my analysis.

Even though the benefit receipt rate in urban Rotterdam is two to three times as high as the one for the country as a whole, heterogeneity in spell lengths within the country does not appear to be responsible for the differences in findings. I use the postcode information in the SSB data to restrict my sample to recipients who live in city of Rotterdam at the beginning of their spell. Over the eight-year period, I calculate median and mean spell lengths of 10 months and 21 months, respectively. 53% of all spells last longer than 12 months. These numbers are only a little higher than those reported in Table 2 for the entire country and thus still much lower than those reported by Snel et al.. Since there are no apparent differences in methodology or sample selection between the two studies, the much higher spell lengths calculated by Snel et al. might simply be due to different observation periods. More specifically, the 1999 inflows sample used by Snel et al. was drawn before the start of my observation period and at a time when benefit receipt rates were still much higher.<sup>26</sup> The differences in spell lengths in the two studies might thus hint at a positive relation between spell lengths and the receipt rate at the start of a spell. Unfortunately, it was until now beyond the scope of this project to study this aspect in more detail.

## 6.4 The length of benefit spells – a cross-sectional perspective

The analysis of benefit spell lengths just presented is based on a sample of all inflows over an eight-year observation period. Data required for such an analysis are however rarely available. Policy debates about benefit dependence therefore commonly refer to the duration of *on-going*

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<sup>26</sup>Based on the SSB data, I calculate a benefit receipt rate for the city of Rotterdam of 15.5% in 1999, compared to 11.9% over the years 2001 to 2008 which I look at.

Table 3: The length of benefit spells – stock vs. flow samples

country	sample	# of spells	duration in months		share of censored spells in %
			median	mean	
Luxembourg	stock	8,516	60	60.4	59.1
	inflows	288	13	21.8	21.6
	outflows	138	13	18.6	9.4
Netherlands	stock	1,869	67	63.2	64.1
	inflows	67	12	20.5	23.9
	outflows	39	9	18.8	23.1
Norway	stock	6,739	9	16.7	6.4
	inflows	1,747	2	4.3	0.6
	outflows	1,541	2	3.7	0.3
Sweden	stock	92,607	17	26.2	15.1
	inflows	13,681	2	5.5	1.6
	outflows	18,289	3	6.2	1.6

*Note:* Calculations are based on monthly administrative data from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd), and Sweden (NBHW database) over the period from January 2001 to December 2008. I use the term stock sample to refer to a sample of spells that are ongoing in January 2005. Inflow and outflow samples are the samples of spells starting and ending in January 2005, respectively.

spells measured at a single point in time. In particular, discussions are often concerned with the proportion of long-term recipients among those *currently* in receipt of benefits. Conclusions based on such cross-sectional samples can be highly misleading.

In their seminal study on the length of welfare benefit spells in the U.S., Bane & Ellwood (1994) emphasise that in a cross-sectional sample, a snapshot of all on-going spells (a sample of ‘stocks’) will yield very different spell lengths than a sample of all spells that start or end in that period (samples of ‘flows’). To illustrate the importance of this point, I re-produce part of the analysis done by Bane & Ellwood to provide evidence on the gap in measured spell lengths when comparing stock and flow samples for the four countries studied in this paper.<sup>27</sup>

Table 3 shows the length of benefit spells for each country measured at a single point in time calculated for (i) a sample of on-going spells, (ii) a sample of starting spells, and (iii) a sample of ending spells. To minimise the impact of censoring, I use for my calculations the wave in the middle of the observation period, *i.e.* January 2005. In all three samples, I account for short exits from benefits (as in the ‘standard sample’ used for panel A of Table 2). The results are however robust to choosing different sampling waves and to ignoring short interruptions in benefit receipt.

Both median and mean spell lengths in the stock samples of on-going spells are much higher than for samples of either inflows or outflows.<sup>28</sup> The magnitude of this effect varies, but is considerable for each of the four countries. The gap between mean durations is largest in

<sup>27</sup>Bane & Ellwood use annual data from the PSID to calculate the benefit spell length in years for an inflow sample, and compare these numbers to *estimated* spell lengths for a ‘point-in-time’ sample under the assumption that benefit dynamics are in steady state. For an earlier empirical illustration of this point, see Dahl & Lorentzen (2003a)

<sup>28</sup>Table 3 shows that in Luxembourg, the Netherlands and Norway, where the number of recipients has risen in January 2005, spell lengths are higher in the inflow than in the outflow sample. The opposite is true for Sweden, where the number of outflows surpasses the number of inflows, and where spell lengths are shorter in the inflow sample. In equilibrium, the measured spell lengths in inflow and outflow samples are equal on expectation.

Sweden, where the spells that are on-going in January 2005 last 26 months on average, while the average length of spells starting in that same month is nearly one fifth of this (5.5 months). The gap between median durations is larger still: For the Netherlands, 50% of all on-going spells in January 2005 lasted 67 months or longer while the median length of spells that start and end in that same month are only 12 and 9 months, respectively. These numbers still underestimate the true size of the gap because a much larger fraction of spells in the stock samples are censored.<sup>29</sup>

The explanation for this striking result is that longer spells are overrepresented in samples of on-going spells. Any non-censored spell is included in exactly one inflow and one outflow sample, while possibly being part of a multitude of separate stock samples for different waves (depending on the spell's length). This is equivalent to saying that each stock sample includes a disproportionately large number of long spells.

Any inference on spell lengths that is based on a sample of on-going spells will therefore overestimate the issue of long-term benefit dependence. The large share of long benefit spells in stock samples by contrast correctly indicates that long-term recipients are responsible for the most significant part of social assistance caseloads and thus of the expenditures for benefit payments in a given period (Bane & Ellwood, 1994).

## 6.5 Repeat spells and time until re-entry

An important aspect related to the length of benefit spells is whether individuals remain self-sufficient once they have stopped receiving benefits, or how long it takes until they return to benefit receipt. As seen, individual benefit spells in the Nordic countries tend to be much shorter than in Luxembourg or the Netherlands. However, Figure 7 indicated that individuals in Norway and Sweden return to benefits more quickly after having left the benefit rolls. This subsection quantifies the size of this effect by studying the number of benefit spells per individual and the time until re-entry.

One difficulty that arises in such an analysis is that the panel used previously for the calculation of benefit spell lengths is unbalanced. Since the analysis is based on a sample from the working-age population, individuals enter the sample late (by turning 25 years old after January 2001) or leave early (by turning 60 before December 2008). The magnitude of this effect is non-negligible: For Norway, I for instance calculate that over the period from 2001 to 2008 less than two-thirds of individuals in the sample are observed for the full 96 waves. The average observation period is 76 waves, *i.e.* a bit above six out of the eight years. As a result, the number of spells per individual counted in the data will be an underestimate of what would be observed if the sample were balanced.

To address this problem, I restrict the sample to individuals who are of working age during the entire observation period. Individuals who join the panel late or drop out early for age-related reasons are excluded. The resulting sample is balanced except for individuals who leave the data set due to migration or death.<sup>30</sup> Results from the analysis are presented in Table 4. To test the sensitivity of the results to the sample selection criteria, I replicate my calculations

<sup>29</sup>The stock sample suffers from both a right- and left-censoring problem, while the spells in the inflow or outflow sample can only be either right- or left-censored.

<sup>30</sup>The reason why I do not construct a truly balanced sample is that for Luxembourg and Sweden, I cannot observe whether an individual who does not receive benefits remains in the sample.



Table 4: The number of benefit spells per individual

Panel A – standard sample					
	# of of recipients	# of spells		share of individuals in %	
		median	mean	with 2 spells	with 5 spells
Luxembourg	12,056	1	1.4	29.0	0.5
Netherlands	2,572	1	1.4	25.9	0.5
Norway	19,900	3	4.2	70.6	33.8
Sweden	348,806	2	3.6	67.1	27.1

Panel B – ignoring short exits					
	# of of recipients	# of spells		share of individuals in %	
		median	mean	with 2 spells	with 5 spells
Luxembourg	12,056	1	1.3	23.1	0.1
Netherlands	2,572	1	1.3	21.2	0.1
Norway	19,990	2	2.3	56.3	11.4
Sweden	348,824	1	2.0	47.1	6.9

*Note:* Calculations are for the period from January 2001 to December 2008 and based on monthly administrative data from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd) and Sweden (NBHW database). The sample is limited to individuals aged at least 25 years at the beginning of the observation period and below 60 years at the end.

Panel A uses the standard sample while Panel B ignores exits from social assistance benefit receipt that last a maximum of two month. More specifically, spells that are interrupted by a period of non-receipt of 1-2 months are counted as continuous, but the interjacent period of 1-2 months off benefits is not counted towards the length of the benefit spell. For example, two benefit spells of 4 months each that are interrupted by 2 months of non-receipt are thus counted as a single spell of 8 months.

for the standard sample and present the results in Appendix A.3, Table A.2.

The number of benefit spells per individual is inversely related to the length of individual spells across the four countries. For Luxembourg and the Netherlands, countries with a significant proportion of long benefit spells, repeat spells are infrequent. Less than one-third of all recipients in Luxembourg have more than a single spell during the eight-year period and only 0.5% of recipients have five spells or more. In the Netherlands, 25% of recipients are observed as having multiple spells. This number is comparable to the one presented by Snel et al. (2013), who report that 80% of recipients in Rotterdam only have one single spell over the seven-year observation period. In the two Nordic countries by contrast, re-entries into social assistance are relatively frequent. More than two-thirds of benefit recipients in Norway and Sweden have multiple spells and around 30% even have five spells or more.

Especially in the Nordic countries, the number of repeat spells drops considerably if short exits from benefit receipt are ignored. Even then, however, about half of all benefit recipients have at least two spells over the eight-year period, and a sizeable minority of 11% of recipients in Norway and 7% in Sweden have five spells or more.

These findings are robust to using an unbalanced panel for the calculations. The spell count indeed falls when age-related sample drop-out is not accounted for, the size of this effect however is small (Appendix A.3, Table A.2).

The negative relation that I find at the country level between benefit spell lengths and the number of spells per individual could of course be purely mechanical. As individuals in the Netherlands and Luxembourg remain on benefits for longer, they will by construction have



Table 5: The time until re-entry

country	share of benefit leavers in % who re-enter benefits within			
	3 months	6 months	12 months	24 months
Luxembourg	12.0	22.3	32.0	42.0
Netherlands	9.6	16.1	23.1	32.6
Norway	46.7	60.8	70.9	77.8
Sweden	48.6	60.3	69.2	75.2

*Note:* Calculations are based on monthly administrative data for the period from January 2001 to December 2008 from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd), and Sweden (NBHW database). The table gives the share of benefit leavers who return to benefit receipt within a certain time among those who have not yet reached the end of the panel at that time.

less opportunity to return to benefit receipt over a limited observation period. Gustafsson et al. (2002), who obtain a similar result as the one presented, are hesitant to attribute much relevance to it since their observation period of 48 months is very short.

The greater spell numbers for recipients in Norway and Sweden reported in Table 4 are however consistent with the higher re-entry hazards for these countries presented in Figure 7. These hazard rates account for the right-censoring of spells and thus for the fact that individuals with very long spells may have less time remaining until the end of the observation period to re-enter.

To quantify differences in re-entry rates across countries, I present in Table 5 information on the share of benefit leavers who return to benefits. More specifically, I present the proportion of social assistance leavers (with or without a repeat spell) who have re-entered benefits within a certain interval after leaving *conditional on not yet having reached the end of the observation period*.<sup>31</sup>

In Norway and Sweden, nearly half of all benefit leavers return to benefits within three months. This explains the earlier finding that ignoring short interruptions in benefit receipt has a much stronger impact on both measured spell lengths and numbers in the Nordic countries. Only about 25% of benefit leavers in these countries remain self-sufficient for at least the first two years after their exit from benefits. By contrast, I find that less than 10% of benefit leavers in the Netherlands return to benefits within three months and two-thirds of those who are observed for at least two years after leaving remain off benefits during that time. The numbers for Luxembourg finally turn out to be very similar to those calculated by Hoynes (2000) for California, who reports re-entry rates into AFDC receipt of 23% within the first 6 months, of 33% within 12 months, and of 41% within 24 months of leaving (page 355, Table 1).

In summary, the shorter benefit spell lengths in Norway and Sweden coincide with a higher propensity to return into benefits. Moreover, a substantial share of re-entries into benefits in Sweden and Norway happen relatively quickly. Without monthly data on benefit amounts, it is difficult to tell however whether these short interruptions in benefit receipt in the Nordic countries are the result of ‘administrative churning’, or whether individuals indeed gain self-sufficiency for short periods, for instance by finding temporary work. The number of spells per

<sup>31</sup>A recipient who leaves social assistance 10 months before the end of the observation period will thus be included in the sample used to calculate re-entry within 3 or 6 months (columns II and III of Table 5) but not in the sample for re-entry within 12 or 24 months (columns IV and V).

Table 6: The total duration of benefit receipt across spells

country	duration in months		share of recipients in % with a duration		
	median	mean	$\geq 6$ months	$\geq 12$ months	$\geq 24$ months
Luxembourg	32	39.8	88.7	76.3	59.5
Netherlands	23	36.3	79.9	65.6	49.6
Norway	7	16.5	56.0	39.2	23.6
Sweden	10	20.7	62.3	47.5	30.8

*Note:* Calculations are for the period from January 2001 to December 2008 and based on monthly administrative data from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd) and Sweden (NBHW database). The sample is limited to individuals aged at least 25 years at the beginning of the observation period and below 60 years at the end. The total period of benefit receipt is the cumulative time spent in social assistance across all spells that are observed to start during the years 2001 - 2008.

individual is higher however in the Nordic countries even if short interruptions in benefit receipt of one or two months are ignored.

## 6.6 The total duration of benefit receipt

The findings presented thus far indicate a much higher turnover in benefit receipt in Norway and Sweden, with benefit spells being substantially shorter but repeat spells more frequent than in the Netherlands and Luxembourg. These results can be combined to give what is referred to as the ‘total time on welfare’ (Gottschalk & Moffitt, 1994) or the ‘net duration’ of benefit receipt (Leisering & Leibfried, 1999), *i.e.* the cumulative time individuals spend in benefits over the observation period. For better comparability across countries, I again restrict my analysis to a balanced panel of the years 2001 to 2008. Results are presented in Table 6, with Table A.3 in Appendix A.3 providing the robustness check for an unbalanced panel.

For the majority of benefit recipients in the two Nordic countries, total time spent in benefits falls well short of one year over the eight-year observation period. Median net duration on benefits is 7 months in Norway and 10 months in Sweden. The share of recipients who receive benefits for more than two years out of the eight-year period is 24% in Norway and 31% in Sweden.

In Luxembourg and the Netherlands, recipients generally depend on benefit payments for much longer: the median time spent on benefits is 32 months and 23 months, respectively. 60% of recipients in Luxembourg and half of recipients in the Netherlands remain on benefits for at least two years. The number for the Netherlands is again slightly lower than the one calculated by Snel et al. (2013), who report a median net benefit duration of 30 months over a period of seven years for Rotterdam.

In spite of the fact that recipients in Norway and Sweden are more likely to have multiple benefit spells, the total time spent on benefits is hence considerably shorter in these countries.

## 6.7 Characteristics of short- and long-term recipients

To be able to specifically tailor policies at long-term recipients early in their benefit spells, benefit administrations and employment services need to identify the risk factors for long-term benefit receipt. As discussed in more detail in Appendix A.1, a shortcoming of the monthly data used

Table 7: Characteristics of recipients with short and long benefit spells

	Luxembourg	Netherlands	Norway	Sweden
<i>share of females in %</i>				
<i>among recipients with...</i>				
short spells	46.4	34.1	49.5	51.9
long spells	54.6	66.2	42.6	47.9
<i>share of single parents in %</i>				
<i>among recipients with...</i>				
short spells	n/a	11.5	32.2	25.6
long spells	n/a	29.9	25.9	16.9
<i>share of over-55 year-olds in %</i>				
<i>among recipients with...</i>				
short spells	6.5	7.8	11.1	7.0
long spells	11.9	13.9	9.3	7.6
<i>share of immigrants in %</i>				
<i>among recipients with...</i>				
short spells	61.6*	35.9	18.8	22.8**
long spells	52.0*	48.9	36.3	52.3**

*Note:* Calculations are based on monthly administrative data for the period from January 2001 to December 2008 from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd), and Sweden (NBHW database). Short spells are defined as those with a spell length in the bottom decile in the given country; long spells are those with a spell length in the top decile. Recipient characteristics are measured in the first period of the spell. \* share of recipients without Luxembourg nationality; \*\* proportion of recipients living in households in which one of the adults was born abroad.

in this paper is unfortunately that the available information on the characteristics of benefit recipients is not very rich. In this subsection, I break down groups of recipients with the longest and shortest benefit spells by individual characteristics in an attempt to characterise groups that are at greater risk of long-term benefit receipt. Specifically, I consider recipients with spells in the bottom and top decile of the distribution in the respective country, and describe them in terms of available information on personal characteristics. The results of this analysis are presented in Table 7.

In the Netherlands and to a lesser degree in Luxembourg, women are more strongly represented among recipients who start spells with long durations. This result might be driven in part by a large share of single parents among long-term recipients. Interestingly, the gender pattern is reversed in Norway and Sweden, where, perhaps surprisingly, single parents are over-represented in the ‘short spells’ group. In Norway, this finding might again be linked to the fact that low-income single parents will typically receive Transitional Allowance rather than Social Economic Assistance. For Sweden, I do not have a policy-related explanation for this finding.

In Luxembourg and the Netherlands, more senior individuals tend to remain on benefits for longer. In both countries, the share of over-55 year-olds is nearly twice as high among recipients in the top decile of spell lengths compared to those in the bottom decile. If anything, the opposite is true however in Norway, and there is no obvious relation between higher age and the length of benefit spells in Sweden.

Immigrants or individuals with a foreign nationality are represented more strongly among recipients with long benefit spells. In Norway, the share of immigrants among recipients with spell lengths in the top decile is about twice as high than among those with spell lengths in the

bottom decile. Similarly the share of recipients living in the household with an immigrant in Sweden is more than twice as high among recipients with long spells than among those with short spells. The gap for the Netherlands is smaller but still sizable. The fact that I find the opposite result for Luxembourg may again be driven by strong residence requirements for the Luxembourg RMG. While these restrictions were relaxed at the beginning of the observation period in 2001, the share of non-Luxembourg benefit recipients has strongly risen over the observation period. This implies that most non-Luxembourg recipients have been on benefits for a shorter (and more recent) time period.

## 7 Conclusion

In this paper, I have studied and compared the dynamics of social assistance benefit receipt in four European countries: Luxembourg, the Netherlands, Norway, and Sweden. The analysis was based on monthly data from separate administrative registers for the four countries covering periods of 9 to 23 years until the late 2000s. In the first part of the empirical analysis, I have examined aggregate trends in benefit receipt and transition rates and related the findings derived from monthly and annualized data. In the second part, I then followed recipients' paths into and out of benefits in all four countries for the period from January 2001 to December 2008 to describe the distribution of benefit spell lengths, the frequency of repeat spells and the time until re-entry into benefits, and the total duration of benefit receipt across spells.

Benefit receipt rates of working-age individuals do not follow a uniform trend in the four countries. Receipt rates declined since the 1990s in the Netherlands and Norway, remained stable in Sweden, and steadily increased since the late 1980s in Luxembourg. In the late 2000s, monthly receipt rates vary between less than 2% of the working-age population in Norway to over 4% in Luxembourg and the Netherlands. Annualized data of the type used in many existing studies of social assistance benefit receipt provide a good approximation of the monthly receipt rates only for Luxembourg and the Netherlands, where turnover in benefit receipt is low. In Norway and Sweden, short-term fluctuations in benefit receipt are strong, and annualized data on benefit receipt overestimate the share of the population that receives benefits in any given time by about a factor of two.

The patterns of individuals' benefit receipt are very heterogeneous across countries. In Norway and Sweden, social assistance spells are typically very short with a median duration of only two months and only about 5% to 10% of spells lasting 12 months or longer. The majority of recipients however have multiple spells, and re-entry tends to occur quickly after an exit from benefits. In Luxembourg and the Netherlands, by contrast, a substantial share of recipients are long-term dependent. Around 40% of spells in the Netherlands and 60% in Luxembourg last for at least 12 months, and 23% and 37% of spells, respectively, have a duration of 24 months or longer. Those who leave benefits are however much less likely than in the Nordic countries to return to benefits quickly, and less than one-quarter of recipients have more than one spell over an eight-year period. The median benefit duration across all spells of an individual over the eight-year period is well below one year in Norway and Sweden, and two years or above in the Netherlands and Luxembourg.

These results point to the fact that social assistance systems may have different functions

in the four countries studied. In the Norway and Sweden, social assistance appears to play the intended role of providing short-term emergency assistance for individuals in need. In Luxembourg and the Netherlands, by contrast, a substantial share of recipients rely on social assistance as a means of long-term income-support. This may be problematic not only because of the resulting high expenditures for benefit payments. The strong incidence of long-term benefit receipt also implies that many recipients may have little perspective of becoming self-sufficient soon, which may cause frustration and disengagement.

The reasons for the shorter spell lengths and higher entry rates in Norway and Sweden are difficult to determine based on administrative recipient data alone. Differences in benefit dynamics are likely driven by the institutional features of the benefit system, for instance the strictness of eligibility criteria, the generosity of benefit levels, or the availability of active labour-market programmes. Unfortunately, there exists little recent cross-country evidence on the design of social assistance policies. Where social assistance is administered at the local level, as it is the case for instance in the Netherlands, Norway and Sweden, within-country policy variation can moreover be large. Immervoll et al. (2014) provide up-to-date information on the generosity of minimum-income benefits. They show that social assistance benefit levels in Luxembourg and the Netherlands are among the highest among OECD countries reaching typically up to around 40% of national median household income. In Norway and Sweden, the income provided by social assistance is much lower corresponding to about 20% of median household income.<sup>32</sup> Recipients' incentives to take up work might thus be lower in Luxembourg or the Netherlands.

Also the design of the social safety-net more generally might affect the dynamics of social assistance benefit receipt. As a last resort-benefit, social assistance targets individuals who do not qualify (anymore) for higher-tier unemployment insurance or assistance benefits. The design of the unemployment benefit system, *e.g.* the maximum duration of unemployment benefit receipt or the availability of unemployment assistance programmes, will therefore have a direct effect on transitions into social assistance. The same applies for the possible availability of alternative income-support programmes targeted at low-income individuals. In Norway, low receipt rates and short spell lengths for Social Economic Assistance certainly reflect the fact that low-income single parents typically qualify for the more attractive Transitional Allowance. Similarly, the Netherlands, Norway and Sweden all operate comprehensive disability benefit programmes, such that the number of social assistance recipients who suffer from problems of physical or mental health might be lower than in Luxembourg. Unfortunately, the data currently available do not permit accounting for the interaction of social assistance with other benefit programmes.

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<sup>32</sup>These numbers are derived from the OECD tax-benefit model for singles, single parents with two children or married coupled with two children.

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# Appendix

## A.1 The composition of the recipient population

As a last-resort safety net, social assistance tends to support a highly heterogeneous population. Important recipient groups are usually young adults with little work experience, those with low education, single parents with young children, immigrants, individuals with health problems, and other groups with limited incomes and no or little support through other benefit programmes. To the extent that these groups find it more difficult to become self-sufficient than less disadvantaged individuals, the composition of the recipient population will be reflected in the dynamics of benefit receipt, *e.g.* through long benefit durations.

One shortcoming of the data sets used for this analysis is that – with the exception of the Norwegian *FD-Trygd* – they do not provide very rich information on individuals’ socio-economic characteristics. While all four data sets include information on an individual’s age, sex, and origin or nationality, only the data for the Netherlands, Norway, and Sweden give reliable information on family status, and only *FD-Trygd* includes educational attainment. Figures A.1-A.3 give a breakdown of recipients into the most important client groups that can be identified in the data and show changes in the composition of the recipient population over time. For definitions of these variables see Table A.1 in Appendix A.2.

The share of women among recipients varies significantly across countries (upper panel of Figure A.1). It is lowest at around 40% in Norway, where there exists a separate minimum-income benefit (the so-called ‘Transitional Allowance’) to support single parents most of whom are women. In the Netherlands, where the share of single parents among recipient households is highest, close to 60% of recipients are women. In Luxembourg and Sweden, the recipient population consists to about equal shares of women and men. In none of the four countries is there substantial time-variation in the share of women among benefit recipients.

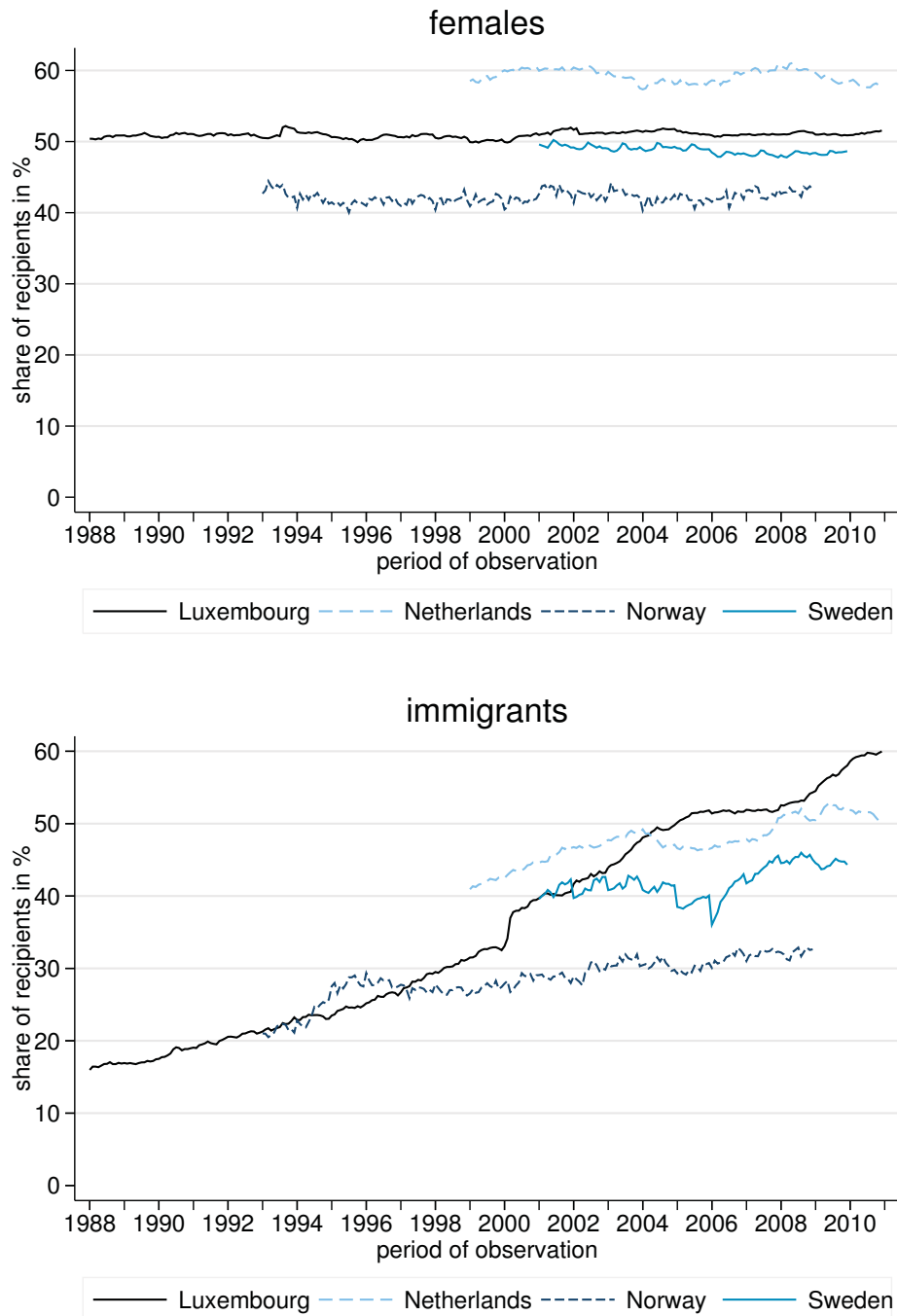
The fraction of immigrants among recipients is high and has been rising considerably in all countries over the observation period (bottom panel of Figure A.1). This effect is most distinct for Luxembourg, where the share of benefit recipients without Luxembourg nationality more than tripled over the observation period from below 20% of recipients in 1988 to close to 60% at the end of 2010. Part of this rise reflects a general increase in the number of migrants in the country. The FNS data unfortunately do not permit calculation of the immigrant share in the overall population. Information from other administrative sources however suggests that over the period from 2001 to 2009 alone, the share of working-age Luxembourg residents without Luxembourg nationality rose from 41% to 46%.<sup>33</sup> The more important factor however is certainly the step-wise relaxation of residence requirements for eligibility to the RMG.<sup>34</sup> The result that non-natives are strongly overrepresented among benefit recipients is a standard finding in the literature on social assistance benefit receipt dynamics and motivates a series of papers on the

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<sup>33</sup>These numbers are based on calculations using data from the annual Social Policy Analysis File on Income in Luxembourg (SPAFIL), see Königs (2012).

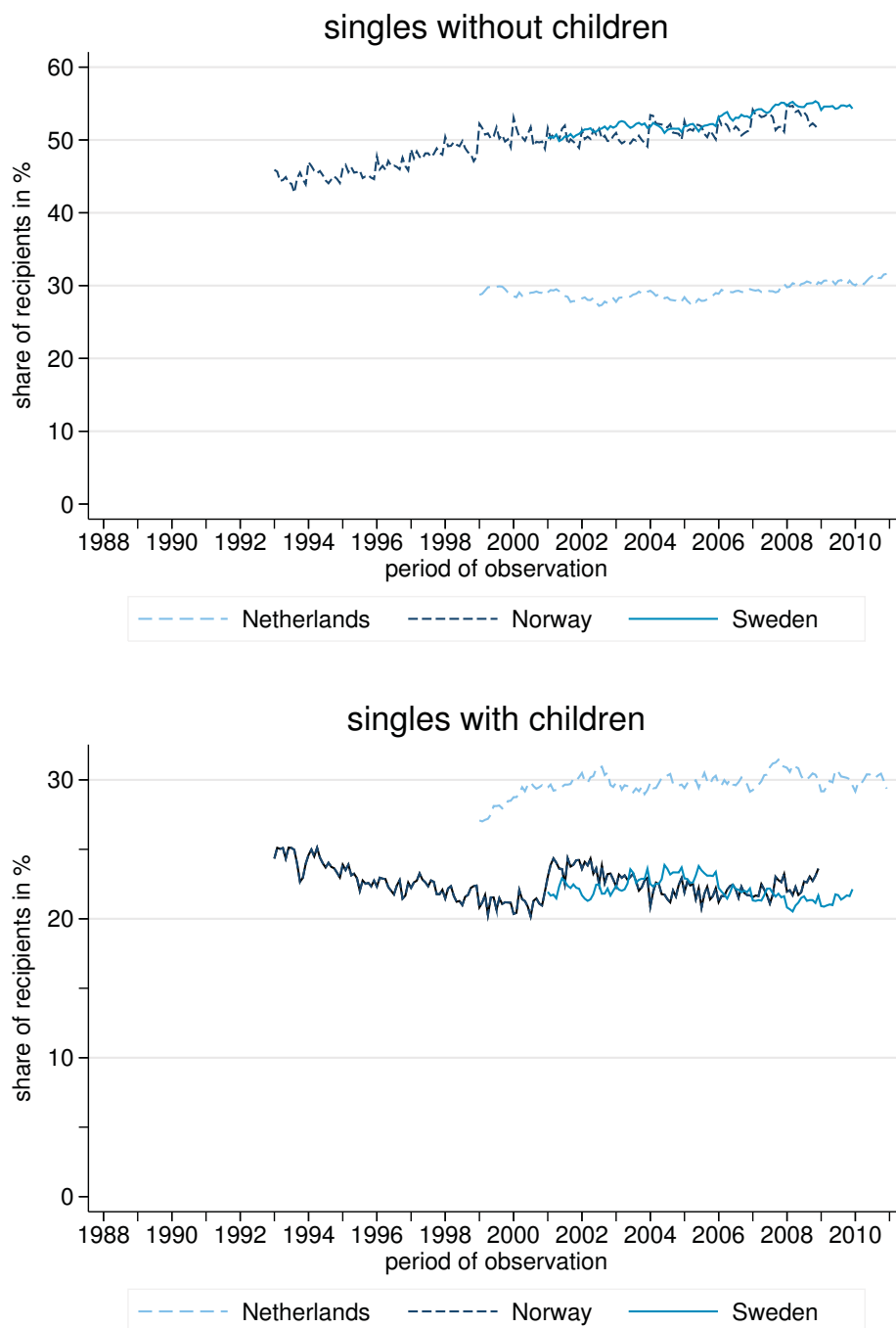
<sup>34</sup>Eligibility for RMG was initially conditional on residence in Luxembourg for the ten years prior to the application for benefits, a requirement that was relaxed sequentially to five out of the last twenty years in 1999. The current rules, introduced in 2001, do no longer impose a minimum residence requirement on EU citizens; non-refugee immigrants from outside of the EU should have lived in the country for at least five out of the last 20 years. For further information see again Königs (2012).

Figure A.1: Composition of the recipient population – females and immigrants



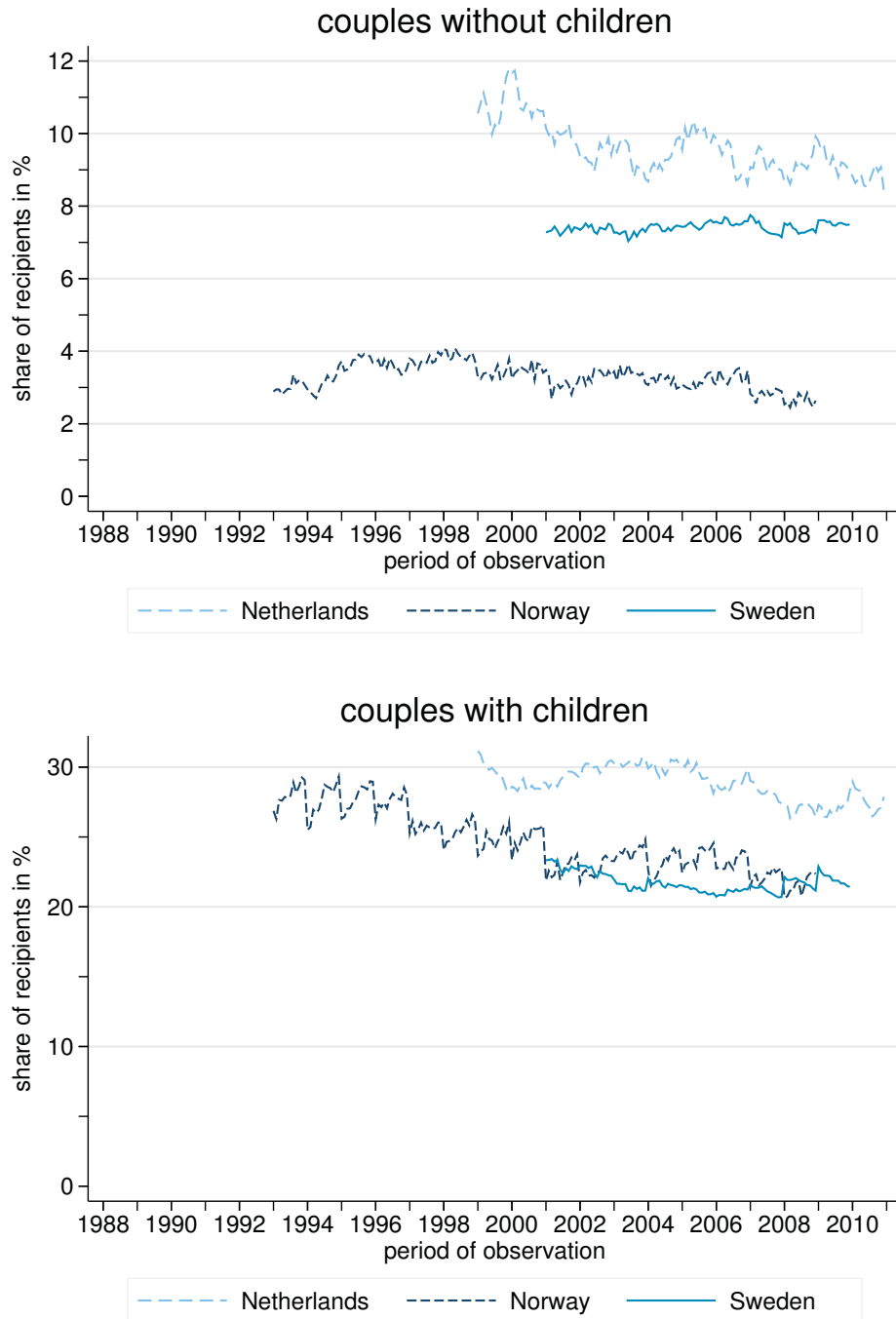
*Note:* Calculations are based on monthly administrative data from Luxembourg (FNS database, 1988-2010), the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). The reported numbers are for individuals aged 25-59 years, with social assistance benefit receipt being defined at the household level. For Luxembourg, the lower panel gives the proportion of individuals without Luxembourg nationality; for Sweden, it plots the proportion of recipients living in a household in which at least one of the adults was born abroad.

Figure A.2: Composition of the recipient population – singles



*Note:* Calculations are based on monthly administrative data from the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). No information on family status is available in the Luxembourg FNS data. The reported numbers are for individuals aged 25-59 years, with social assistance benefit receipt being defined at the household level.

Figure A.3: Composition of the recipient population – couples



*Note:* Calculations are based on monthly administrative data from the Netherlands (SSB, 1999-2010), Norway (FD-Trygd, 1993-2008), and Sweden (NBHW database, 2001-2009). No information on family status is available in the Luxembourg FNS data. The reported numbers are for individuals aged 25-59 years, with social assistance benefit receipt being defined at the household level.

‘immigrant-native gap’ in benefit receipt (see for instance Hansen & Lofstrom (2003, 2008) for evidence on Sweden or Riphahn & Wunder (2012) for results on Germany).

A breakdown of recipient households by family type in Figures A.2 and A.3 shows relatively similar patterns across countries. In Norway and Sweden, singles without children constitute by far the largest recipient group accounting for about half of all recipient households. Singles and couples with children each account for 20-25% of recipient households, with less than 10% of recipient households being couples without children. In the Netherlands, the shares of recipient households with children (singles or couples) is slightly higher at around 30%, and singles without children constitute only around 30% of recipient households. These numbers are comparable to those reported for a larger range of countries by Immervoll et al. (2014). Changes in the frequency of the different household types are modest, though there has been a steady rise in the share of singles without children and a decline of the share of couples with children in the Nordic countries.

## A.2 Variable Definitions

Table A.1: Variable definitions

Variable name	Definition
<i>benefit receipt variables</i>	
$SA_t$ (monthly)	dummy variable =1 if in month $t$ , the individual lived in a household in which social assistance benefit receipt was recorded for <i>any single household member</i> in that month, =0 if no social assistance benefit receipt was recorded for any household member; benefit programmes considered when defining the benefit variable are the <i>revenue minimum garanti</i> (RMG) for Luxembourg, <i>bijstand</i> for the Netherlands, Social Economic Assistance for Norway and Social Assistance for Sweden.
$SA_t$ (annualized)	dummy variable =1 if in December of year $t$ , the individual lived in a household in which social assistance benefit receipt was recorded for <i>any single household member at any time during the calendar year</i> , =0 if no social assistance benefit receipt was recorded for any household member
<i>individual characteristics</i>	
female	dummy variable =1 if the individual is female, =0 otherwise
immigrant	dummy variable =1 if the individual was born abroad, =0 otherwise; for Luxembourg and Norway: individuals without local nationality; for Sweden: individuals living in a household in which at least one of the adults was born abroad
age	individual's age in years
<i>household characteristics</i>	
single, no children	dummy variable =1 if the individual lives in the household of a non-partnered adult without children as defined in the data source, =0 otherwise
single, with children	dummy variable =1 if the individual lives in the household of a non-partnered adult with children as defined in the data source, =0 otherwise
couple, no children	dummy variable =1 if the individual lives in the household of partnered adults without children as defined in the data source, =0 otherwise
couple, with children	dummy variable =1 if the individual lives in the household of partnered adults with children as defined in the data source, =0 otherwise

*Note:* All variables except the annualized benefit variable are measured once per month. The benefit variable  $SA_t$  is constructed at the household level taking into account benefit receipt by any member in that month (monthly benefit variable) / at any time during the calendar year (annual benefit variable). 'Individual characteristics' are defined at the individual level, 'household characteristics' are defined at the household level and identical for all members of the household. Household-type variables were defined from corresponding variables in the original data (*i.e.* not by classifying households based on their observed composition and the age of their members). No reliable household-type information is available for Luxembourg.



### A.3 Results for unbalanced panels

Table A.2: The number of benefit spells per individual – unbalanced panel

	# of of recipients	# of spells		share of individuals in %	
		median	mean	with 2 spells	with 5 spells
Luxembourg	15,338	1	1.4	27.2	0.4
Netherlands	4,785	1	1.4	29.6	1.0
Norway	42,367	2	2.2	54.0	10.0
Sweden	4765,259	2	3.3	64.6	24.1

*Note:* Calculations are for the period from January 2001 to December 2008 and based on monthly administrative data from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd) and Sweden (NBHW database). The panel includes individuals who are only observed for part of the observation period. The sample used takes account of short-term exits (compare panel A in Table 4).

Table A.3: The total duration of benefit receipt across spells – unbalanced panel

country	duration in months		share of recipients in % with a duration		
	median	mean	$\geq 6$ months	$\geq 12$ months	$\geq 24$ months
Luxembourg	31	39.8	88.2	75.7	58.5
Netherlands	23	36.3	79.6	65.8	49.7
Norway	7	14.9	54.4	36.7	20.9
Sweden	9	19.0	60.2	44.7	27.8

*Note:* Calculations are for the period from January 2001 to December 2008 and based on monthly administrative data from Luxembourg (FNS database), the Netherlands (SSB), Norway (FD-Trygd) and Sweden (NBHW database). The panel includes individuals who are only observed for part of the observation period. The total period of benefit receipt is the cumulative time spent in social assistance across all spells who are observed to start during the years 2001 - 2008.

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ISSN: 1892-753X



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