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Underemployment and part-time work in the Nordic countries

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Foreword

This paper is based on six-year cooperation with Nordic researchers interested in part-time unemployment. This cooperation originates with a Swedish research group connected to ALI (the National Institute of Working Life) who were also involved in a Swedish development project (HELA-projektet, 2002–2005) aimed at reducing problems associated with part-time unemployment by stimulating new research and supporting development projects. Some of the researchers in this Swedish group took the initiative to arrange a workshop in Visby on 7–8 December 2005. Invited were researchers from the Nordic countries with an interest in questions of underemployment and part-time unemployment.

The Nordic Network “Underemployment and part-time unemployment in a Nordic comparative perspective” was funded by the Swedish Council for Working Life and Social Research (FAS) for the years 2006–2008. Due to changing conditions, such as the closing down of the National Institute of Working Life (ALI), the network’s funding contract was prolonged to the end of 2011. Inger Jansson of Uppsala University, serving as the network coordinator, has been responsible for managing the network during the whole period.

The aim of the network was to carry out a Nordic comparative research project, and to this end the network applied for money from different funding agencies. The Academy of Finland funded the Finnish research group (2008–2011) as part of the research programme WORK, but the Danish, Norwegian and Swedish researchers have mainly participated in the network alongside their regular duties. The network has met once or twice a year for research exchange in Sweden and once in Finland.

This paper is the summary of our Nordic cooperation. Underemployment and part-time unemployment are problems that exist in all Nordic countries, but these problems have rarely attracted the same attention as full-time unemployment, and there is also less research focusing on part-time unemployment than on part-time work in general. Lately there has, however, been growing interest in this problem, especially in Sweden and Norway.

Questions of working hours and underemployment are vital parts of the complex that comprises labour supply and mobility/flexibility in the labour market, and there is a significant gender bias involved. Both part-time work and part-time unemployment are predominantly a female phenomenon. In addition, results from studies of flows between different conditions in the labour market have further emphasised the complexity that characterises the problem of underemployment.

Clearly, the Nordic Countries both resemble and differ from each other in a manner that makes them interesting to compare. We believe that a Nordic comparative perspective provides great opportunities for addressing central aspects of these complex issues, and thus contributes to a deeper understanding of causes and effects. Of special interest is the extent to which institutional conditions in various ways influence labour market mobility/flexibility and the question of how welfare systems interact with labour market regimes, with special reference to the gender division of labour.

The members of the network and participants contributing to this paper are, from Sweden, Inger Jonsson of Uppsala University, from Denmark, Jens Lind of Aalborg University, and from Norway, Randi Kjeldstad and Erik Nymoen of Statistics Norway and Bente Abrahamsen of Oslo University College. We thank the participants for their good cooperation and especially Inger Jonsson for taking the responsibility for the continuity of the network.

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1 Introduction

1.1 Underemployment – background motivation

Part-time employment has been increasing in the Nordic countries throughout the 2000s. This is partially due to an increased demand from employers and employees for flexibility in working time arrangements. Employers need to organise staffing according to demand and market fluctuations, and employees want to reconcile their work and private lives better. The needs of employers and employees sometimes converge and sometimes contradict each other (Haataja and Kauhanen 2010). When short working hours and short casual work contracts are only based on employers' needs and employees would like to work more hours on longer or permanent contracts, we can speak of part-time unemployment, partial (un)employment, involuntary part-time work or underemployment, i.e. situations between employment and unemployment.

From a policy perspective it is of utmost importance to understand how individuals and different groups in the population may be constrained involuntarily in terms of the amount or type of work they can find or can offer. As in the case of unemployment, partial employment, underemployment and involuntary part-time employment are forms of underutilisation of labour in the labour market. It is important to understand these forms of underemployment so that policies could be designed which might aid in using the labour force more efficiently, enhancing the quality and quantity of the labour supply, and meeting equity objectives (Employment outlook 1990, 179). Former studies also indicate that flexible employment, including part-time employment, often causes feelings of job and income insecurity (Tilly 1991; Burgoon and Dekker 2010).

All of the Nordic countries have introduced policies that help employees to combine work and private life by decreasing their working hours, moving temporarily from full-time to part-time work, and returning later to full-time work. These policies are based on the employees' needs and, may, for their part, increase part-time job opportunities for other persons. The Nordic countries have also introduced policies to help the economic situation of those part-timers who do part-time work only because full-time work or more working hours are not available. In their case, the loss of wage income is partially compensated by unemployment benefits. We have no possibility in this paper to assess the economic well-being of the part-time unemployed. Instead, we compare Nordic part-time unemployment and underemployment by focusing on unemployment benefit schemes and labour force surveys.

In the late 1990s and early 2000s Sweden carried out two large committee-based research projects on part-time unemployment, temporary work and partial unemployment benefit schemes. These

were the DELTA (SOU 1999:27) and HELA projects (Nyberg 2003). One of the project studies mapped the incidence of underemployment on the basis of a large set of register data, starting with industrial sectors and drilling down to the level of local municipalities (Ottosson and Lundquist 2005). Evaluation research has also been done recently in order to follow up the outcomes of the latest reforms (Ek and Holmlund 2011; see also Hartman 2008). The situation in regard to part-time unemployment has been assessed at committee level also in Norway. There the government in the early 2000s appointed a committee to map the occurrence and distribution of involuntary part-time work and to suggest actions to reduce such work (NOU 2004:29; Kjeldstad 2006).

In Finland or Denmark there has been no committee-level attention to partial unemployment during the last decade, but part-time employment and especially involuntary part-time work have been studied. However, in Finland involuntary temporary work has received more attention (Palanko-Laaka 2005; Lehto and Sutela 2009) than involuntary part-time work (Kauhanen 2003 and 2008) because it is a much more common phenomenon than partial unemployment. The Finnish Ministry of Social Affairs and Health financed a small research project on the economic well-being of partially unemployed persons and the impacts of the partial unemployment benefit on the employability of the beneficiaries (Haataja 2007; Haataja and Korkeamäki 2007; Kyyrä 2010).

The problems of partial unemployment have been more serious in the Nordic countries where part-time work is common than in countries with a minor prevalence of part-timers. At the policy level the question has been how to attend to the needs of the partially unemployed via unemployment benefit schemes. Does part-time work function as a stepping stone to full-time employment or does part-time work lead to unemployment traps? Is part-time work a blessing or a curse? (Bolle 1997; Virjo 2006) The way in which these questions have been answered has been instrumental at the policy level when introducing and reforming regulations on partial unemployment benefit schemes. In what way and how long should partial unemployment be compensated in order to help employees to find a full-time job so as to prevent the benefit from functioning as a hidden wage subsidy for part-timers (e.g. Pettersson 2005). Transitions from part-time unemployment to full-time employment compared with other outcomes have been one research branch linked closely to these questions. (Kyyrä 2008; Kyyrä 2010; Nergaard 2010; Månsson and Ottosson 2011).

According to Kyyrä (2010), in the Finnish labour market partial unemployment, meaning persons who work part-time and receive partial unemployment benefits, seems to help men in finding a regular job afterwards, but not women. Instead, partial unemployment associated with short full-time jobs facilitates transitions to regular employment. The same kind of outcome from temporary work has been found in the Netherlands (de Graaf-Zijl et al. 2011). In the Danish labour market,

Kyyrä et al. (2009) have found evidence of a negative lock-in effect and a positive post treatment effect, both of which vary across individuals, for those working part-time on supplementary unemployment benefits. The resulting net effect on the expected unemployment duration is positive for some groups (e.g. married women) and negative for others (e.g. young workers). In Sweden the results of the study by Månsson and Ottosson (2011) show that it cannot be unreservedly asserted that part-time work offers access to the core labour market. Part-time unemployed women, the handicapped, and persons in temporary employment, in particular, had difficulties in finding a full-time job.

Danish trends in part-time employment have, over the long term (since the 1970s), been suggested to differ from many other countries and cannot be explained by the increased flexible working-time patterns of globalization. First, there has been a remarkable decrease in female part-time employment, associated with child care, but male part-time employment has increased, and gender differences diminished until the early 2000s. Further, part-time work has increasingly taken on the character of a youth phenomenon, being often a temporary situation for students. However, more than 10 percent of part-timers work part-time involuntarily because of the lack of full-time work (Rasmussen et al. 2004; Lind and Rasmussen 2008).

In Norway involuntary part-time work and underemployment seem mainly to be tied to job characteristics in female dominated labour market sectors and, above all, to entrenched traditions regarding working hours and persistent part-time work organisations. (Kjeldstad and Nymoén 2004, 2009 and 2010; Kjeldstad 2006). A strongly gender segregated labour market also explains the difference between female and male underemployment. Men tend to be predominantly laid off temporarily and on a part-time basis from their jobs (and mostly entitled to partial unemployment benefits), while women are to a large extent permanently excluded from longer working hours (and benefits). It has been found, however, that underemployed professionals, often in female dominated occupations, are surprisingly no less committed either to their profession or to their organisation compared to colleagues with the preferred number of working hours. In the long run, part-time employment has decreased among certain female dominated employees (nurses) with children but increased again among childless nurses. Both groups of nurses still work part-time more often than other female dominated or less segregated professionals in Norway (Abrahamsen 2010a and b).

Even this short review of the earlier research concerning part-time and partial unemployment in the Nordic countries shows that the results vary across countries, and may vary also according to the data and methods used. However, part-time work as well involuntary part-time work and underemployment are female dominated labour market features in all of the Nordic countries. In all of

them, there is only a small gender gap in employment and unemployment rates, but taking into account part-time unemployment the outcome of total unemployment can be different.

The European Establishment Survey 2004/2005 offers comparative information at the European level about the opinions that employers and establishments have on working time arrangements and part-time work (Fagan et al. 2007). The survey is used also in this Nordic comparison. The results indicate that Finnish employers have opinions that are somewhat more critical towards part-timers than those of their counterparts in the other Nordic countries, but the majority of all part-time work in the Nordic countries is based on employees' needs (Haataja 2007; Haataja and Kauhanen 2010).

The European Working Condition Survey covers, since 2000, all of the four Nordic countries included in this study. The sample size of about 1 000 interviews is, however, too small to allow analyses of small subgroups, such as involuntary part-timers (European Foundation for the Improvement of Living and Working Conditions 2007). There is not very much comparative research from the Nordic countries about part-time work (see e.g. Labour market mobility in Nordic welfare states. 2010) and hardly anything concerning part-time unemployment or underemployment. This paper, for its part, contributes new information about partial unemployment, especially from the perspective of underemployment, involuntary part-time work and part-time unemployment in the Nordic countries.

1.2 The aim of the study

The aim of this study is to identify and measure partial unemployment in the four Nordic countries Denmark, Finland, Norway and Sweden. We are interested in the concepts, extent and characteristics of partial unemployment along with related concepts, such as part-time unemployment, underemployment and involuntary part-time work.

Former research indicates that identifying partial unemployment is an ambiguous task, not only in international comparisons but also in national studies (Forssell and Jonsson 2005; Ek and Holmlund 2011). For example, the concept 'part-time unemployment' is known and used as such in all Nordic countries except Finland, where the concept of partial unemployment or involuntary part-time work is more familiar in the same context. In this paper we use the concepts of partial unemployment and part-time unemployment as synonyms.

Sources for a definition of partial unemployment are the national laws and regulations concerning part-time unemployment and the criteria according to which part-time unemployment is remunerated. The extent of partial unemployment may be measured on the basis of national register based statistics about unemployed jobseekers and recipients of partial unemployment benefits.

Labour force surveys (LFSs) are another source for measuring the extent and characteristics of partial unemployment. Partial unemployment or part-time unemployment are concepts which are not directly available from the LFSs but which can be derived from the survey by looking at data on involuntary part-time work and underemployment. Diagram 1 demonstrates these concepts and shows how they are linked to both employment and unemployment. By definition, working only one hour makes the person employed, but that employment may be partial. Partial employment can be either voluntary or involuntary. Employees who would like to work more can be, according to different definitions, either underemployed or involuntary part-time employees. According to LFS definitions persons classified as unemployed have no job at all and have not worked during the reference week. Partially unemployed can, then, be defined as persons who have work, but not enough. Part-time unemployment and partial unemployment are concepts derived from employment, involuntary part-time employment and time-related underemployment, but accentuate the partial nature of the unemployment.

Diagram 1. The concepts of partial unemployment in light of the definitions used in the Labour Force Surveys.

Labour Force Survey Information from the Labour Force Surveys:		
Employed (work at least 1 hour / week)		Unemployed, no job
Full-time	Part-time <i>Partial employment:</i> has on or several jobs	Full-time, looking for a job <i>Partial unemployment:</i> looking for more hours/ job
-> underemployment, long working time	-> involuntary part-time -> time-related underemployment	=> "part-time unemployment"? => "partially • unemployed"

These definitions are looked at in more detail in chapter 2, which starts with the definitions of employment, unemployment, underemployment and part-time work, voluntary or involuntary, employed in the labour force surveys. The unfinished harmonisation process affects the long-term comparability of different labour market indicators, as will be seen in this chapter.

Chapter 3 first focuses on the long-term development of part-time employment in the four Nordic countries. As a synonym for partial unemployment we use here the concept of involuntary part-time work. This kind of data is available from Eurostat's Internet archives. Involuntary part-time

work does not, however, mean exactly the same as underemployment according to the LFS criteria. In the rest of the subchapters of chapter 3 we use individual survey data from Eurostat's European Labour Force Survey 2008. With this data we analyse how involuntary part-time work and underemployment are related to each other, what the main characteristics of involuntary part-timers and the underemployed are, and whether these characteristics differ between the Nordic countries. Finally the chapter summarises the total volume of unemployment when full-time and part-time unemployment are added up.

Partial unemployment materializes in practice as entitlement to compensation for lost wages or working time compared to the full-time work one is looking for. The Nordic countries have different backgrounds when it comes to the treatment of the partially employed and the unemployed. In chapter 4 we first compare the rules of part-time unemployment benefit schemes as a part of normal (full-time) unemployment benefit schemes. After that we look at statistics concerning register based unemployment, both from the perspective of benefit statistics and job seekers' registers, and from the point of view of EU and national statistics. The main interest in this section is to discover how visible or invisible partial unemployment is in the register based statistics.

Finally in chapter 5 we summarise the results of the comparisons and suggest some further research areas.

2. Between employment and unemployment: Definitions used in the Labour Force Surveys

2.1 Employment and unemployment

Labour force surveys are carried out in most developed countries, and the main concepts of *economically active population*, *employed* and *unemployed* are defined by international organisations, principally by the ILO. The European Union and Eurostat use concepts that are in accordance with the ILO definitions. The ILO definitions are, however, rather broad and they allow considerable flexibility in the EU and national definitions.

First, a person is classified as *employed* if she/he has worked at least one hour during the survey week or is temporarily absent from work because of sickness, parental leave, vacation or other similar reason. Secondly, a person is classified as *unemployed* if she/he has not been employed during the survey week but has looked for work during the last 4 weeks and is able to take a job within 2 weeks of being offered one. In the hierarchy of definitions, persons who are either working or looking for work are classified as employed, and persons who are looking for work but otherwise eco-

nomically non-active, e.g. students, pensioners or those caring for children at home, are classified as unemployed (EU-LFS Basic concepts and definitions¹; (Mata-Greenwood 1999, 17). Employed and unemployed persons form the labour force, the ‘active population’, and the rest make up the ‘inactive population’.

Despite harmonisation of the main concepts of *employed* and *employment* some differences still persist in long time series. One difference concerns the age limits. Most EU countries focus the survey on working age persons 15 years of age and over. Finland and Denmark use this age group as the youngest group. Sweden and Norway, too, have adhered to this practice since 2001 and 2008, respectively. Earlier, the youngest age group in Sweden and Norway was 16 years. This age difference has an impact on youth employment. In practice the EU has established employment indicators only for those between the ages of 15–65 years. That has been reasonable because the age of 65 years has been the official old age pension age in many countries, as it is Denmark and Sweden and was in Finland until 2004. The pension reform of 2005 introduced a flexible old age pension age of 63–68 years for Finland. The highest retirement age (67 years) is found in Norway. However, in Sweden, Norway and Denmark it is possible to postpone the start of the old age pension period by years and thereby accumulate earnings related pension benefits. In Denmark since 2009, this can go on until the age of 75.

There have also been variations in the definition of *unemployment*. Some of them concern, for example, the classification of full-time students who are looking for work, and others the prerequisites of how ‘looking actively for work’ is defined and what is the longest waiting period to take a new job. Eurostat lists nine categories to test whether one is actively looking for work².

According to Ek and Holmlund (2011, 141), in the case of the unemployed, the concept of ‘looking actively for work’ is defined more strictly in the United States than in the Eurostat statistics, because in the EU-LFSs it is enough to fulfil the condition of ‘actively looking for a job’ merely by studying job advertisements. In Sweden the definition was also more demanding until 2004. Since then the Swedish LFS has used the same minimum criterion of actively looking for work as the EU. In Finland the old criterion for actively looking for work was fulfilled if one registered in the public employment office; no other action was required. Since 1997 other activity measures, such as studying job advertisements, have been included in the definition. This change did not have a large im-

1 http://circa.europa.eu/irc/dsis/employment/info/data/eu_lfs/lfs_main/lfs/lfs_concepts_and_definitions.htm.

2 http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/methodology/definitions

1) having been in contact with a public employment office to find work, whoever took the initiative (renewing registration for administrative reasons only is not an active step), 2) having been in contact with a private agency (temporary work agency, firm specializing in recruitment, etc.) to find work, 3) applying to employers directly, 4) asking among friends, relatives, unions, etc., to find work, 5) placing or answering job advertisements, 6) studying job advertisements, 7) taking a recruitment test or examination or being interviewed, 8) looking for land, premises or equipment, 9) applying for permits, licenses or financial resources.

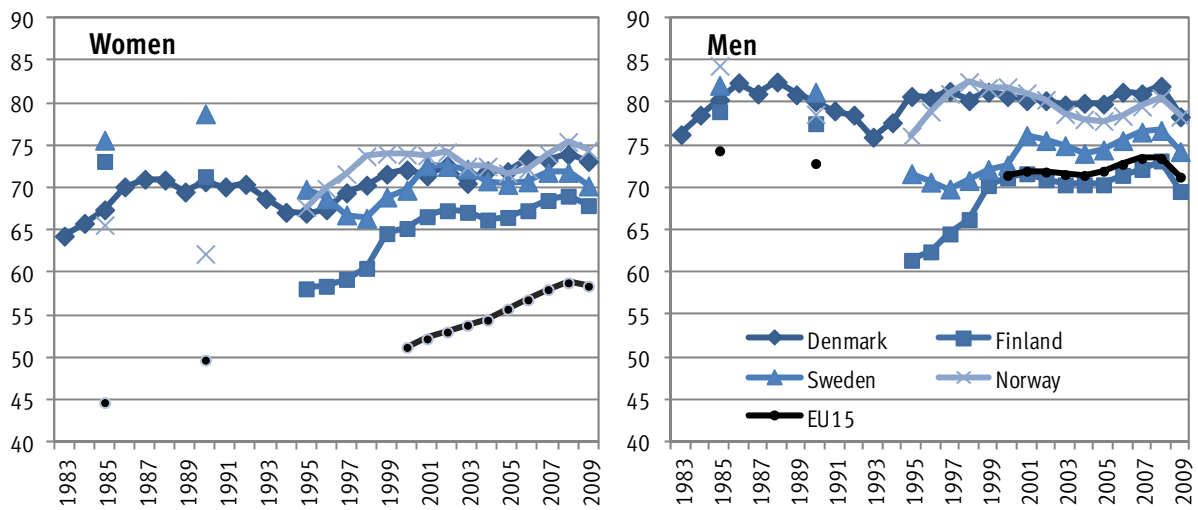
pact on the Finnish unemployment rates, because about 80 percent of the unemployed in the Finnish LFS had been actively looking for work by other means (Tilastokeskus 1999, 4).

Official national unemployment statistics are based on both labour force surveys and jobseeker registers (see chapter 4). In the LFSs persons are defined as unemployed if they are without work, have looked for a new job during the last four weeks, and are available for a new job within two weeks. They do not have to register as unemployed job seekers at the employment office. Unemployed job seekers registered at the employment office are not classified as unemployed in the labour force survey if they do not fulfil the activity criterion, i.e., have not looked for a new job. This applies particularly to older people with long periods of unemployment and who may be waiting for a pension but are receiving unemployment benefits. In the LFS they are counted among the inactive population. Register based unemployment is discussed in more detail in chapter 4.

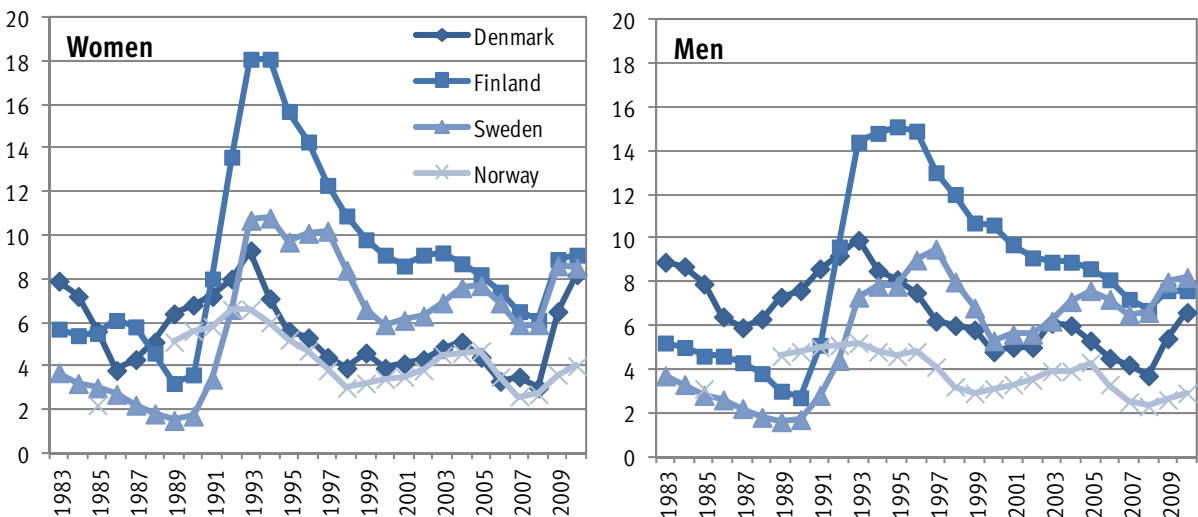
Full-time students who are looking for work and are able to take a job are classified as unemployed. In Sweden this classification was adopted in 2007 (Ek and Holmlund 2011, 141), having been introduced in Finland as early as 1997 (Tilastokeskus 1999). Previously, full-time students in Sweden and full-time students of certain schools and educational institutes in Finland were always classified outside the labour force, as students. The changes in the classification of students, the specific actions one is required to take show that one is looking for work, and how quickly the work has to be accepted after a job offer, increased unemployment rates by a few percentage points on average in both countries.

To sum up, harmonisation of the national labour force statistics has occurred at different times in different countries. However, the employment and unemployment time series have been harmonised backwards so that they are available for Finland since 1989 and for Sweden since 1987. In Denmark, the harmonisation has a longer history, partially due to Denmark's early membership in the EU. Norway is not a member of the European Union, but the main concepts are in overall accordance with ILO and EU recommendations and available, albeit to a more limited extent.

The Diagrams 2.1 and 2.2 give an overall picture of how employment and unemployment have developed among women and men in the Nordic countries. Based on information from the EU-LFS (2011) the time series refer to the period 1983–2009 (2010 for Denmark), and concern both employment and unemployment. Harmonised employment rates are available from Eurostat only since 1995 for the rest of the Nordic countries. Non-harmonised unemployment rates from Sweden extend over the same period as in Denmark (since 1983), while corresponding data is available for Finland only since 1987 and for Norway since 1989.

Diagram 2.1. Employment rates of women and men (%) in the Nordic countries 1983–2009.

Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database_lfsa_ergan-Employment rates by sex, age groups and nationality (%) and national sources.

Diagram 2.2. Unemployment rates (%) in the Nordic countries 1983–2010.

Source: Eurostat website, table une_rt_a-Unemployment rate, annual average, by sex and age groups (%) and national sources.

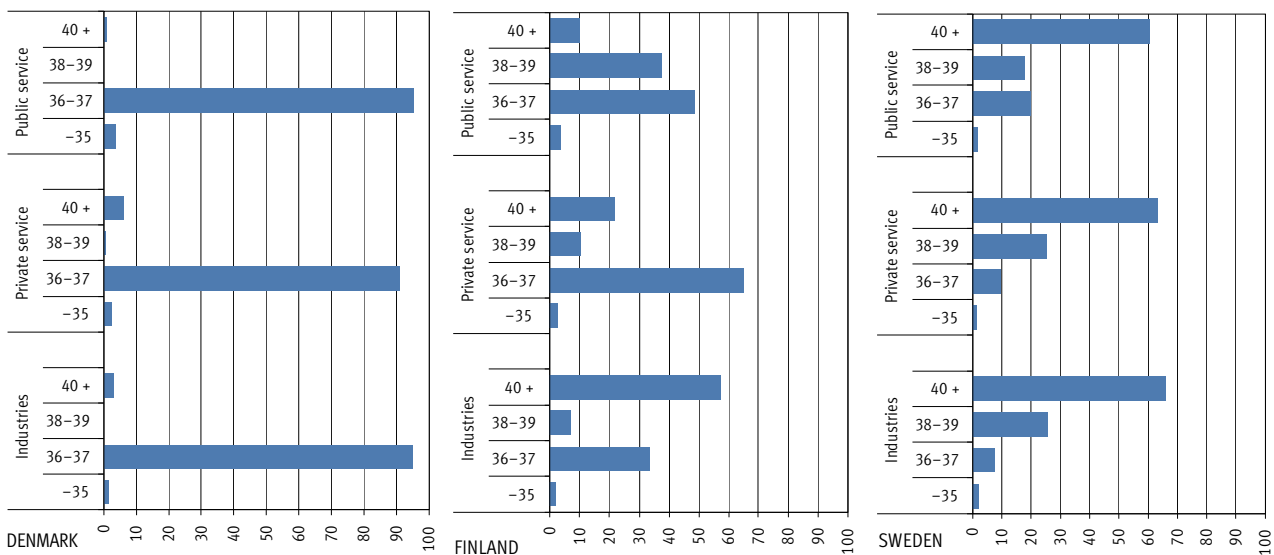
With regard to the overall employment development in the Nordic countries, it can be noted that employment rates in the 1980s were higher than the average for EU countries both among men and women. An economic recession in the early 1990s hit Finland and Sweden especially hard, and they have not recovered up to the level of the 1980s. The recent recession of 2009–2010 decreased employment in all of the countries, affecting also the EU averages. The unemployment rates have increased accordingly as can be seen in Diagram 2.2. In 2009 and 2010 unemployment rates increased in all Nordic countries, most notably in Denmark, where unemployment rates now reached the levels of Finland and Sweden.

2.2 Working time and voluntary/involuntary part-time work

The EU directive on working time regulates maximum working time as 48 hours (2003/88/EC). In Finland, Norway and Sweden maximum average weekly working hours are set by legislation at 40 hours per week, whereas in Denmark, the maximum is 48 hours (Labour market mobility in Nordic welfare states 2010, 143). Normal full-time working time, however, may vary across industries and sectors in one country as well across countries. In Denmark standard weekly working hours have dropped from 44 hours in the early 1970s to 37 hours in the late 1980s (Rasmussen et al. 2004).

The deviation of contracted working time at the company and establishment level is available from the European Establishment Survey carried out in 2004–2005. The survey covers private and public sector establishments with at least 10 employees in 21 EU Member states. Of the Nordic countries, Denmark, Finland and Sweden are included (Riedmann 2005; European Foundation for the Improvement of Living and Working Conditions 2008). According to the survey the greatest variation in contracted normal full-time working hours is seen in Finland whereas in Denmark 37 hours covers practically all sectors. In Sweden 40 hours a week is the most common contracted full-time working time in all the main sectors (Diagram 2.3). On the other hand, about 30 percent of the Danish establishments, but only 12 percent of the Finnish and 9 percent of the Swedish, report that there are no collective agreements concerning working time at the company.

Diagram 2.3. The division of employees according to contracted full-time working hours of establishments in the Nordic countries (%) in 2004/2005^a.



^aSource: Haataja and Kauhanen 2010, information based on ESWT 2004/2005.

According to ESWT nearly half (47%) of Finnish workplaces had no part-time workers at all whereas the same shares were 28 percent in Denmark and 20 percent in Sweden. The reason for introducing part-time work mainly to address the needs of establishments was also most common in Finland (37%) compared with 25% in Sweden and 19% in Denmark. However, in all these countries it is the employees' wishes that have been the most common reason for introducing part-time work. The share of establishments where this was the case varied from 43 percent in Finland to 53 percent in Sweden (Haataja and Kauhanen 2010). In this context, it is worthwhile to note that each of the Nordic countries has introduced regulations, albeit quite different, concerning parents' rights to reduce working time temporarily until their children have finished their first school years. Furthermore, there are legal rights for employees to work part-time when partially incapacitated or before entering retirement on a full-time old age pension (see subchapter 3.2.1).

There is no exact definition for part-time working time but part-time work and the position of part-timers are regulated in the European Union by Directive 97/81/EC. The aim of the directive is on one hand to prevent discrimination of part-time workers and to improve the quality of part-time work. On the other hand the directive promotes an increase in voluntary part-time work and flexible working time arrangements which take into account the needs of both employees and employers. The annex to the directive (the Framework Agreement on Part-Time Work concluded between the European social partners) emphasises that employers should, according to their ability, take into account the wishes of their employees in moving from part-time to full-time work or vice versa, and inform their staff in a timely manner about available part-time and full-time vacancies.

In summary, there is huge variation in normal working times and in full-time and part-time work both at individual and company levels. At the individual level, working time on average and among part-timers is studied further in chapter 3. The deviations of working time imply that full-time work in one sector in one country may be defined as part-time work in another sector in the same or another country, and vice versa. This is recognised also in the Eurostat definitions of part-time and full-time work³.

Because of the lack of a universally accepted definition of part-time work, a certain number of weekly hours have been used as a basis for comparisons of part-time work (for example, fewer than 30 or fewer than 35 hours per week). (Bolle 1997; Forssell and Jonsson 2005; Nergaard 2010). The OECD for instance defines part-time work as consisting of 30 hours per week in its labour force statistics publications⁴.

³ http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_ifs/methodology/definitions.

⁴ <http://stats.oecd.org/glossary/detail.asp?ID=3046>. In OECD.StatExtracts databases data on part-time employment is, however, available also according to national definitions.

The *European Labour Force Survey* uses a harmonised definition of part-time employment according to which part-time work is based on an assessment of the nature of the work by the respondent, independently of the number of hours worked per week. However, there are exceptions to this rule: in the Netherlands, Iceland and Norway part-time is defined as fewer than 35 usual hours of work per week, while full-time means 35 usual hours or more; in Sweden, this criterion applies to the self-employed.

This harmonised definition has been adopted in the national statistics at different points in time. Denmark has used this criterion for part-time work (respondent's own opinion) for a long time. Finland adopted it in the national labour force survey of 1997 prior to which a threshold of 30 hours per week was used. The change of the definition increased the share of part-timers by 3–4 percentage points and the number of part-timers by about 50,000–75,000 persons in Finland in the 1990s (Haataja and Korkeamäki 2007, 23).

Sweden has used the EU definition since 2005. Before then, those who worked less than 35 hours were classified as part-time employees (Forssell and Jonsson 2005). Norway still uses a working time limit of 36 hours per week to classify part-time employees. (Table 2.2.1).

Table 2.2.1. Development of the definition of part-time work in the national labour force surveys until 2010.

Part-time	Fixed hours less than	Until	Own opinion available	In LFS since year	Asked earlier, availability
Denmark*			Yes		
Finland	30	1996	Yes	1997	1989–
Sweden	35	2004	Yes	2005	2000–
Norway**	37		No		

* Persons' own opinion available from the beginning of the EU-LFS.

** In Norway persons who work 30-36 hours and who classify themselves as full-time employees are also classified as full-timers (http://www.ssb.no/vis/english/subjects/06/01/aku_en/main.html).

Eurostat and the OECD today give a rather different picture about the prevalence of part-time employment. The OECD definition of 30 working hours per week gives much lower part-time rates than the EU-LFSs, which are based either on the respondent's own opinion or on a fixed definition of 36 working hours. Another difference between the organisations is that the OECD normally presents labour force information for the age group 15–74 years of age rather than the age group 15–64 years, as Eurostat does. The shares of part-time employment, however, are rather similar regardless of how the relevant age group is defined, as seen in Table 2.2.2. The definition of part-time work is more relevant, though in different ways in different countries.

Table 2.2.2. Part-time employment, % of total employment based on Eurostat (age groups 15–64 and 15–74) and OECD (age group 15–74) statistics in the 2000s.

Part-time, % of total employment	2000			2009		
	EU 15–64	EU 15–74	OECD	EU 15–64	EU 15–74	OECD
Denmark	21.4	21.7	16.1	25.2	26.0	18.9
Finland	11.9	12.2	10.4	13.3	14.0	12.2
Norway	25.7	26.1	20.2	27.8	28.6	20.4
Sweden	21.8	26.1	14.0	26.0	27.0	14.6
EU15	17.5	17.9	16.2	21.0	21.5	18.6

Source: OECD: data extracted on 29 Oct 2010 13:13 UTC (GMT) from OECD.Stat. http://stats.oecd.org/Index.aspx?DataSetCode=FTPTC_I.
Eurostat: Part-time employment as percentage of the total employment for a given sex and age group (%), [lfsa_eppga]
http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database.

The differences between the outcomes of the comparison are especially marked in Norway, 6–8 percentage points, and in Sweden, 12 percentage points. This may stem from the fact that long part-time hours are more common than short hours in these countries. According to Eurostat there is a big difference in the prevalence of part-time work between Finland and the other Nordic countries. However, the differences are much less pronounced when looking at the information from the OECD. (Table 2.2.2.)

Part-time work is divided into voluntary and involuntary part-time employment. When the respondents declare that they work part-time because they are unable to find full-time work, they are classified as *involuntary part-time workers* according to Eurostat definition in the Employment and unemployment (LFS) database⁵. The exact OECD definition is ‘Involuntary part-time work comprises three groups: i) individuals who usually work full-time but who are working part-time because of economic slack; ii) individuals who usually work part-time but are working fewer hours in their part-time jobs because of economic slack; and iii) those working part-time because full-time work could not be found.’⁶

According to the OECD’s statistical database, involuntary part-time is, however, defined somewhat differently for individual countries. The Finnish and the Danish definitions are simple, ‘lack of full-time work’, but the Swedish and Norwegian definitions resemble underemployment. In Sweden the definition is ‘Additionally, these persons wish to work more hours during the reference week or within 14 days and are available to start work during the reference week or within 14 days’ and in Norway ‘and would prefer to work more hours (not only “would prefer”, but also tried to get prolonged working-hours). They are also persons who wish to work more hours (and have been seeking more work) and are available to start work within a month’ (OECD StatExtacs, Incidence of involuntary part-time employment, Metadata. <http://stat.oecd.org/>).

⁵ http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database.

⁶ <http://stats.oecd.org/glossary/detail.asp?ID=2016>.

Again, the fixed working time definitions used for example in the EU and OECD statistics give different results for the prevalence of voluntary and involuntary part-time work. The age definitions do not matter very much, but the overall outcome is that involuntary part-time work is somewhat rarer when the age limitation is broader. That may be due to an increase in voluntary part-time work before full-time retirement (Table 2.2.3).

Part-time work is mostly done on a voluntary basis in the Nordic countries. Using the OECD and Eurostat definitions, involuntary part-time work as a share of total part-time work has been most common in Finland. However, the share of involuntary part-time work in total part-time employment has in recent years diminished in Finland, increased in Norway and in Sweden, but stayed at about the same level in Denmark according to EU statistics.

The European SILC survey (Community Statistics on Income and Living Conditions) also offers information about respondents' voluntary and involuntary part-time employment. However, involuntary part-time employment is only asked of those working less than 30 hours. (European Commission 2007, 175–177 and 191)⁷. Thus, in the EU-SILC survey involuntary part-time employment is seen as a synonym for underemployment.

Table 2.2.3. Involuntary part-time employment as % of total part-time employment in the Nordic countries according to EU and OECD definitions in the 2000s.

Involuntary part-time	Denmark	Finland	Norway	Sweden ^a	EU 15
Total EU statistics (15–64 years of age)					
2000	13.6	34.8	11.5	24.8	16.7
2010	15.2	27.9	17.8	27.6	26.1
(15–74 years of age)					
2000	13.7	34.8	11.1	23.3	16.3
2010	14.8	26.1	16.9	26.1	25.2
Total OECD statistics (15–74 years of age)					
2000	11.0	34.2	6.1	24.5	12.8
2010	10.6	27.0	5.8	21.8	20.2

Source: data extracted on 23 Nov 2011 11:51 UTC (GMT) from OECD.Stat. http://stats.oecd.org/Index.aspx?DatasetCode=INVPT_I.

^aIn Sweden big differences in OECD statistics are due to changes in age group from 16-64 until 2007 to 15-74 years of age.

Eurostat: Involuntary part-time employment as percentage of the total part-time employment for a given sex and age group (%) [lfsa_eppgai].

As a rule, involuntary part-time employment corresponds closely to time-related underemployment, as can be seen in see the next chapter, but there are some important differences between the definitions when the EU-LFSs are used as data source. The underemployed are expected to be will-

⁷ From the definition of self-defined current economic status in the EU-SILC survey: "The distinction between full-time and part-time work should be made on the basis of a spontaneous answer given by the respondent. It is impossible to establish a more exact distinction between part-time and full-time work, due to variations in working hours between Member States and also between branches of industry. By checking the answer with the number of hours usually worked, it should be possible to detect and even to correct implausible answers, since part-time work will hardly ever exceed 35 hours, while full-time work will usually start at about 30 hours."

ing and available to work more, and some testing of this willingness is build into the definition, yet no such expectations are associated with the definition of involuntary part-time workers.

2.3 Underemployment

The ILO defines underemployment as a labour market situation where the employed are available and willing to work more hours than they are able to in their current situation. The definition was adopted in 1982 by the 13th ICLS and amended in 1998 by the 16th ICLS. Underemployment is one of the ILO's 20 Key Indicators of the Labour Market (KILM) for the monitoring and assessment of current labour market trends worldwide⁸.

According to the ILO, broadly interpreted underemployment can be used to describe any sort of unsatisfactory employment as perceived by the worker, such as insufficient hours, or insufficient compensation or use of one's skills. This kind of broad concept of underemployment is hard to measure and compare especially in international contexts. That is why a narrower and more specific concept, 'time related underemployment', has been accepted within the international community of labour statisticians to define underemployment properly⁹. In spite of the limited definition the ILO considers time-related underemployment as useful supplemental information on employment and unemployment, as it enriches "an analysis of the efficiency of the labour market in terms of the ability of the country to provide full employment to all those who want it".

In the ILO KILM indicators, time related underemployment is measured only for those who work a maximum of 30 hours per week. Hence, underemployment rates in the Nordic countries vary at a very low level, between 1 and 3 percent of average total employment in 2008 (Table 2.3.1). The Nordic countries nowadays use a broader concept of part-time work than the ILO or the OECD does (former chapter).

Table 2.3.1. The share of time-related underemployment, % of total employment in the Nordic countries according to KILM indicators.

	1990	2000	2005	2008
Denmark	2.0	1.8	2.5	1.5
Finland	..	3.5	3.1	3.0
Norway	2.9	1.2	1.9	1.0
Sweden	2.3	3.4	3.2	2.9

Source: <http://kilm.ilo.org/KILMnetBeta/default2.asp>. Table 12. Time-related underemployment.

⁸ http://www.ilo.org/global/What_we_do/Statistics/topics/Underemployment/lang--en/index.htm.

⁹ <http://kilm.ilo.org/KILMnetBeta/pdf/Guide%20to%20Understanding%20the%20KILMEN-2009.pdf>.

According to the ILO, the proportion of time-related underemployment was highest in Finland and Sweden in the 2000s. Women's underemployment shares have been much higher than men's, being in Finland and Sweden over 4 percent, in Denmark over 2 percent, and in Norway 1.6 percent in 2008. The corresponding shares of men were below 2 percent in Finland and Sweden and below 1 percent in Denmark and Norway. According to a recent Swedish study, where the threshold for underemployment and part-time unemployment was defined as below 35 hours of work per week, underemployment rates in 2009 varied from 6 percent among men to 9 percent among women in the age group 15–74 years (Ek and Holmlund 2011, 149).

The OECD's Glossary of Statistical Terms¹⁰ divides underemployment first into visible and invisible underemployment. Invisible underemployment refers to individuals working in jobs where their skill are not adequately utilised, while visible underemployment refers to those who involuntarily work less than the usual number of hours and who are seeking or available for additional work. Time-related underemployment refers to individuals whose working hours are insufficient in relation to an alternative employment situation in which the person is willing and available to engage, i.e. they are willing to work more hours or another job by actively seeking more hours or jobs.

Underemployment has not been amongst the key labour market indicators in the EU, nor has Eurostat given specific attention to the concept of underemployment. However, in November 2011 Eurostat introduced three new indicators as 'halos' around unemployment. One of the indicators is 'underemployed part-time workers'. The two other new indicators are 'persons seeking employment but not available to work' and 'persons available to work but not seeking', both groups normally classified as inactive population (Statistics in Focus 2010a and b). These indicators are so recent that they could not be further analysed in this report.

In the Nordic labour force surveys, descriptions of underemployment vary according to the intensity with which the underemployed are presumed to be either looking for work or to be ready to take on more work. In the *Finnish labour force survey* the underemployed are defined as employed persons who work part-time because full-time work was not available, who work a shorter working week because of their employer's needs, or who have sporadically had no work because of reduced demand or layoffs. They are, in other words, mainly employed persons who would like to work more.¹¹

10 <http://stats.oecd.org/glossary/search.asp>.

11 http://www.stat.fi/til/tyti/2009/17/tyti_2009_17_2010-12-03_kat_006_fi.html.

The *Swedish labour force survey* (AKU) defines the underemployed as employed persons who work less than they would like to work and who could work more during the reference week or during the 14 days following the reference week¹². In Norway the underemployed or the involuntarily part-time employed comprise, in the labour force survey, persons who are employed part-time while seeking longer settled/usual hours by means of registering at the Employment Offices, reading advertising, contacting their present employer, etc., and who are able to start working increased hours within a month. In practice there is no difference between the definitions of involuntary part-time work and underemployment in Norway¹³.

While the *Danish labour force survey* does not focus on underemployment, it collects information according to the common ILO and Eurostat definitions. In the Danish LFS definitions it is more common to identify different kinds of labour reserves than to classify underemployment. The labour reserve in the LFS consists of job seekers who are employed full-time, employed part-time, or unemployed. The labour reserve is calculated from the number of hours the employed or unemployed persons want to work.

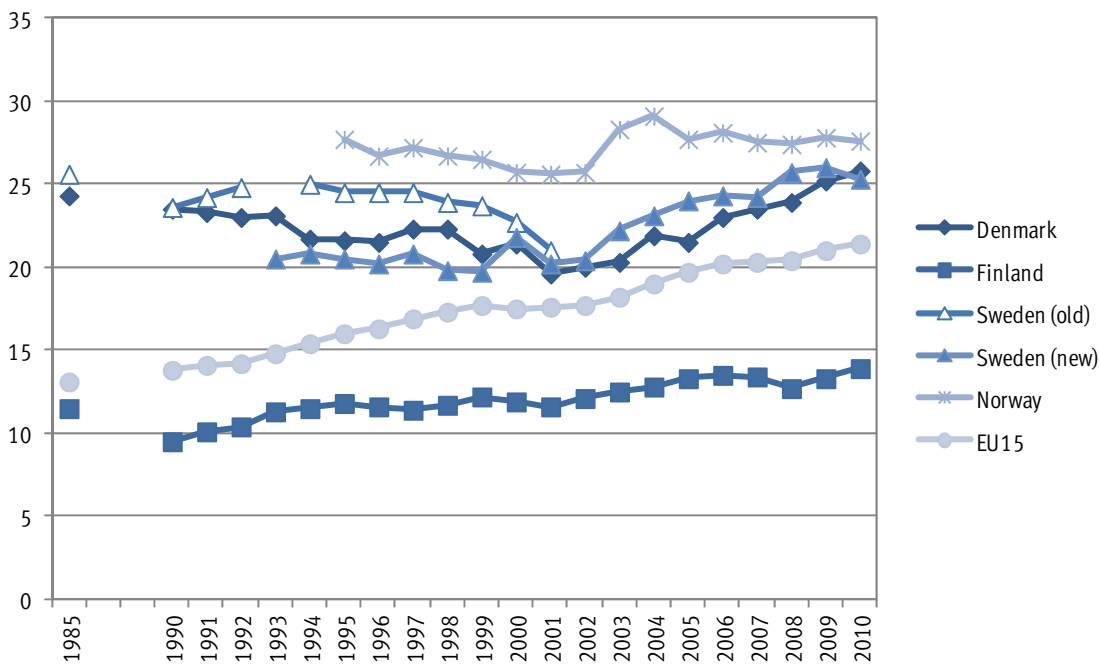
3 Underemployment and involuntary part-time work in the Nordic countries

3.1 The development of part-time employment in the long run

Comparing Finland to the other Nordic countries, we see that the Nordic countries have followed different paths of development when it comes to part-time employment. In Finland women made a practically direct transition from the agrarian society to full-time paid employment over a relatively short period of industrialisation and urbanisation between the late 1950s and the 1970s. By contrast, in the other Nordic countries part-time work has been a more common form of female paid employment.

¹² http://www.scb.se/Statistik/AM/AM0401/_dokument/AM0401_BS_2010.pdf.

¹³ http://www.ssb.no/english/subjects/06/01/aku_en/about.html.

Diagram 3.1.1. Part-time employment, % of total employment in the EU in 1985 and 1990-2010, age 15–64 years.

Source: For the years 1985–1994, *Employment in Europe*, European Commission 2000, Annex tables. (In the case of Sweden, the year 1985 refers to 1987. Swedish ‘old time series’ describe part-time prevalence before adjusted to represent respondents’ own opinion). For 1995 and onwards: Eurostat websites (numbers for the years 2000–2010 updated in May 2011).

Finland experienced a workforce shortage after the Second World War. A committee established in the late 1940s to study paid work by married women considered increasing part-time work as one option. Part-time work would make it easier for mothers of small children to participate and help their families economically. The employers, however, were sceptical and believed that increasing part-time work would alleviate labour shortages in no more than in a few industries and would not solve the problem as a whole. The committee and labour unions also saw problems in introducing part-time work as it might undervalue female labour in the future. However, they favoured starting experiments especially in the public sector provided there was willingness to engage in part-time work. (KM 1948:9.) However, part-time employment was practically non-existent in Finland as late as the early 1970s even as women’s share of the total labour force increased from 40 percent to 46 percent in 1975.

Statistics about part-time employment were not published as part of Finnish labour force surveys until 1975. The small increase in part-time employment in the 1970s was interpreted as having been achieved through public employment programmes, and therefore had its greatest impact on the public sector (*Työaika naisnäkökulmasta* 1982, 51). Part-time employment especially among women increased in Finland at the beginning of the 1980s, but soon started to decrease due to the favourable employment situation (Nätti 1983; Haataja 2007).

In Sweden part-time work was also discussed in the 1940s and 1950s. Part-time work was seen as a solution for women who wanted to combine family and work. Representatives of the women's movement and some trade unions were not, however, unconditionally in favour of this and expressed worries about the effects that a half-time wage might have for women's independence. Employers on the other hand anticipated organisational problems. These early discussions did not result in any policy prescribing specific measures that would have motivated employers to introduce part-time work.

The increase in women's part-time work in Sweden from the 1960s can be seen to be due to an interaction between different factors. With more and more women entering the labour market demand for working hours that could be adapted to child care needs grew at the same time as developments in certain sectors and trades resulted in more part-time positions being offered. The growing public service sector, which employed *many* of the women entering the labour market, turned out to be quite easily organised around part-time positions – it was in fact a good solution for caregiver work where the work load often is unevenly distributed during the day. The same mechanism is also true for some service jobs in the private sector such as the retail trade. Sweden was one of the countries where shop opening hours were deregulated very early, in 1972, and with the need to have staff on site for the longer opening hours, part-time positions became more and more common. Welfare reforms introduced during the 1970s also influenced the development of part-time work. Of particular note are individual taxation, the right to partial pension, and the right to parental leave, but also the employment conditions of part-time employees were improved gradually. (Waldemarson 1998; SOU 1999:27; Sundström 1999; Jonsson 2004; Hirdman 2008).

In Denmark women entered the labour market via part-time employment in the 1960s and Denmark was in that respect a leading OECD country. In the mid-1970s about 45–48 percent of women worked part-time compared with 5 percent of men. Starting around 1980 part-time employment started to decrease sharply among women and to rise slowly among men, and this development continued until the early 2000s. Among possible reasons for the shift from part-time to full-time employment, some have pointed to changes in unemployment benefit schemes, especially in supplementary benefits for part-timers, which made part-time work less attractive (Rasmussen et al. 2004, 646; Lind and Rasmussen 2008). During the last 10 years or so part-time employment has been increasing in Denmark. This may partly be explained by the legislation introduced by the Government with the aim of removing all obstacles in collective agreements to part-time employment.

In Norway part-time work was widespread prior to the period of significant increase in women's labour force participation in the 1970s. Part-time work expanded especially rapidly from 1960 to the

mid-1970s. The shift in employer demand for part-time work in this period was aligned with the preferences of the labour supply available at that time – married women. The use of part-time work continued to increase in Norway right up to 1983 when more than half (55 percent) of women worked part-time, then the highest proportion of part-time work in Scandinavia. The share of part-time work remains high (42 percent of Norwegian women work part-time), but unlike in many other European countries part-time work in Norway is not marginalised. Part-time workers (usually) have the same rights as full-time workers, as is the case nowadays in all Nordic countries. (NOU 2004:29; Ellingsæter 2009).

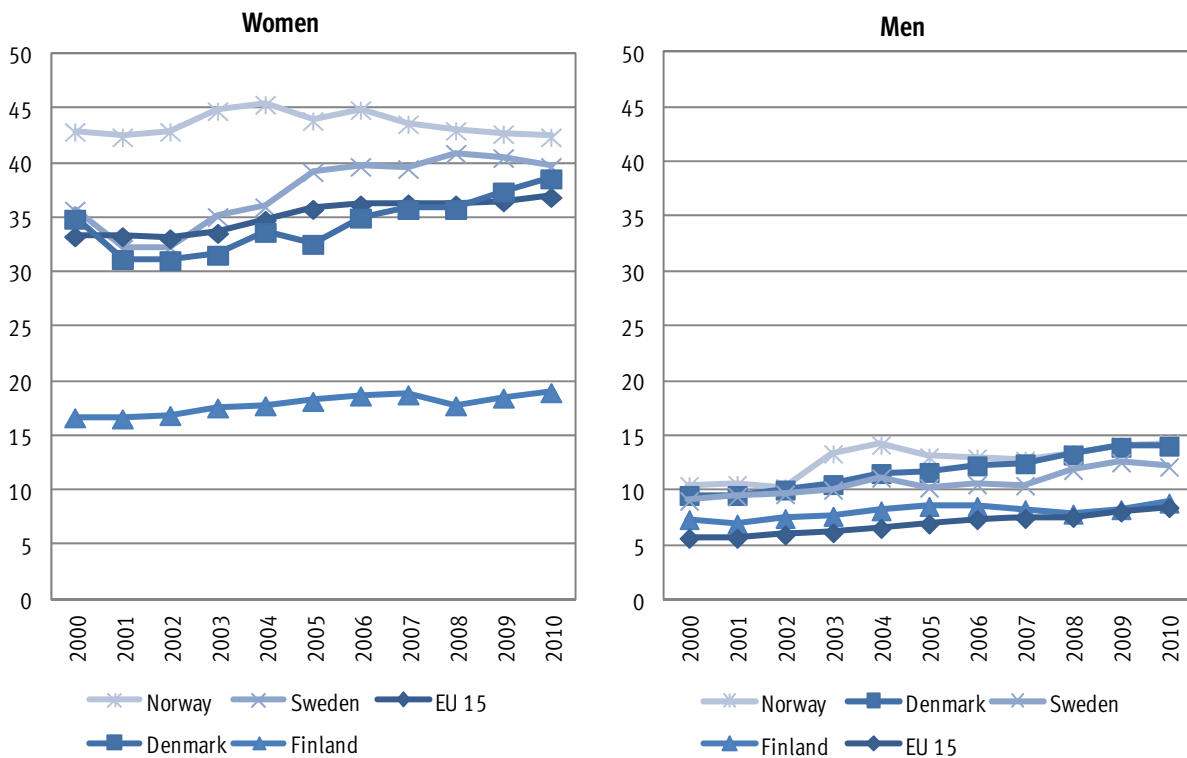
Diagram 3.1.1 shows the development of part-time employment in the Nordic countries. The harmonised time series start from the year 1995. Older time series refer to definitions no longer in use, as in the case of Sweden (where, before own opinion was adopted as the relevant criterion, part-time employment was defined as working less than 35 hours per week). The change in the definition decreased the shares of part-time employment in Sweden, as seen in the diagram (these time series are available from the EU's older employment publications). In Finland changes in the concept of part-time work were less visible.

As can be seen from Diagram 3.1.1 the share of part-time employment has been increasing in all Nordic countries during the 2000s from what it was in the 1990s. The highest shares of part-time employment are found in Norway, Sweden and Denmark, being about 25–28 percentage of total employment at the turn of 2010, and above the EU15 average. Finland lags behind other Nordic countries by about 15–20 percentage points.

Part-time work is a female dominated form of employment. While the gender gap has, over the long run, been decreasing, in the 2000s it increased again by 2–4 percentage points in other countries except Norway, where it has remained about the same. However, it is higher in Norway than in any other Nordic country (Diagram 3.1.2).

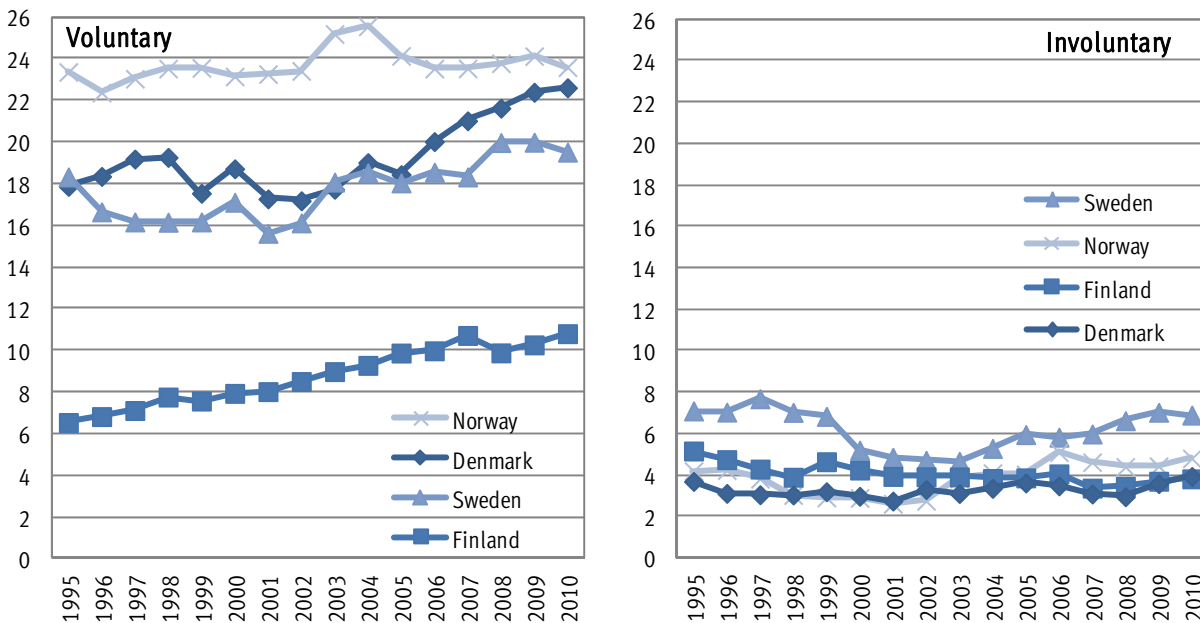
The increase in part-time employment is mainly due to the increase of voluntary part-time work. In Finland one in ten, and in the other Nordic countries, one in five or four of workers are part-timers on a voluntary basis. The difference between the Nordic countries in the proportions of involuntary part-time work is rather small, except for Sweden. In the 2000s the share of involuntary part-time employees in total employment increased in Sweden from about 5 to 7 percent, but stayed relatively stable (3–4 percent) in other Nordic countries. (Diagram 3.1.3.)

Diagram 3.1.2. Female and male part-time employment, % of total employment in 2000–2010 in the Nordic countries.



Source: Eurostat website: lfsa_eppga-Part-time employment as percentage of the total employment for a given sex and age group (%). Extracted on 29th May 2011.

Diagram 3.1.3. Voluntary and involuntary part-time employment, % of total employment 1995–2010, employed aged 15–74 years.

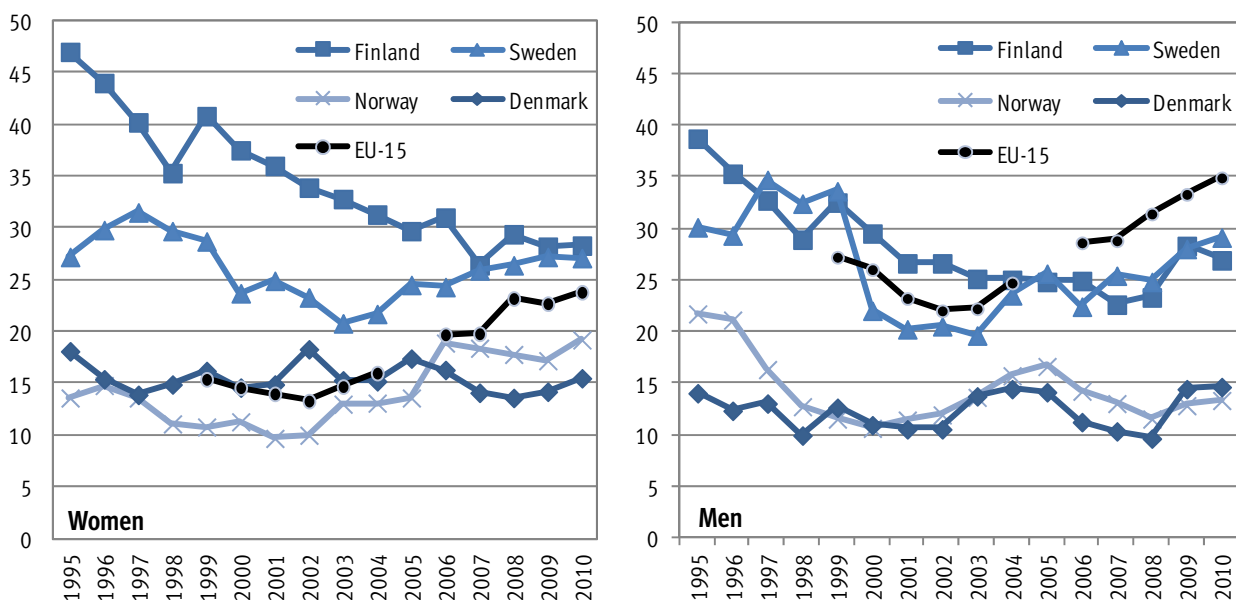


Source: Eurostat: DS-071587-table: lfsa_epgar - Main reason for part-time employment - Distributions for a given sex and age group (%). Extracted on 2nd June 2009 12:12:46 (updated 29-05-2011 18:14:58).

Part-time employment is a female dominated form of employment, both in voluntary and involuntary part-time work. About 65–75 percent of voluntary part-time employees and about 70–80 percent of involuntary part-time employees are women. The share of involuntary part-time work in total part-time employment has long been highest in Finland, but differences between Finland and Sweden almost disappeared towards the end of the first decade of the 2000s.

Nowadays about every fifth or fourth part-timer in Finland and Sweden works part-time on an involuntary basis compared with only 10–15 percent in Denmark and Norway. There remains a small gender gap in terms of the shares of involuntary and voluntary part-time work in total part-time work, so that involuntary part-time is somewhat more common among women than men, even though male involuntary part-time work has converged to about the same level as female involuntary part-time work in most Nordic countries at the turn of the 2010s. At the European level the share of involuntary part-time work in total part-time employment has been increasing both among women and men throughout the 2000s. However, the Nordic countries seem to differ from most EU15 countries, because in the other countries and in the EU on average, involuntary part-time work is clearly more common among men than women (Forssell and Jonsson 2005, 60; Diagram 3.1.4).

Diagram 3.1.4. The share of involuntary part-time work as a % of female and male part-time employment 1995–2010.



Source: Eurostat. lfsa_egpar-Main reason for part-time employment - Distributions for a given sex and age group (%), extracted on 20-04-2011 09:29:53 and updated 29-05-2011 17:33:38.

3.2 Involuntary part-time work and time-related underemployment, EU-LFS 2008

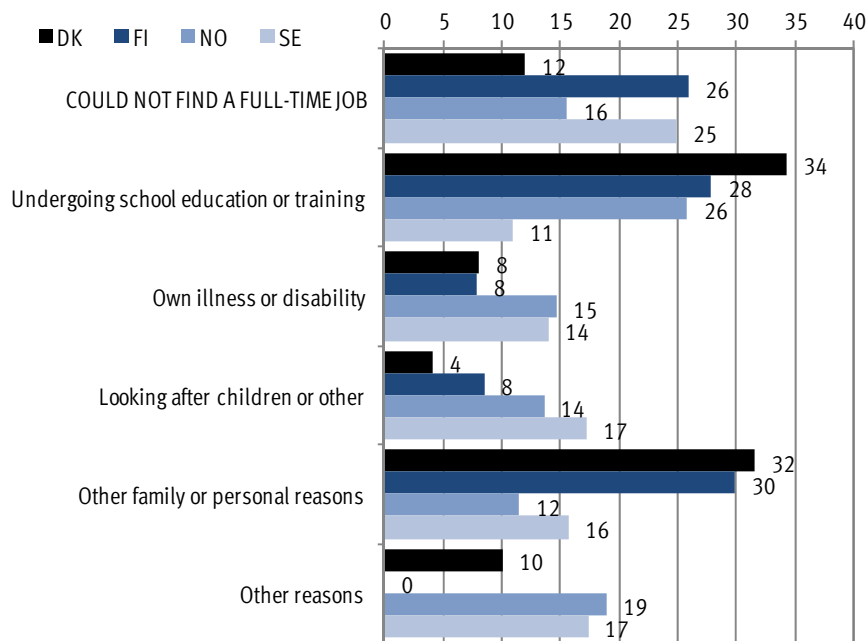
The main information in this chapter is based on a calculation made from micro level survey data, namely the European Labour Force Survey for the year 2008 (referred to in the following as EU-LFS 2008¹⁴). The aim of this chapter is to analyse involuntary part-time work and underemployment in more detail than what is possible on the basis of published statistics. We focus principally on the following questions: to what extent do involuntary part-time work and underemployment overlap, and to what extent do their characteristics differ when they do not overlap. In the European Labour Force Survey the definitions are harmonised as much as possible between the countries, but for example the classification of the available variables does not contain as much information as the original national LFSs (Eurostat 2008a ja b). These limitations concern especially the classification of the reasons for part-time work and some conditions for defining underemployment.

3.2.1 Reasons for part-time work

As seen in the previous chapter, the majority of part-time work is done on a voluntary basis in the Nordic countries, and the share of part-time work varies between the countries. There is also considerable variation between the Nordic countries in the main reasons for part-time work. If we look at the reasons for part-time work among all employed persons aged 15–64 years, we find that studying is the most common reason for part-time employment in Denmark (34%) and in Norway (26%), and the second most common reason in Finland (25%). In Sweden, on the other hand, studying is a not that common a reason for part-time work (11%).

In Sweden the most common reason (25%) to work part-time is the unavailability of full-time employment (involuntary part-time work). For Finns (26%) and Danes (12%) involuntary part-time work was the third most common reason, and for Norwegians, the second most common reason, though rather rare (16%). Looking after children or other relatives was a relatively common reason among Swedish (17%) and Norwegian (14%) part-time workers, but much rarer (less than 10%) among Danish and Finnish workers (Diagram 3.2.1). In Sweden and Norway there is a rather flexible parental leave with part-time options compared for instance to the Finnish rather inflexible parental leave scheme. However, after parental leave there are, in all these countries, other options to shorten working time until one's child has finished the first years of school (Nososco 2009; Duwander and Lammi-Taskula 2011).

¹⁴ All the tables and diagrams presented in this chapter are based on calculation from this survey data.

Diagram 3.2.1. Reason for part-time work in the Nordic countries, % of part-time employees (EU-LFS 2008).

Two of the above categories are rather unclear in terms of their ability to pinpoint the reason for part-time work. These are ‘Other family or personal reasons’ and ‘Other reasons’. The former is the most common reason for part-time work in Denmark (32%) and Finland (30%), while in Norway (19%) and Sweden (17%), the latter is more common than other family and personal reasons. Unfortunately the Eurostat Users’ Guide does not offer an explanation of these categories.

Both of these ‘other reasons’ groups may include persons under some more or less voluntary part-time scheme, such as part-time old-age pensioners or other schemes not visible in the categories. For example, in Finland the part-time old-age pension is rather popular and increases the employment rate of the elderly, even though the eligibility rules were tightened at the turn of the millennium (Haataja 2006; Salonen and Takala 2010). The Swedish part-time pension scheme was abolished in the early 2000s (Wadensjö 2006; Lachowska et al. 2008).

In Norway and Sweden (15-18%) it is more common than in Finland or Denmark (9–10%) to work part-time because of illness or disability. The labour market participation of partially disabled or sick people is achieved typically via partial sickness and disability benefits. This kind of participation is especially common in Sweden, and quite common in the rest of the Nordic countries except Finland. (Hytti 2006 and 2008; Hartman 2008; Palmer et al. 2008; Kausto et al. 2009.)

To sum up, the reasons for part-time work in the EU-LFS survey data are categorised and harmonised in a way that can be rather exact in some respects, e.g. in defining involuntary part-time work,

but less exact in defining some other categories that might give more information about the impact of welfare state programmes on part-time work separately from other personal and other reasons.

The second question is whether involuntary part-timers are also underemployed – and vice versa? In the next section we look in more detail at the labour market characteristics of both involuntary part-timers and the underemployed, and also investigate how these groups overlap when working part-time.

3.2.2 To what extent are involuntary part-timers and the time-related underemployed the same people?

In order to be classified as an involuntary part-time employee, one's reason for working part-time has to be expressed as lack of full-time work. There are no other prerequisites, such as looking (actively) for a full-time job or seeking additional working hours. The classification of part-time work is based on the respondent's own opinion in all countries except Norway (see chapter 2.2).

The definition of underemployment requires that the person 1) wishes to work more hours than she/he actually does, 2) is looking for more hours or a new job and 3) is available to work more hours or to take another job immediately (within two weeks). All these requirements are present in the EU-LFS 2008 survey data. The working time of underemployed persons can be as long or longer than normal full-time hours and consist of many low-paid hours or of two or more jobs. Because our interest is in part-time work we will consider only those underemployed whom we can categorise as time-related underemployed.

Because there is no single definition pertaining to working time in time related underemployment, we have to choose some criteria even though any criterion can be criticised more or less arbitrarily. We have chosen the definition of time-related underemployment used by Ek and Holmlund when they defined 'part-time unemployment' in Sweden (2011, 142–143). The characterisation 'part-time unemployed' applies to persons who are both underemployed and who work less than 35 hours per week. This definition of working time is longer than that used by the ILO or the OECD in their labour force statistics on time-related underemployment (see chapter 2.3). The definition is one hour shorter than the definition of part-time work used in Norway but the same as used earlier in Swedish labour force surveys.

We could also have used another criterion and chosen only those underemployed who define themselves as part-timers to represent the time related underemployed population. Compared with the

35-hour working time criterion the number of time-related underemployed would have, however, decreased the number of underemployed persons in Denmark and in Finland by several thousand and increased their number in Sweden. For Norway that criterion was not feasible to use at all (Annex table 1).

We first analyse involuntary part-timers, look at how large a share of them are working more than 35 hours, and examine certain other labour market characteristics (Table 3.2.1). More than 90% of involuntary part-timers work less than 35 hours per week on average, except in Sweden, where the percentage is 88. In Sweden 12% of involuntary part-timers work at least 35 hours per week. In Finland and in Denmark 8–9% of involuntary part-timers work very long part-time hours, while in Norway only 2.5 percent do.

Involuntary part-time work is a more typical form of employment for women than for men. Women's share of involuntary part-time employment was highest in Norway (83%) and lowest in Finland (75%) in 2008.

Table 3.2.1. Summary information about involuntary part-timers (EU-LFS 2008).

	Nordic	Denmark	Finland	Norway	Sweden
Total involuntary part-timers, 1 000	530	83	88	85	274
% of all employed	4.3	2.9	3.5	3.4	6.0
% working 1–34 hours	90.9	91.2	92.4	97.5	88.3
Other characteristics, % of involuntary part-timers	Nordic	Denmark	Finland	Norway	Sweden
Women	79.0	78.3	74.8	83.4	79.0
Self-employed	5.0	2.8	12.9	2.6	3.9
Two or more jobs	13.9	20.1	10.6	14.4	13.0
Temporary work contract	31.9	20.5	38.8	20.5	36.7
Also underemployed	43.0	30.0	47.6	62.0	39.6
Not underemployed	57.0	70.0	52.4	38.0	60.4

Involuntary part-time employees are mainly wage earners. In Finland involuntary part-timers are more commonly (13%) self-employed than in the other comparison countries (3–4%). It is rather common for involuntary part-timers to have two or more jobs. This phenomenon is most common in Denmark where every fifth involuntary part-timer has at least two jobs. The other extreme is Finland where only one in ten involuntary part-timers holds at least two jobs. It is also quite common for involuntary workers to have fixed-term contracts. In Finland and Sweden every third, and in Denmark and Norway every fifth involuntary part-time employee had a fixed-term work contract in 2008.

All involuntary part-time employees are not underemployed, i.e., seeking more hours or looking actively for a job and available to accept job offers. In real working life, these are roughly the criteria that must be fulfilled for a part-time employee to qualify for partial unemployment benefits (chapter 4.1).

Of involuntary part-timers in the Nordic countries, less than half, on average, could be classified as underemployed in 2008. However, variation between the countries is substantial. In Norway two-thirds of involuntary part-timers and in Finland almost a half (48%) are also underemployed. These shares are much lower in Sweden and especially in Denmark (about 30 percent).

Persons in time-related underemployment, i.e., underemployed working less than 35 hours per week, make up on average two-thirds of all underemployed persons in the Nordic countries. The share of all underemployed in total employment varies between 5–7 percent, but the share of time-related underemployment ranges from as low as 3 percent in Denmark to nearly 5 percent in Sweden. While there are differences between underemployed persons in regard to time-related underemployment, they are not large, except that the time-related underemployed are much more likely than all underemployed to be women (Annex table 1, Table 3.2.2).

Table 3.2.2. Summary information about total and time-related underemployment (EU-LFS 2008), see also Annex table 1^a.

Underemployed:	Nordic	Denmark	Finland	Norway	Sweden
Total underemployment, 1 000	720	130	173	137	280
% of all employed	5.8	4.6	6.8	5.5	6.1
Part-time employees, 1 000	450	79	69	89	214
% of the underemployed	62.5	60.4	39.9	64.6	76.3
Time-related underemployment, 1 000	467	85	83	88	210
% of all employed	3.7	3.0	3.3	3.5	4.6
% of the underemployed	64.8	65.3	48.2	64.4	75.0
Women, %	70.6	64.9	69.4	73.6	72.2
Temporary work contract, %	38.6	18.6	38.2	22.6	53.6
Part-time employees, %	93.5	92.0	79.9	98.8	97.3
Self-employed, %	6.4	5.5	11.8	4.1	5.6
At least 2 jobs, %	10.6	10.6	8.7	13.0	10.3
Also an involuntary part-timer, %	48.8	29.3	50.3	59.6	51.6

^a Annex table 1 presents average data for all underemployed, the time related unemployed and involuntary part-timers in 2008. Applying the working time cut-off limit for time-related underemployment reduces the shares of the underemployed significantly. The biggest reduction occurs in Finland where more than a half (52%) of the underemployed work more than 35 hours per week, and about a quarter (27%) as many as 40 hours or more. These shares differ from those seen in the other Nordic countries, where the majority of all underemployed work less than 35 hours, varying between 75% in Sweden to 64–65% in Denmark and Norway.

There are also clear differences in the profiles of the underemployed between the Nordic countries. Self-employment among all underemployed persons is most common in Finland (43%) and Denmark (39%), but among persons in time-related underemployment only six percent, on average, are self-employed. Self-employment is, however, more common in Finland also among the time-related underemployed (13%). On the other hand, having at least two jobs is less common in Finland (9%) than in the other Nordic countries (10–13%). Except in Denmark, being underemployed also means a greater likelihood to be involuntarily part-time employed (Annex table 1, Table 3.2.2).

The share of temporary work contracts varies greatly between the Nordic countries. Denmark has the lowest share (19%) of time-related underemployed in temporary work contracts, Sweden the highest (54%).

As a summary, the overlap of the two groups, involuntary part-time employees and those in time-related underemployment, is presented in Table 3.2.3. Each account for about 2–4 percent of total employment in the Nordic countries. Yet if we add them together their share of total employment increases to 3–5%.

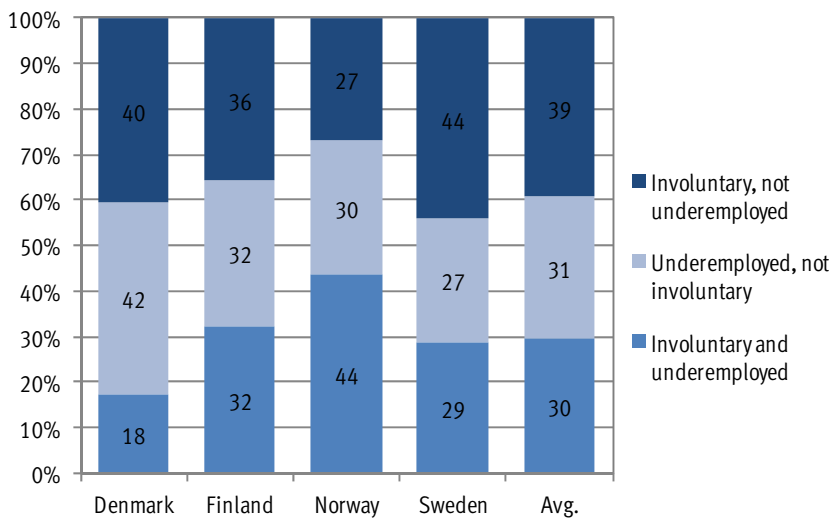
When we add together involuntary part-time employees and those in time-related underemployment, we get different variations on the combinations between the Nordic countries (Diagram 3.2.2). On average in the Nordic countries, and in Finland, one third of the combined group are involuntary part-timers only, one third are time-related underemployed only, and the final third consists of persons who are both time-related underemployed and involuntary part-timers.

The underemployed and involuntary part-timers are most likely in Norway (44%) and least likely in Denmark (18%) to belong to the same group. The time-related underemployed, who are not involuntary part-timers, form the biggest group in Denmark (42%) and the smallest group in Sweden (27%). The shares of involuntary part-timers who are not underemployed are highest in Denmark and Sweden (40–44%).

Table 3.2.3. The incidence of time-related underemployment and involuntary part-time work and their relation to each other in the Nordic countries (EU-LFS 2008).

Type of working time, 1 000	Denmark	Finland	Norway	Sweden	Total
Time-related underemployed	85	84	88	209	465
Involuntary part-timers	84	89	85	275	533
Either underemployed or involuntary	145	131	121	377	774
Percentage of total employment, %	Denmark	Finland	Norway	Sweden	Total
Only time-related underemployed	2.1	2.1	2.5	3.0	2.5
Only involuntary part-timers	2.1	2.2	2.4	4.0	2.9
Either underemployed or involuntary	3.5	3.3	3.4	5.5	4.2

Diagram 3.2.2. The overlap of the time-related underemployed and involuntary part-time employees in the Nordic countries, % (EU-LFS 2008).



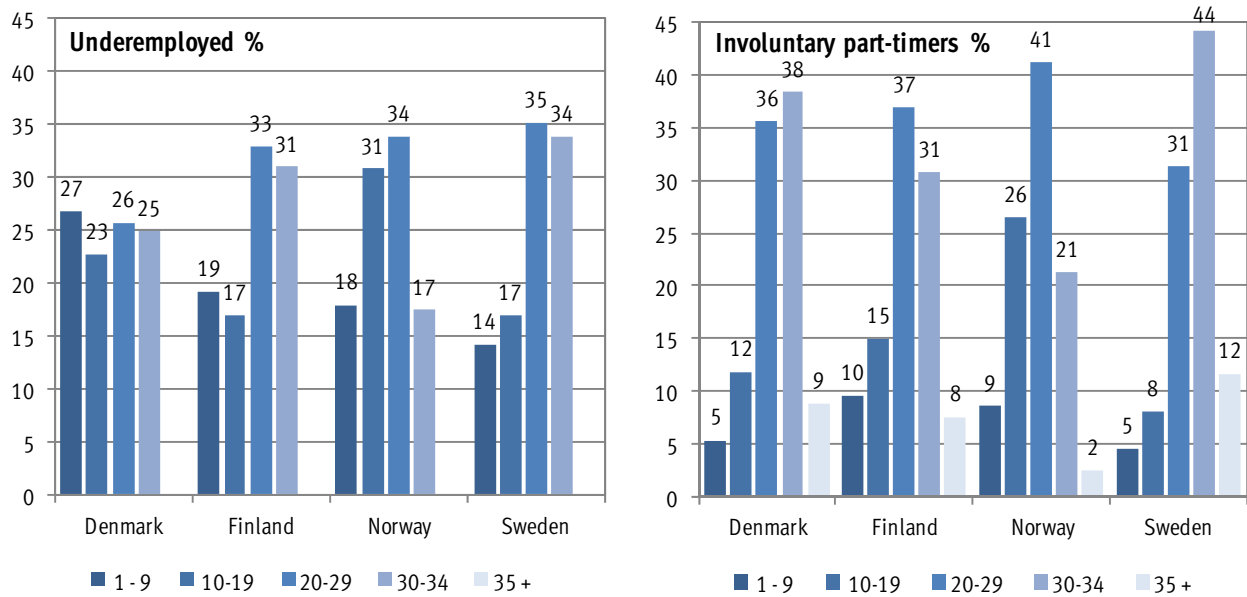
The time-related underemployed and involuntary part-time employees represent, to a different extent and in different ways, our ‘overall concepts’ of partial unemployment and part-time unemployment. The terminology and informational aims of labour force surveys are difficult to combine with the requirements or eligibility rules for partial (part-time) unemployment benefit schemes, even though the data on register based unemployment benefits were incorporated into the survey data (Haataja and Korkeamäki 2007; Ek and Holmlund 2011).

In any case, the involuntary part-timers and time-related underemployed included in the EU-LFSs correspond most closely to those partially unemployed persons who might be entitled to partial (part-time) employment benefits (see chapter 4.1). Because involuntary part-timers and time-related underemployed only overlap partially, it is interesting to investigate whether there also other differences between these groups than those found above relating to their labour market conditions. We start by comparing working times and then go on to other characteristics.

3.2.3 Usual and preferred working time

The usual working time patterns differ both between involuntary part-time employees and persons in time-related underemployment and between the countries compared. The first difference between the two groups is due to definition; the time-related underemployed were defined as working less than 35 hours per week. Among involuntary part-timers there are persons who work more hours, with a share ranging from 2% in Norway to 12% in Sweden (Diagram 3.2.3).

Diagram 3.2.3. Shares of time-related underemployed persons and involuntary part-timers according to their usual weekly working hours, % (EU-LFS 2008).



The second difference relates to the usual working time: in all the countries the shares of time-related underemployed persons working very short hours, less than 10 hours or 10–19 hours per week, are much bigger than the corresponding shares among involuntary part-timers. The share of time-related underemployed who work less than 20 hours per week varies from 50% in Denmark to 31% in Sweden. Among involuntary part-time employees such a short working time is rarer, ranging from 13% in Sweden to 35% in Norway. The high share seen in Norway is due to the fact that the share of involuntary part-timers working 10–19 hours is larger than in the other Nordic countries.

There are three working time patterns among time-related underemployed persons: In Finland and in Sweden the most common type of usual working time is long part-time work, 20–29 or 30–34 hours per week, while in Norway the dominant forms are rather short and rather long working times, 10–19 and 20–29 hours per week, respectively, and finally in Denmark all categories have about the same share of persons.

When we compare working time patterns of involuntary part-time employees, we find similarities between Danish and Finnish weekly hours. In these countries, the share of employees working short hours part-time is small and the share of those working 20–34 hours large. In Sweden the biggest share of involuntary part-timers work is as many as 30–34 part-time hours. In Norway the most common working time for involuntary part-timers is 20–29 hours.

On average, involuntary part-timers and time-related underemployed prefer to work 33 hours per week, which, again on average, means 12–14 more hours for involuntary part-timers and 7–10 more hours for time-related underemployed, depending on gender (Table 3.2.4). On the other hand, persons in time-related underemployment work on average less than involuntary part-timers in all countries studied.

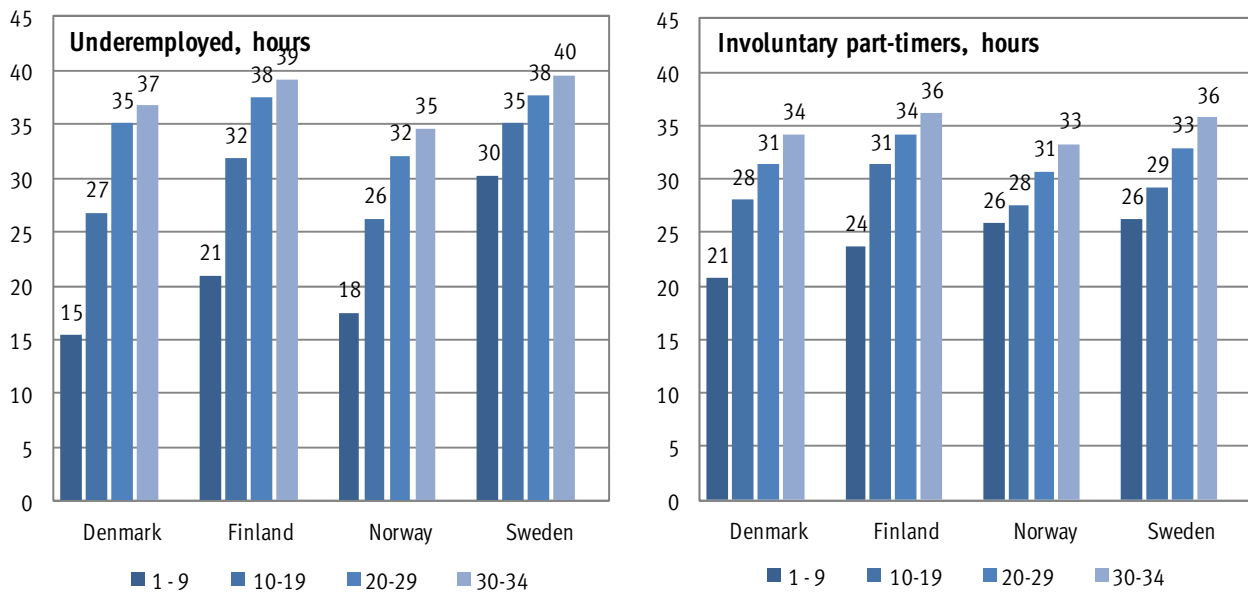
Table 3.2.4. Usual and preferred increase in working hours and preferred working hours on average per week by gender, time-related underemployed and involuntary part-time employees.

Hours per week	Average	Denmark	Finland	Norway	Sweden
Time-related underemployed					
Men, usual hours	19	16	20	18	20
Women, usual hours	21	19	20	20	22
Men, preferred hours	33	28	35	26	37
Women, preferred hours	33	29	33	29	37
Men, preferred increase in hours	14	12	15	8	18
Women, preferred increase in hours	12	9	13	9	14
Involuntary part-timers					
Men, usual hours	23	22	23	21	24
Women, usual hours	26	27	23	22	27
Men, preferred hours	33	31	35	30	34
Women, preferred hours	33	32	33	30	34
Men, preferred increase in hours	10	9	12	9	10
Women, preferred increase in hours	7	5	10	8	7

The country level outcomes differ. In Denmark and Norway the time-related underemployed prefer on average shorter weekly working hours (less than 30 hours) than involuntary part-timers (30 hours or slightly more). This is mainly due to the effect of those time-related underemployed whose normal working hours are less than 10 hours per week: they would prefer to work only 15–18 hours per week (Diagram 3.2.4). In Finland involuntary part-timers and time-related underemployed prefer to work equally as much on average, men 35 and women 30 hours. Contrary to other Nordic countries time-related underemployed persons in Sweden prefer to work, on average, more (37 hours) than involuntary part-timers (34 hours).

The preferred working time has an interesting connection with the actual usual working time (Diagram 3.2.4). Those who work less prefer to work much less than full time. Those who work long hours part-time prefer longer working hours, though differences exist between involuntary part-time employees and the time-related underemployed. The time-related underemployed with actual working times of 20–29 or more usually prefer a working time approaching full-time work. Norway is an exception in this respect, because average preferred working hours among the underemployed is 35 hours. Involuntary part-timers, unexpectedly, seem to prefer to work, on average, only long part-time hours, although they are defined as involuntary part-timers because they have not found full-time work.

Diagram 3.2.4. Preferred average weekly working time according to the usual weekly working time of involuntary part-timers and time-related underemployed, hours per week.



3.2.4 Characteristics of involuntary part-timers and the time-related underemployed

This chapter investigates the gender division, age structure, education level and industrial sector of involuntary part-time employees and the time-related underemployed. The results are presented together with the corresponding data for those in total employment in Diagrams 3.2.5–3.2.8 and Annex tables 3–5.

Involuntary part-time employees and those in time-related underemployment are more often women than men. The gender gap is wider among involuntary part-timers than among the underemployed in all of the countries. The amount by which women outnumber men among involuntary part-timers varies between 44 percentage points in Finland and 65 percentage points in Norway. Among the time-related underemployed the gender gap varies from 30 percentage points in Denmark to 47 percentage points in Norway. An inverse gender gap is seen in total employment, with men outnumbering women by an amount ranging from four percentage points in Finland to six percentage points in Denmark.

Diagram 3.2.5. Women’s share of underemployed persons, involuntary part-time employees and total employment, %.

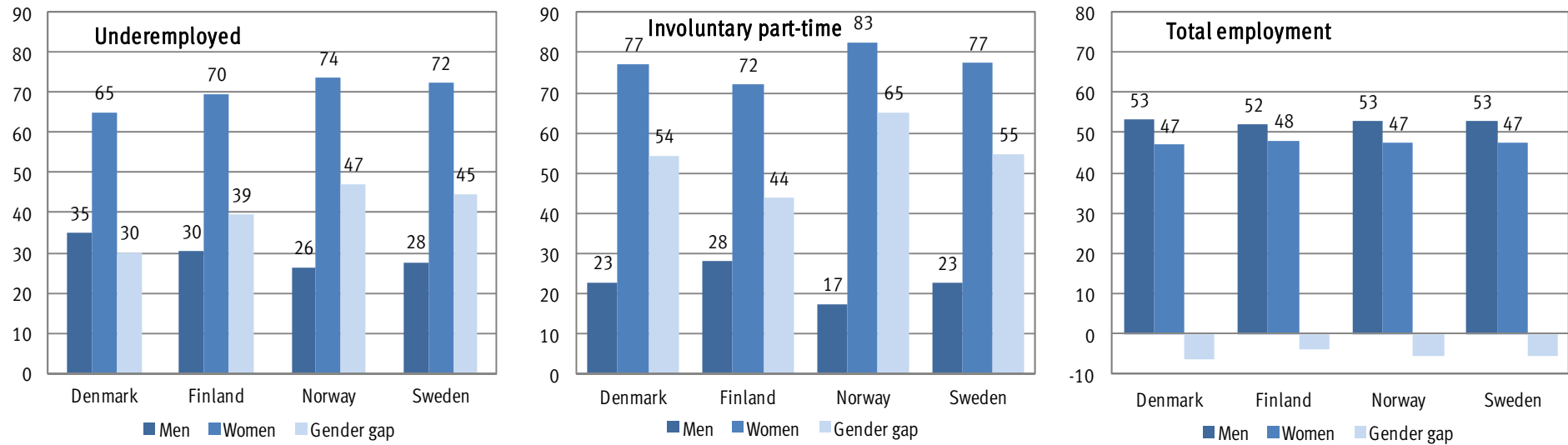


Diagram 3.2.6. Distribution of time-related underemployed persons, involuntary part-time employees and total employment by age, %.

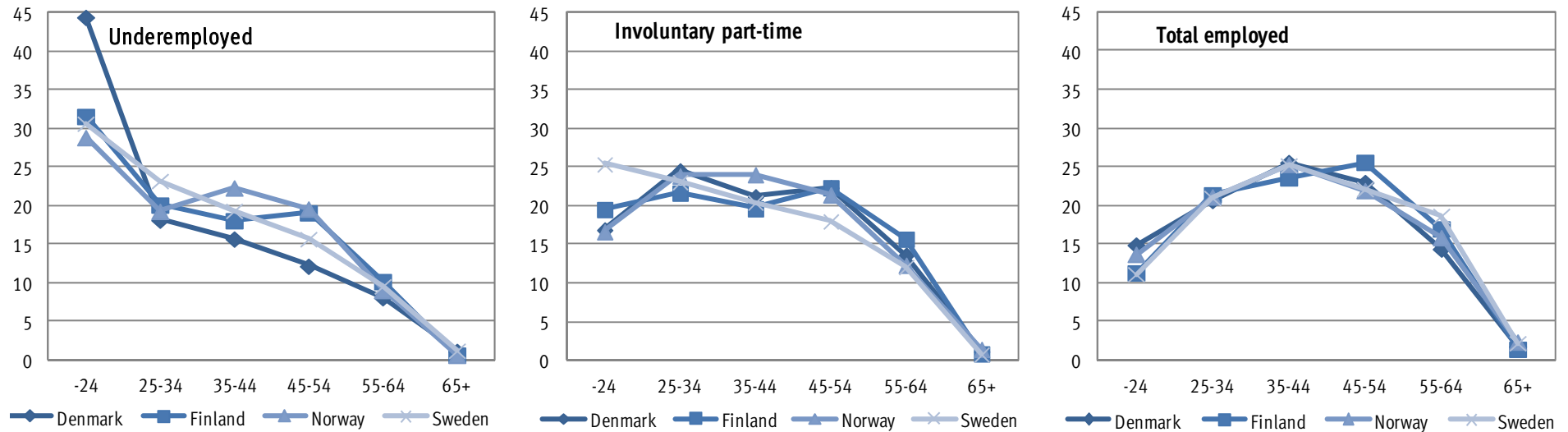


Diagram 3.2.7. Distribution of time-related underemployed persons, involuntary part-time employees and total employment by education level, %. (See also Annex table 4). Education: ISCED1-2=low, 3-4= medium, 5-6 high level.

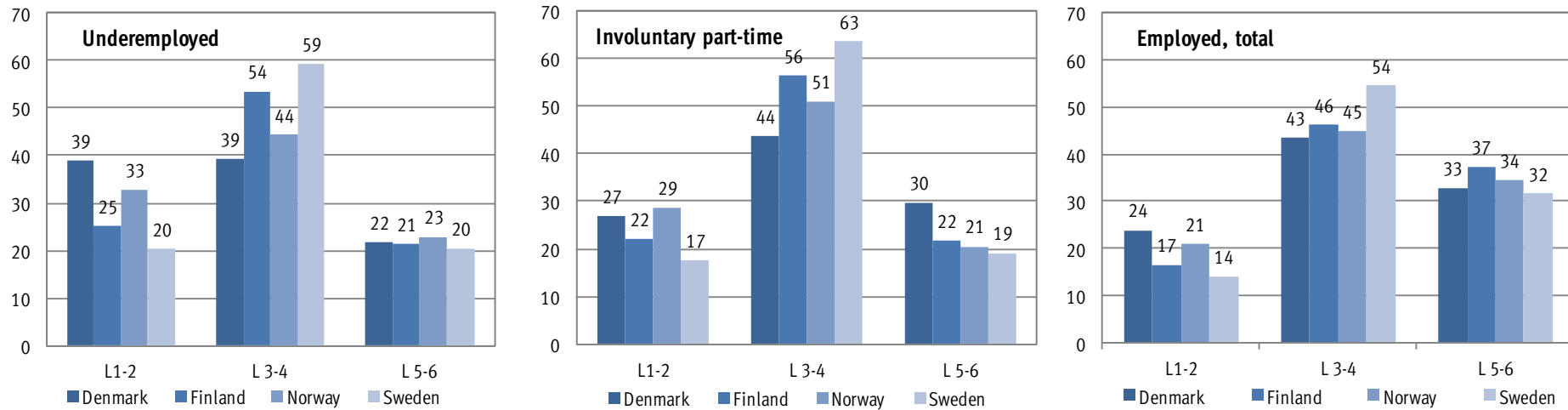
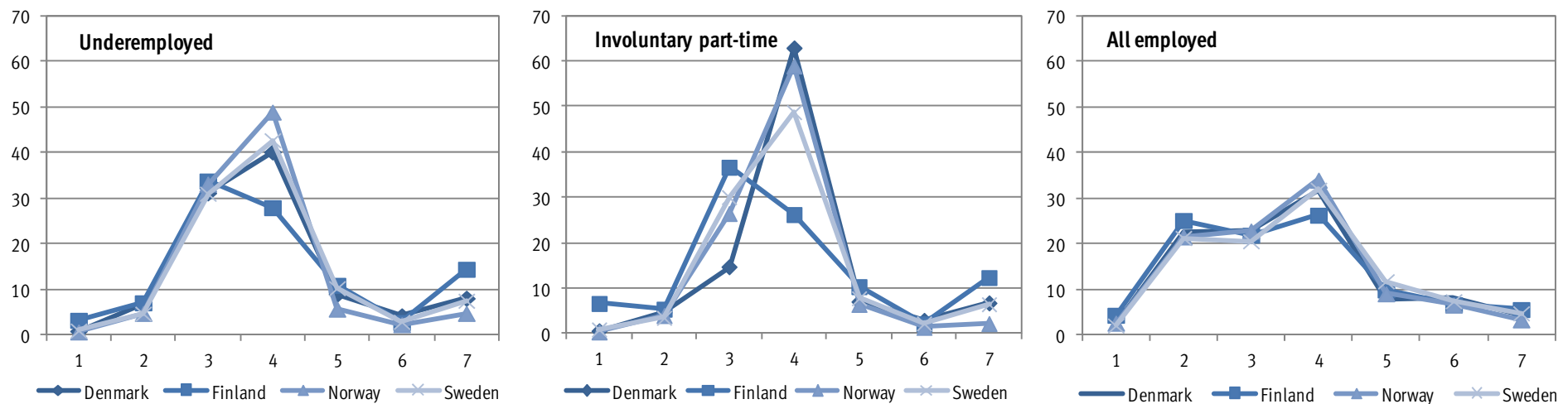


Diagram 3.2.8. Distribution of time-related underemployed persons, involuntary part-timers and all employed persons by sector and country, %.^a



^a Explanations: 1 Agriculture, forestry and fishing; 2 Manufacturing, construction; 3 Trade, transportation, food service; 4 Public admin., educ., health, social work; 5 Professional, scientific, administration; 6 Other summarized sectors, such as information and communication, financial and real estate activities; 7 Other services.

EU-LFS 2008 summarises the age groups according to anonymisation criteria, but the grouping produces the same age groups we are interested in¹⁵. The biggest age group among the time-related underemployed consists of young people aged less than 25 years. In Denmark this age group accounts for almost a half (45%) and in other Nordic countries for about 30%. The share of the time-related underemployed decreases almost linearly in older age groups in Denmark and Sweden, but stays about the same among persons aged 25–54 years in Finland and Norway (about 20% in each 10-year age group).

The distribution of involuntary part-time employees among involuntary part-timers is somewhat different from that among the time-related underemployed. The majority of involuntary part-timers are concentrated in the age groups between 25–54 (20–25% in each 10-year age groups) in all countries except Sweden. In Sweden the distribution of involuntary part-timers resembles more the age distribution of time-related part-timers. Hence, the older the age group is, the fewer involuntary part-timers there are.

The education level¹⁶ of involuntary part-time employees and the underemployed is as a rule more often lower than the education level of all the employed, and the time-related underemployed are typically less educated than involuntary part-timers. The education level is related to age structure, though in different ways in different Nordic countries. For example in Denmark, where 45 percent of the time-related underemployed are less than 25 years of age, the share of underemployed with a low education level is almost 40 percent.

The share of those with a high level of education is about 10 percentage points lower among the time-related underemployed and involuntary part-timers than among all employed persons. Danish involuntary part-timers, however, differ from those in the other Nordic countries. The share of involuntary part-timers with a high level of education is about the same (30%) as in the total Danish workforce (33%).

The distributions of all employees according to industrial sector¹⁷ are rather similar in the three Nordic countries. Finland differs to some degree from the common pattern, having slightly more employees in manufacturing and fewer in public administration and services than the other Nordic countries. Finland differs also in the way in which the time-related underemployed and involuntary

15 Ages 17 to 22 corresponds to age group '15–24', ages 27 to 32 corresponds to age group '25–34', and so on. The oldest ages are 67 and 72 and the groups corresponding to age group '65 and more'.

16 Education level is defined in the EU-LFS according to ISCED classification. This classification is not very comparable to classifications with a greater level of detail than the three levels used here.

17 1 Agriculture, forestry and fishing; 2 Manufacturing, construction; 3 Trade, transportation, food service; 4 Public admin., educ., health, social work; 5 Professional, scientific, administration; 6 Other summarized sectors; 7 Other services

part-timers are distributed according to industrial sector. In Finland both time-related underemployed persons and involuntary part-timers are concentrated in the private service sector (trade, transportation, hotels and restaurants) whereas in the other Nordic countries they are more likely to be employed in the public sector.

To sum up, characteristics of time-related underemployed persons and involuntary part-timers differ to some extent, also between the individual Nordic countries.

3.2.5 Statistical analysis of the determinants of time-related underemployment and involuntary part-time employment

Descriptions of different background variables behind underemployment and involuntary part-time work are useful, but they do not give us information on the relative importance of each background variable for the probability to work as an underemployed or involuntary part-time worker in the Nordic countries. In order to do this a statistical model is required.

In what follows we investigate the determinants of time-related underemployment and involuntary part-time employment by estimating probit models of the probability that person is in time-related underemployment or in involuntary part-time employment. In the estimation we control for a number of both personal characteristics, such as gender, age, education and marital status, and job related characteristics, such as industry, size of firm, self-employment status and the temporary nature of the employment contract. We estimate these models for all countries together and then separately for Denmark, Finland, Norway and Sweden. As we use job characteristics as explanatory variables in our models we estimate the models for all employed persons only.

Table 3.2.5 presents the results of the estimated probit models for time-related underemployment. Rather than reporting the estimated coefficients we report the calculated marginal effects from these models. The results suggest that the probability of time-related underemployment is 2.1–3.6 percent higher for women than for men in the four Nordic countries. Interestingly, we also find differences by nationality: immigrants experience more underemployment compared to natives in all the Nordic countries. However, for Finland the effect is not statistically significant. Comparing age groups, we find the greatest probability of underemployment among the youngest age group and the smallest probability in the oldest age group in all of the Nordic countries. Being married also reduces the probability of being underemployed in all other countries except for Sweden. Expectedly, low education increases the probability of underemployment. This group has a 2.2–3.4 per cent higher probability of being time-related underemployed compared to those with tertiary education.

Table 3.2.5. Probit estimates of the probability of time-related underemployment.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Female	0.0327*** (0.009)	0.0261*** (0.0017)	0.0233*** (0.0036)	0.0346*** (0.0037)	0.0351*** (0.0011)
Native	-0.0239*** (0.003)	-0.0330** (0.0057)	-0.0233 (0.0149)	-0.0210* (0.0107)	-0.0191*** (0.0036)
Age:					
27-56	-0.0263*** (0.0017)	-0.0536*** (0.045)	-0.0189*** (0.0055)	-0.0120* (0.0062)	-0.0159*** (0.0021)
57-66	-0.0396*** (0.0019)	-0.0617*** (0.0046)	-0.0260*** (0.0063)	-0.0270*** (0.0071)	-0.0315*** (0.0023)
Education:					
Low	0.0206*** (0.0013)	0.0047** (0.0023)	0.0204*** (0.0051)	0.0335*** (0.0053)	0.0259*** (0.0019)
Secondary	0.0173*** (0.0010)	0.0017 (0.0020)	0.0177*** (0.0040)	0.0261*** (0.0045)	0.0225*** (0.0014)
Married	-0.007*** (0.0009)	-0.0152*** (0.0020)	-0.0106*** (0.0033)	-0.0088** (0.0039)	-0.0017 (0.0012)
Temporary	0.0755*** (0.002)	0.0390*** (0.0037)	0.0491*** (0.0060)	0.0571*** (0.0086)	0.0947*** (0.0026)
Self-employed	-0.0318*** (0.0015)	-0.0304*** (0.0028)	-0.0250*** (0.0050)	-0.0279*** (0.0089)	-0.0335*** (0.0020)
Firm size:					
10-49	-0.0115*** (0.0016)	-0.0072** (0.0032)	-0.0233*** (0.0048)	-0.0075 (0.0058)	-0.0128*** (0.0020)
50-200	-0.0148*** (0.0014)	-0.0112*** (0.0028)	-0.0184*** (0.0045)	-0.0032 (0.0057)	-0.0171*** (0.0018)
over 200	-0.0250*** (0.0012)	-0.0228*** (0.0024)	-0.0291*** (0.0041)	-0.0106** (0.0050)	-0.0275*** (0.0016)
Industry:					-
Agriculture	0.0099*** (0.0041)	-0.0052 (0.0080)	0.0251** (0.0107)	-0.0129 (0.0161)	0.0150*** (0.0056)
Construction	-0.0237*** (0.0034)	-0.0302*** (0.0067)	-0.0107 (0.0020)	-0.0322** (0.0013)	-0.0209*** (0.0045)
Transport	0.0286*** (0.0025)	0.0173*** (0.0051)	0.0298*** (0.0082)	0.0206** (0.0097)	0.0320*** (0.0032)
Trade	0.0378*** (0.0018)	0.0210*** (0.0035)	0.0410*** (0.0066)	0.0241*** (0.0073)	0.0430*** (0.0025)
Hotels and restaurants	0.0483*** (0.0024)	0.00457*** (0.0047)	0.0315*** (0.0082)	0.0431*** (0.0099)	0.0487*** (0.0032)
Business services	0.0108*** (0.0020)	0.0131*** (0.0037)	0.0165** (0.0069)	0.0048 (0.0080)	0.0091*** (0.0026)
Public administration	0.0035 (0.0028)	0.0037 (0.0051)	-0.0155 (0.0141)	-0.0115 (0.0119)	0.0052 (0.0036)
Education	0.0400*** (0.0020)	0.0359*** (0.0039)	0.0467*** (0.0075)	0.0353*** (0.0083)	0.0395*** (0.0026)
Health and social work	0.0432*** (0.0018)	0.0393*** (0.0033)	0.0138** (0.0069)	0.0406*** (0.0068)	0.0459*** (0.0024)
Other	0.0361*** (0.0024)	0.0360*** (0.0043)	0.0390*** (0.0077)	0.0302*** (0.0109)	0.0336*** (0.0031)
Number of observations	206,760	51,859	12,865	12,765	129,271
Log likelihood	-31745.191	-7463.4899	-1603.0967	-2052.51	-20320.326

By industry, the probability of time-related underemployment is greatest in the private service sector (such as in trade and in hotels and restaurants) but also in education and in health and social work, which in the Nordic countries are predominantly public sector services. There are also some differences in this by country. Common to all four Nordic countries, working in a temporary job seems to increase the risk of underemployment. In addition, wage and salary earners face a higher risk of underemployment compared to the self-employed. Of the job-related factors the size of the firm also seems to matter: the probability of time-related underemployment is highest in small firms in all other countries except for Norway where it does not play a role.

Diagram 3.2.9 presents the predicted probabilities of time-related underemployment calculated on the basis of the probit estimation results by gender and age while holding other covariates at their means.

Diagram 3.2.9. Predicted probability of time-related underemployment by gender and age in the Nordic countries, % (Data: EU-LFS 2008) (holding all other covariates at their means).

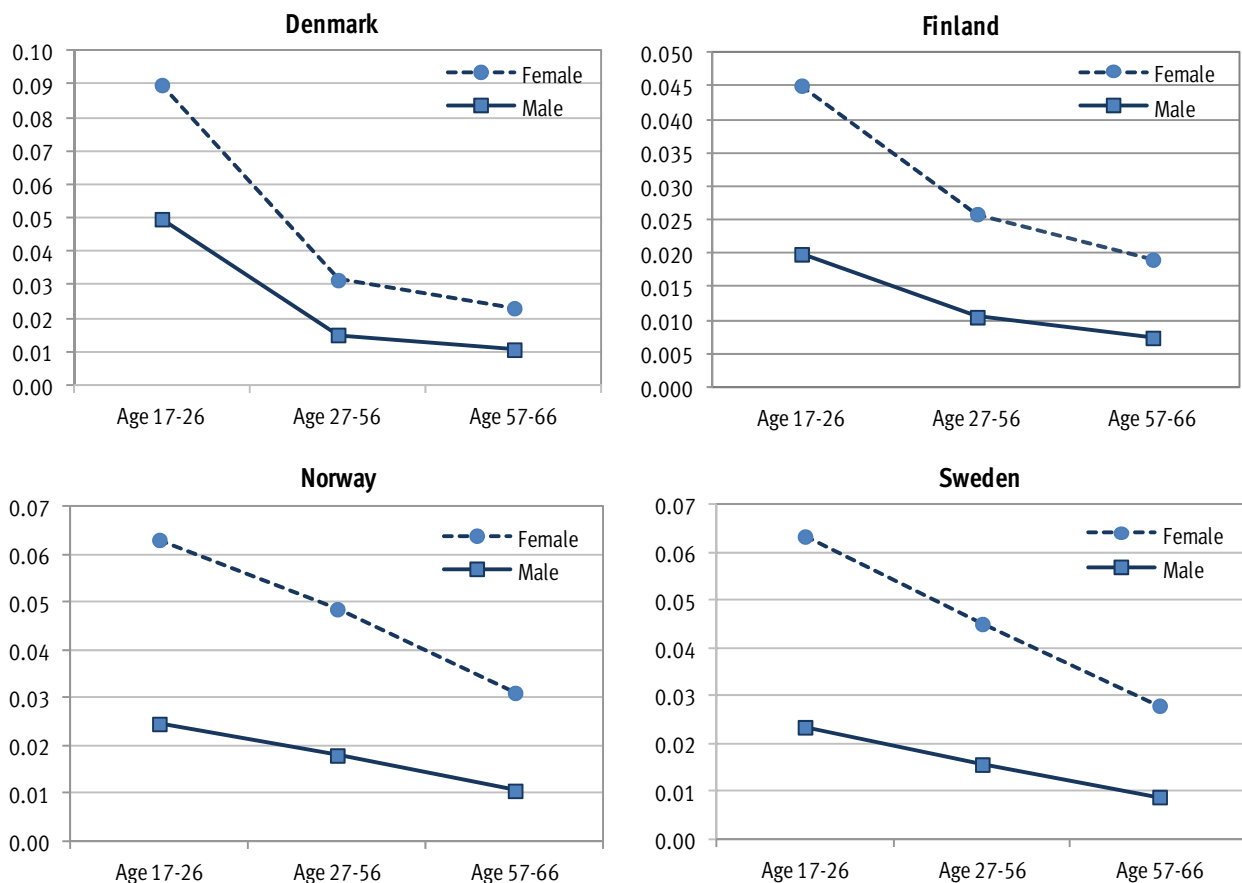


Table 3.2.6 presents the corresponding results of the estimated probit models for involuntary part-time employment. There are some similarities in these results to the results for time-related underemployment, which is not surprising. According to the results women face a higher risk of involuntary part-time employment than men (2.6–5.3 per cent higher) in the four Nordic countries.

Table 3.2.6. Probit estimates of the probability of involuntary part-time employment.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Female	0.0444*** (0.0011)	0.0258** (0.0019)	0.0285*** (0.036)	0.0451*** (0.0042)	0.0530*** (0.0015)
Native	-0.0312*** (0.0031)	-0.0434*** (0.006)	-0.0270* (0.0149)	-0.0198** (0.0099)	-0.0285*** (0.0041)
Age:					
27-56	-0.0089*** (0.0018)	0.0065*** (0.0025)	0.0099*** (0.0037)	0.0091*** (0.0044)	-0.0241*** (0.0024)
57-66	-0.017*** (0.0018)	0.0062** (0.0028)	0.0115** (0.005)	0.0035*** (0.0056)	-0.0377*** (0.0027)
Education:					
Low	0.0247*** (0.0014)	0.0119*** (0.0021)	0.0190*** (0.005)	0.0369*** (0.0049)	0.0371*** (0.0021)
Secondary	0.0310*** (0.0011)	0.0113*** (0.0018)	0.0204*** (0.0038)	0.0333*** (0.0042)	0.0374*** (0.0015)
Married	-0.0068*** (0.0009)	-0.0085*** (0.0018)	-0.0109*** (0.0032)	-0.0088** (0.0034)	-0.0026** (0.0013)
Temporary	0.0587*** (0.0018)	0.0485*** (0.0040)	0.0632*** (0.0068)	0.0381*** (0.0075)	0.0555*** (0.0023)
Self-employed	-0.0411*** (0.0012)	-0.0303*** (0.0017)	-0.0229*** (0.0047)	-0.0291** (0.0055)	-0.0963*** (0.0075)
Firm size:					
10-49	-0.0013*** (0.0016)	-0.0072* (0.0031)	-0.0153*** (0.0050)	-0.0073 (0.0050)	-0.0148*** (0.0022)
50-200	-0.0214*** (0.0014)	-0.0151*** (0.0027)	-0.0225*** (0.0043)	-0.0003 (0.0051)	-0.0246*** (0.0019)
Over 200	-0.0306** (0.0013)	-0.0261** (0.0024)	-0.0314*** (0.0038)	-0.0048 (0.0045)	-0.0340*** (0.0017)
Industry:					
Agriculture	0.0167*** (0.0047)	-0.0063 (0.0096)	0.0259** (0.0114)	0.0165 (0.0161)	0.0292** (0.0065)
Construction	-0.0131*** (0.0038)	-0.0069 (0.0064)	0.0033 (0.0106)	-0.0454*** (0.0171)	-0.0133 (0.005)
Transport	0.0406*** (0.0028)	0.0171*** (0.0055)	0.0385** (0.0085)	0.0156* (0.0085)	0.0506** (0.0037)
Trade	0.0532*** (0.0021)	0.0178*** (0.00)	0.0535*** (0.007)	0.0172*** (0.0064)	0.0698*** (0.0029)
Hotels and restaurants	0.0618*** (0.0027)	0.0371*** (0.0053)	0.0443** (0.0083)	0.0155* (0.0094)	0.0749** (0.0037)
Business services	0.0159*** (0.0023)	0.0143*** (0.0040)	0.0204*** (0.007)	-0.0042 (0.0073)	0.0185*** (0.0031)
Public administration	0.0128*** (0.0030)	0.0088* (0.0052)	-0.0115 (0.0140)	-0.0169 (0.0110)	0.0216*** (0.0041)
Education	0.0617*** (0.0022)	0.0495*** (0.0039)	0.0385*** (0.008)	0.0294*** (0.0071)	0.070*** (0.0031)
Health + social	0.0675*** (0.0021)	0.0563** (0.0035)	0.0138** (0.0073)	0.0298** (0.0058)	0.0802** (0.0029)
Other	0.0506*** (0.0026)	0.0421*** (0.0044)	0.0386*** (0.008)	0.0049 (0.0110)	0.0588*** (0.0036)
Number of obs	260,760	51,859	12,865	12,765	129,271

We also find that the risk of involuntary part-time employment increases with low education compared to higher education although the difference is not very big. Similarly to time-related underemployment our results suggest that immigrants experience more involuntary part-time employment than natives. However, the results differ with respect to the impact of age. Whereas the risk of underemployment was highest among the youngest age group, the opposite is true in the case of involuntary part-time work in all the countries except for Sweden. This result reflects the fact that there are lots of students among young part-timers in all the Nordic countries, and for these students part-time work is a voluntary choice: they do not even want a full-time job.

As far as job-related characteristics are concerned we find that temporary workers also face a higher probability of involuntary part-time employment. The size of the firm and the industry also matter. By sector of industry, the highest probability of involuntary part-time employment in Finland is in trade and in hotels and restaurants where the probability of being an involuntary part-timer is 4.4–5.3 percent higher compared to the manufacturing industry. In Sweden the risks of involuntary part-time employment are highest not only in the private service sector (trade, hotels and restaurants) but also in public sector services such as education and health and social work. In Denmark and in Norway involuntary part-time work seems to concentrate more in such public sector services as education and health and social work.

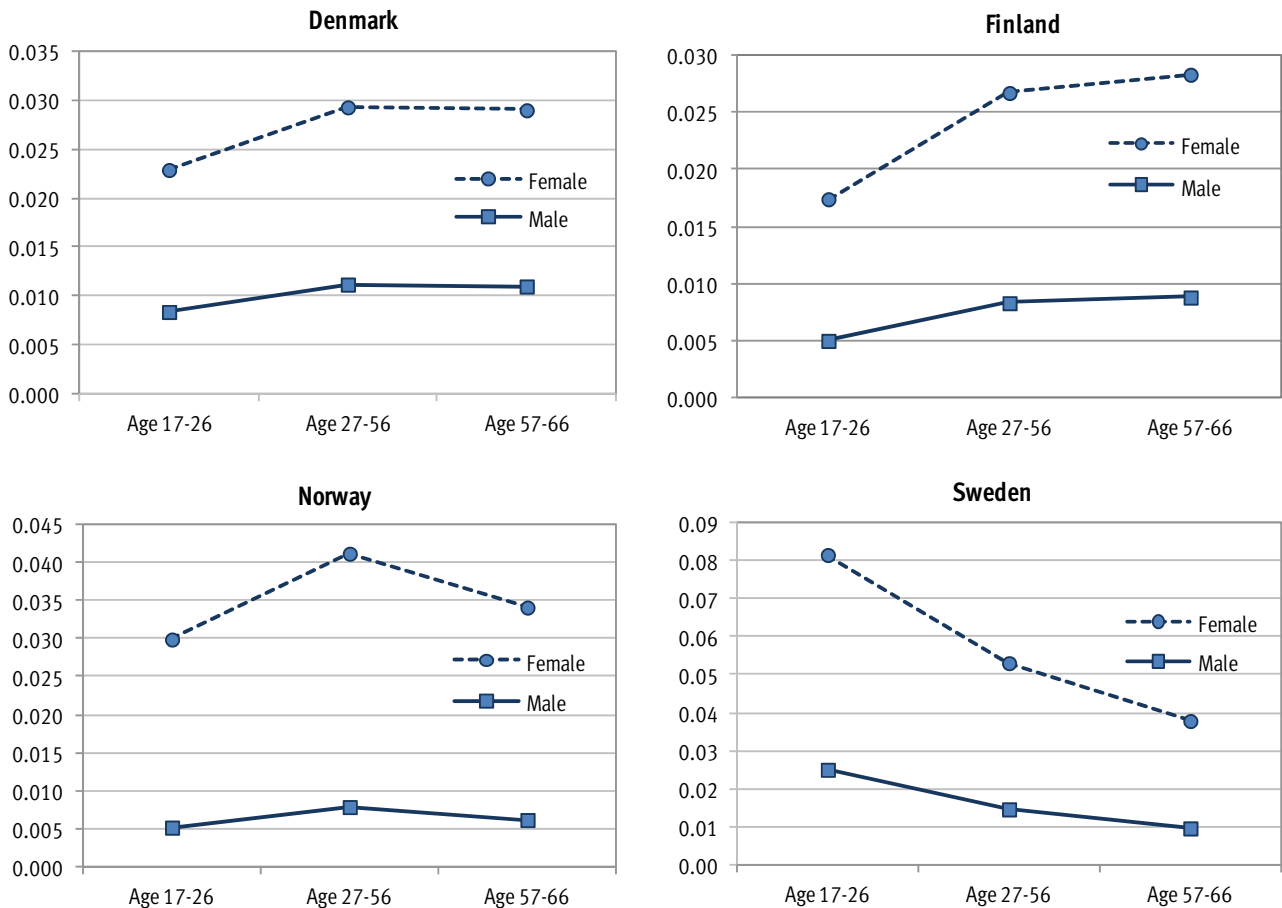
Diagram 3.2.10 presents the predicted probabilities of involuntary part-time employment calculated on the basis of the probit estimation results by gender and age while holding other covariates at their means.

We also estimated corresponding probit models separately for men and women as there might be differences in their determinants of underemployment. These results are reported in Annex tables 6–9.

As far as the determinants of time-related underemployment are concerned, there are no remarkable differences between women and men except for the magnitude of the marginal effects. In contrast, the results show some interesting differences between females and males as regards the determinants of involuntary part-time employment. For females the probability of being an involuntary part-timer is higher in older age groups compared to the youngest age group, and the probability is remarkably higher for those workers with primary or secondary education compared to the highest educated group in all the four Nordic countries. For males a lower education does not seem to increase the probability of involuntary part-time work in Denmark and Norway. In Finland and in Sweden the differences by educational level are smaller among male workers than among females.

Another interesting difference between females and males is found relative to the impact of age on the probability of involuntary part-time employment. Whereas for women the risk of involuntary part-time employment is higher among older women, the opposite is true for males in Denmark, Sweden and Norway. In other words, involuntary part-time employment in these countries is more common among young men.

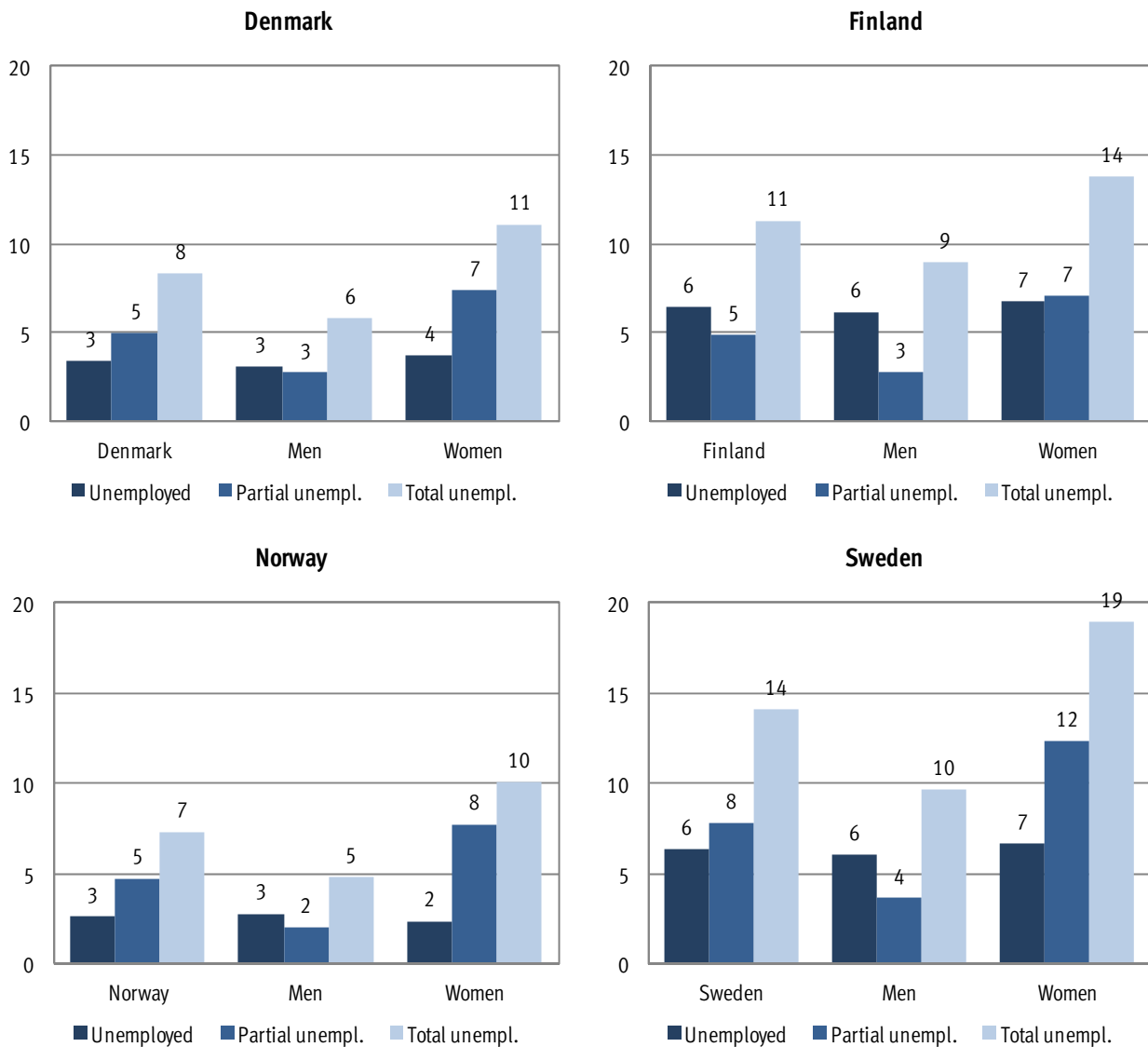
Diagram 3.2.10. Predicted probability of involuntary part-time employment by gender and age in the Nordic countries, % (Data: EU-LFS 2008) (holding all other covariates at their means).



3.2.6 Partial unemployment and total unemployment

Finally we assess the total amount of unemployment which consists of both full-time unemployed and partially (un)employed persons (see Nyberg 2005). The partially unemployed are comprised of time-related underemployed and involuntary part-time employees, whom labour force surveys normally classify as employed. The sum of all unemployed persons is presented as a percentage of the total labour force in Diagram 3.2.11.

Diagram 3.2.11. The percentages of the (full-time) unemployed, the partially unemployed and their sum as a percentage of the labour force in the Nordic countries, % (EU-LFS 2008).



The outcomes of total unemployment overestimate unemployment rates, but then the existing employment rates also overestimate employment rates. A more exact method in measuring employment and unemployment would be a calculation similar to that used in the Danish statistics, which take into account the time spent in employment and in unemployment, and measure unemployment as gross and net unemployment (see Chapter 4, Diagram 4.3.3).

When we add the partially unemployed to the traditional unemployment rates, the unemployment rate more than doubles in all other countries except Finland, where the increase in total unemployment remains just below the double. That is because in Finland partial unemployment is lower than full-time unemployment, unlike in the other Nordic countries. On average, total unemployment in-

creases from about 3 percent up to 7–8 percent in Norway and in Denmark, and from 6 percent up to 11 percent in Finland and to 14 percent in Sweden.

The gender gap in full-time unemployment is rather narrow in the Nordic countries, 1-2 percentage points. It widens when the total unemployment is calculated. Men in Denmark are as likely to be full-time unemployed as partially unemployed, whereas in the other countries, they are more likely to be full-time unemployed than partially unemployed. Women on the other hand, who are more likely than men to be part-time employees, are also more often part-time than full-time unemployed in all of the countries. In Finland, however, the difference is very small. Total unemployment rates in 2008 ranged, on average, from one in ten (Norway) to one in five (Sweden) women, but only from 5 (Norway) to 10 percent (Sweden) of men. When the concept of total unemployment is used the gender gap grows in Sweden from about one to about 9 percentage points. In the other Nordic countries the gap increases by about 5 percentage points.

4 Register based partial unemployment in the Nordic countries

4.1 The right for compensation during partial unemployment

4.1.1 Entitlement to unemployment benefit

In the Nordic countries compared, Denmark, Finland, Norway and Sweden, there are special unemployment schemes for part-time (partial) unemployment. Initially, the partial unemployment schemes (UB) were targeted at partially laid-off persons whose employers had reduced their weekly or daily hours. In most Nordic countries it has also been possible to take part-time work and to be entitled to (partial) UB if full-time work is not available. Short temporary, casual work contracts can also be a part of partial unemployment benefit schemes, with work unemployment periods alternating at short intervals. The designs of the full-time and part-time unemployment benefit schemes, however, vary greatly between the countries, and they have changed over time in each of the countries. The legislation in effect as of 2010 is presented in Table 4.1.1.

In all countries compared, unemployed persons who are looking for and available to work are entitled to unemployment benefit (UB) if certain other prerequisites are met. The unemployed have to register as a job seeker in an employment office. In Finland, Sweden and Norway the unemployed have to look for full-time employment in order to qualify for UB. In Denmark it is possible to insure oneself for full-time or part-time employment, and to qualify as unemployed while being a part-time job-seeker. About 90 percent of the members of voluntary benefit schemes have full-time insurance.

Unemployment insurance is voluntary in Finland, Sweden and Denmark and based on membership in an unemployment fund. Voluntary unemployment funds were originally administered by labour unions, as a service financed with membership fees. Since then, unemployment funds independent of union membership have also been created in all of the Nordic 'Ghent' countries, and union membership has decreased since the early 1990s (Lind 2009).

In Finland and Sweden there are basic unemployment schemes for those who are not members of voluntary funds. In Finland there is also a labour market support scheme providing assistance for jobseekers who have not worked previously or who have exhausted their entitlement to earnings related or basic unemployment benefits. Basic unemployment allowances are flat-rate benefits in both Sweden and Finland, but the Finnish labour market support is a means tested allowance. Without means-testing the support offers the same benefit level as the basic benefit. In Denmark there is no basic unemployment benefit scheme, but those who are not entitled to UB may, as unemployed jobseekers, be entitled to social assistance, which is a family related benefit.

Norway has a statutory unemployment benefit scheme as a part of the National Insurance (National Insurance Act of 28 February 1997). Voluntary unemployment funds and the Norwegian unemployment insurance offer earnings related compensation during unemployment, for a limited time and with varying qualifying conditions. The Norwegian unemployment scheme presupposes a certain amount of earnings before entitlement to any level of UB is granted, and working time must have been reduced by at least 50 percent.

4.1.2 Entitlement to unemployment benefit for the partially unemployed

The unemployed have to look for full-time work in order to qualify for UB, but if such work is not available, they have to be available for part-time work. In these cases the job-seeker may become entitled to partial or part-time unemployment benefit. As a rule, partial unemployment benefit schemes in all of the countries compared follow the rules of full-time UB. There are, however, big differences in the design, payment periods and development of the concepts of partial unemployment qualifying for partial UB.

In Finland¹⁸ partial unemployment was defined rather narrowly before the reformed Unemployment Benefit Act 602/1984. Only partially laid-off persons or persons whose working time was reduced by their employer were entitled to compensation for partial unemployment. Since 1985 also

¹⁸ This description of the development of the partial unemployment benefit is mainly based on an earlier study by Haataja (2007).

persons accepting part-time work instead of full-time work, when full-time work is not available, have been covered by the partial UB scheme (adjusted unemployment benefit). The adjusted unemployment benefit became linked both to the part-time wage and to the full-time unemployment benefit rather than the duration of unemployment as before. At first, adjusted unemployment benefits were paid on top of a certain protected portion of the part-time wage¹⁹, but in 1997 the protected wage provision was abolished. Since then 50 percent of each penny earned from part-time work has been deductible from the full-time unemployment benefit. This reform, together with a tax reform modifying the so-called earned income deduction, was more beneficial for those whose earnings from partial employment were at least one third or more of their former wage than for those with very low wages (Haataja 2007, 27).

The adjusted UB was paid if working time was reduced weekly by 20% (one day) or by 25% daily, or if working time in the new job was less than 75% of the prevailing full-time hours in the industry in 1985-1993. In 1994 the 75% rule covered everyone except those working 4 rather than 5 days per week. In 1997, coverage extended also to this group, which meant that those who were working 4 rather than 5 days per week were no longer entitled to unemployment benefit. In late 2000, during a recession, the rules were once again changed for those working a reduced week so that they became entitled to full UB for the days in unemployment.

Until 1984 those who had short temporary job periods on a full-time basis or were temporarily laid off were compensated for their time in unemployment. Since then unemployment benefit has in comparable situations been adjusted to four weeks' wages (two weeks' wages since 2003). Longer periods of unemployment bracketed by employment periods entitle one to a full unemployed benefit.

The duration of benefit for the part-time unemployed was first 75 days (in 1985), but was gradually lengthened to 100 and, in 1994, to 150 working days, but the total period of payment could not exceed 24 months even if the 150-day entitlement was not exhausted. The maximum payment period was increased from 24 to 36 months in 2000. The reform was never put into practice because implementation of the law was postponed. The maximum payment period provision was abolished altogether at the beginning of 2010. For the continuously part-time unemployed, the level of benefit is reassessed every 8 months based on their part-time wages since 2003.

Sweden has a long history of compensating part-time unemployed workers. Under rules put into effect in 1956, members of unemployment funds were treated as unemployed if their working time

¹⁹ For the partial unemployed, the benefit was adjusted with the wage so that wages above a certain protected portion of monthly part-time wages decreased the full unemployment benefit by 75 percent. In 1994 the wage adjustment percentage above the protected income was increased from 75 to 80.

was two hours per week or less, or partially unemployed (with a 50 percent compensation) if their working time did not exceed 4 hours per week. Surveys carried out in the late 1960s showed that a majority of part-time workers were satisfied with their working time, but if a part-timer became unemployed, she/he was not entitled to UB²⁰.

In the Unemployment Benefit Act (1973) part-time work was accepted as a form of normal employment. Unemployed part-timers who were looking for part-time work only became entitled to partial UB if their working time was at least 3 days or 17 hours per week. For those who worked part-time but were looking for full-time work, part-time UB was paid for only 50 days, or in special cases for 150 days, whereas compensation for full-time unemployment was available for 300 days. The shorter payment period was justified by concerns that part-time unemployment might become a normal state of affairs and that both the employer and the employee might prefer not to change the situation.

The maximum compensation period of 50 days was abolished in 1984, but was reintroduced in 1987, now extended to 150 compensation days. At that time part-time unemployment was for the first time during the history of the unemployment benefit recognised as a problem for employees in general and female employees in particular. Solving the problem would require efforts not only from employment authorities but also from employers and individuals. During an economic recession in 1993 the maximum payment period was abolished again because part-time work was seen as an alternative preferable to full-time unemployment. In the early 1990s several reforms occasioned by Cabinet changes were made to the unemployment benefit systems. In the 1990s part-time unemployment was recognised as a big problem in Sweden (then representing about 40% of total part-time employment). The problems associated with part-time unemployment have been discussed and analysed in several committees and programmes (SOU 1999:27; Nyberg 2003; Pettersson 2005). A maximum payment period of 300 days (equal to that applicable with regard to full-time employment) was introduced again in 1996. If part-time unemployment continued past that time, part-time work was regarded as normal working time for the person concerned.

The part-time unemployment benefit scheme was reformed again in 2008. The maximum payment period for part-time UB was cut to 75 days. In this system, partially unemployed persons with a working time up to 80 percent of normal working time can receive part-time benefit for 75 weeks, whereas under the former rule, compensation was available for 300 days in part-time unemployment accumulated over a period of six years (Ek and Holmlund 2011). Once compensation days are used up, the partially unemployed can remain in part-time employment but without compensation, or work full-

²⁰ The account of the historical development is based on Pettersson (2005).

time work with the status of an unemployment person. In the latter case unemployment benefit is paid only if the part-time wage would be lower than the full-time unemployment benefit.

In Denmark persons working 30 hours per week or less can take out part-time insurance or – in the event that they are insured as full-time employees – they can receive supplementary unemployment benefits if full-time work is not available and they work on a part-time basis. Before 1979, no restrictions applied to these supplementary benefits and part-time insured persons were subject to the same rules as the full-time insured. Until 1979 it was easy to take out part-time unemployment insurance and to claim benefits practically for an unlimited period. In 1979 part-time insured persons could claim benefits if, during the previous 4 years, they had completed the equivalent of 17 weeks of full-time employment. The 1979 legislation imposed some limitations on recipients of supplementary benefits and the part-time insured unemployed: the period on supplementary benefits was shortened and supplementary benefits were paid only if unemployment exceeded 20% (1/5) of the normal working week. In addition, recipients of supplementary benefits were required to take a full-time job if available.

The rules for supplementary benefits have been gradually tightened over the years, and the most recent reform was implemented in 2008. The period for receiving supplementary benefits was shortened from 52 weeks to 30 weeks. Normal full-time working time is 37 hours, and part-time work in this context is 30 hours maximum per week. If the loss of working time per week is less than 7.4 hours (one day or 20%) loss of earnings is not compensated. The unemployment benefit is generally equal to two-thirds of the full-time benefit.

In Denmark switching from involuntary part-time to full-time employment is guaranteed by means of a so-called certificate of discharge (*frigørelsesattest*) allowing employees to transfer immediately and without notice to a full-time job offered by another employer. This arrangement works both ways so that employers too can demand an employee to leave a part-time job with another employer.

The Norwegian part-time unemployment scheme differs most from those of the other countries compared. Compensation for partial unemployment is only paid on the basis of reduced working time, which has to be at least 50 percent of normal working time, or 40 percent if the person concerned is laid off. The payment period of unemployment benefit depends on the amount of income earned in the previous calendar year.

Table 4.1.1. Unemployment benefit (UB) and partial unemployment benefit: Common entitlement rules applicable to employees in 2010 (Source: Missoc 2010).

Common rules of unemployment	Denmark	Finland	Norway	Sweden
Benefits	Voluntary Earnings related UB scheme and Social Assistance	Voluntary Earnings related UB, Basic UB and means tested Labour Market Support	National insurance scheme	Voluntary Earnings related UB and Basic UB
Eligibility age	18–65	17–67	Under 67	20–65
Common qualifying period for UB 4)	52 full-time weeks over preceding 3 years Part-timers: 34 full-time weeks within 3 years	Employment at least 34 weeks during the last 28 months, at least 18 hours per week (same criteria apply to earnings related benefit). New entrants: 5 months to qualify for the labour market support.	Income from employment at least 1:5* the Basic Amount in the previous calendar year or a per-year average at least equal to the Basic Amount (€9,402) during the last 3 years.	Employed for 6 months, at least 70 hours of work per week during the last 12 months.
In education, parental leave, etc.	After vocational training 1 month	After vocational training, parental leave / home care leave: no waiting period.	See above	Parental leave or military service count toward 2-month waiting period
Membership in voluntary funds	12 months, different insurance schemes for full-time and part-time employees	10 months	National insurance	12 months
Compensation rate	90% maximum	45% once the level of the basic benefit is reached	0.24% of the income basis (normally 62.4%)	80% for 200 days, 70% thereafter
Ceiling for earnings related benefit	Max €505 per week	None	6 times the basic amount €53.14 per day	€1,835 per month or €67 per day
Waiting period after unemployment	None	7 days during 8 consecutive 7 days weeks	3 days over the previous 15 days, Saturdays and Sundays excluded	7 days (5 days before 2008)
Family supplements for children < 18 years	None	For up to 3 children, daily amount	For each child, daily amount	150 extra days of UB after normal maximum period
Maximum payment period	2 years within a 3-year period (4 years changed to 2 years in 2010)	500 days (about 2 years) Fl 1)	104 weeks, 52 weeks when work income less than €17,713 (twice the Basic Amount) in previous year	300 days (450 days if there are minor children)
Part-time unemployment	Denmark	Finland	Norway	Sweden
Definitions (MISSOC 2010)	Weekly working time is reduced by at least 7.4 hours in relation to full-time employment.	When an unemployed person works part-time but applies for or accepts fulltime work lasting not longer than one month and the total time does not exceed 75% of the working hours of a full-time worker. When an unemployed person has income from small business activity of his own which does not prevent him/her from accepting other work.	Normal working hours of the person concerned must have suffered a reduction of at least 50% (at least 40% for laid-off employees).	A person is considered as partially unemployed if s/he works less than s/he would like compared to his/her former normal working hours per week before s/he became unemployed.
Former work history of unemployed person	Full-time or part-time	No conditions (as full-time UB)	Working time reduced by at least 50%	At least 17 hours (3 days) per week (?)
Minimum reduction in working time	20% (7.4 hours per week)	25% (20% in 2012)	50%	20%
Short temporary contracts	..	Max 2 weeks in 4-week period		
UB adjustment period	Week (37 hours)	4 weeks	Week	Week
Compensation principle for UB	Time in partial unemployment, see full-time UB	Full UB per day minus 50% of wage in partial unemployment	Time in partial unemployment, see full-time UB	Time in partial unemployment. Compensation is paid according to a special table specified by the government. The benefit/basic allowance paid is in principle calculated in proportion to the reduction in working hours.
Maximum payment period,	30 weeks (52 weeks before 2008)	None since 2010 (before 36 months)	26	75 days (300 days before 2008)

In summary, all of the Nordic countries offer partial compensation for loss of income because of a reduction in working time made against the employee's wishes. Entitlement to compensation from unemployment benefit schemes requires that partially unemployed persons must be looking for full-time employment and must register with the employment office. Only in Denmark can a person have insurance against unemployment from a part-time job, and can look for part-time work. The reduction in working time required to qualify for partial UB has to be at least 20% in Denmark and in Sweden, 25% in Finland, and 50% in Norway. The adjustment period for partial unemployment benefit is one week in all other countries except Finland, and compensation is paid for partial time in unemployment. In Finland short temporary work contracts (maximum 2 weeks) are covered by the adjusted unemployment benefit scheme. Unemployment benefit is paid and adjusted to wages in periods of four weeks, and not to time in unemployment.

4.2 Recipients of partial and part-time unemployment benefit

Eurostat's Labour Market Policy (LMP) statistics cover all labour market interventions that are considered significant. The prevalence of recipients of unemployment benefits is classified as an intervention of the type 'Out-of-work income maintenance and support' (Eurostat 2010, tables C 4.2). Other types of intervention (such as activation measures) are classified separately though paid out of unemployment benefit schemes. Some activity measures are financed from other common social security schemes or by Ministries of Labour. The LMP statistics recognise also the partially unemployed and the expenditure on unemployment benefits used for partial unemployment. Because of different definitions of part-time unemployment and because the conditions for part-time unemployment benefit vary greatly, the information is not available from all of the countries.

As can be seen in Table 4.2.1, part-time unemployment measured as a percentage of the stock (recipients of benefits) and as a percentage of the expenditure, is rather high in Sweden compared with other countries. The high costs of partial unemployment was one reason behind the launching of the Swedish HELA project for part-time unemployment in the early 2000s (Forssell and Jonsson 2005; Pettersson 2005).

Table 4.2.1. LMP expenditure and number of persons (stock) receiving out-of-work income maintenance support, full-time and part-time/partial unemployment benefit: Amount at end of month or monthly average in 2008.

Out-of-work income maintenance and support	Men and women, stock			
	Denmark	Finland	Sweden	Norway
Stock average per month	72,634 ^a	179,305	196,795 ^b	45,534 ^c
8.1 Unemployment Insurance – full-time	72,634	157,012	103,578	28,288
8.3 Part-time UB schemes		21,788	93,217	
– Part-timers % of total UB		12.2	47.4	
LMP expenditure, million euros	1,705	1,772	1,499	989
8.1 Unemployment Insurance – full-time	1,615	1,616	847	893
8.3 Part-time UB schemes	..	133	565	89
– Part-time UB % of total UB		7.5	37.7	9.0

^aDenmark: The summary stock includes those receiving social assistance for unemployment. The recipients of benefits are calculated on the basis of full-time equivalence.

^bStock in Sweden at the end of the year.

^cNorway: the summary stock includes payments for occupational rehabilitation made between rehabilitation measures. According to Norwegian historical unemployment statistics there were 17 838 full-time and 7 626 part-time unemployed recipients of benefits in 2008.

Source: Eurostat 2010, tables C.4 and B.3, Action 8). For more details see:

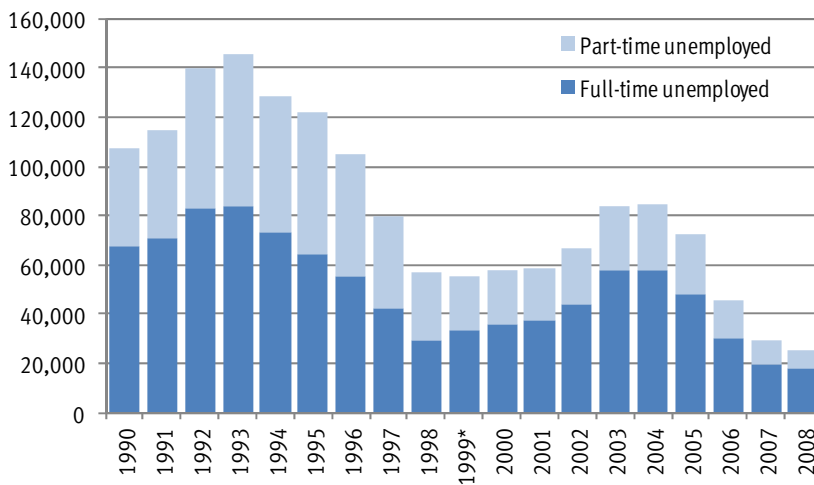
http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_market_policy.

There are big differences between the Nordic countries in how unemployment benefit statistics are produced and used to describe unemployment. The first difference concerns Norway and the rest of the countries. In Norway the unemployment benefit is a part of social insurance. Only one institution, the Directorate of Labour (NAV), collects and publishes information from recipients of unemployment benefit and from unemployed persons registered as jobseekers. In the other Nordic countries information about earnings related benefits is collected from several individual unemployment funds or from IT service providers contracted to operate the unemployment funds' payment systems.

In Norway the register-based collection of data about job seekers, available jobs, etc. was computerised in 1983 (Historisk arbeidsmarkedsstatistikk 2008). This made it possible to collect and publish information regularly for various labour market purposes.

The full-time unemployed are defined as 'registered job seekers who have been without income earning employment during the last two weeks'. Part-time unemployed job seekers are defined as registered job seekers who have had income earning employment during the two last weeks, but have worked less than the normal hours and are looking for longer hours. Diagram 4.2.1 shows the number of recipients of full-time and part-time unemployment benefits; they are also classified as registered jobseekers.

Diagram 4.2.1. Number of registered unemployed persons and recipients of full-time and part-time unemployment benefits in Norway, 1990-2008.



Source: Historisk arbeidsmarkedsstatistikk. Samlet statistikk til og med 2008. Arbeids- og velferdsdirektoratet (NAV), <http://www.nav.no>. In 1999 the definition of full-time and part-time unemployed was changed. This had the impact of fictionally increasing the rate of unemployment and decreasing the rate of part-time unemployment.

In Finland information about recipients of earnings related benefits is collected from unemployment funds by the Financial Supervisory Authority in Finland (Fiva). Information about recipients of basic unemployment benefit and labour market support is produced by the Social Insurance Institution (Kela). The institution also awards these benefits to unemployed persons who have registered with the employment office. Fiva and Kela publish both separate statistics and a joint statistical yearbook about recipients of unemployment benefits (Statistical Yearbook on Unemployment Protection in Finland 2009. 2010).

The statistics on unemployment benefits describe the prevalence, type, cost, payment periods and level of the benefits and allowances. In the yearly statistics one unemployed person may receive several unemployment benefits for different reasons and at different times during a year. Such a person may therefore be counted multiple times as a recipient of unemployment benefits.

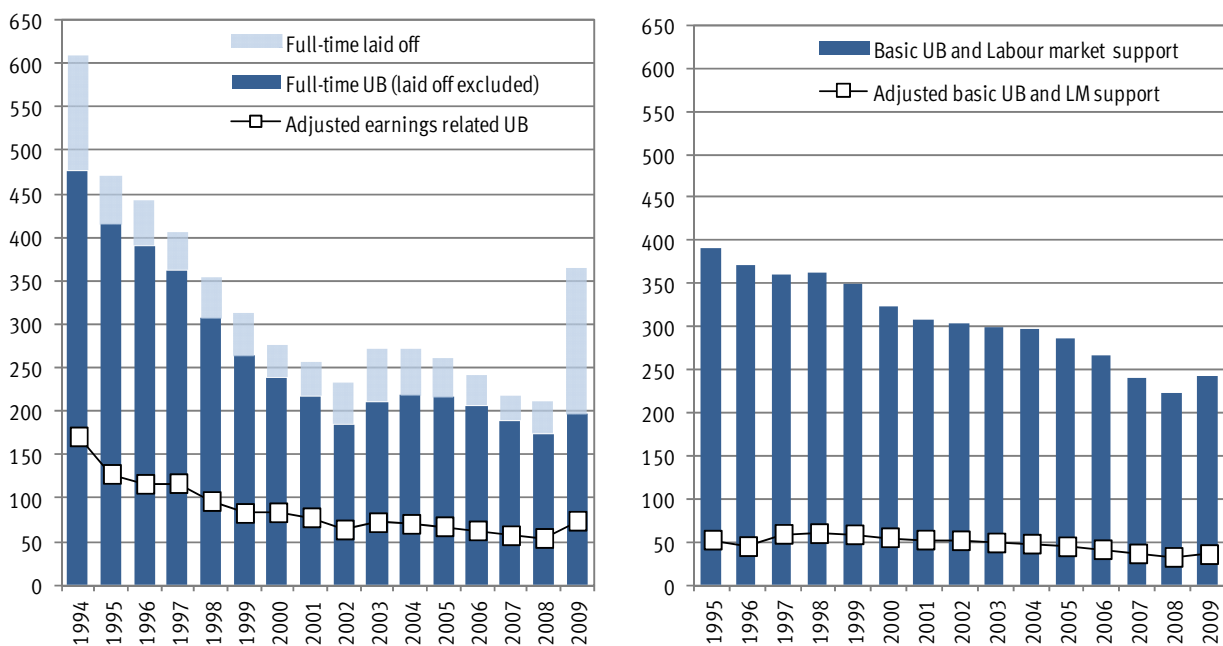
Still, the Finnish unemployment benefit statistics are the main source of data for identifying the volume and type of partial unemployment. The type of partial unemployment²¹ is not regularly published, but detailed information is available from Fiva, Kela and the Ministry of Social Affairs and Health. For instance, the majority of the recipients of earnings related partial unemployment benefit were part-time workers (52%) who could not find full-time work. The second biggest group in 2009 was those with short casual work contracts (46%). The summary of the recipients of unemployment

²¹ The types of partial unemployment benefit in Finland: 1) weekly working time or 2) daily working time reduced by employer, 3) part-time work (instead of full-time) taken as unemployment, 4) temporary short work contract (less than 2 weeks), 5) self-employment, 6) second job, 7) not in employment because of bad weather and 8) several reasons at the same time.

benefits during the year also includes the benefits paid by the unemployment funds and by Kela, including allowances and subsidies aimed at activation²².

The time series in Diagram 4.2.2 shows that, before the recession in 2009, there were fewer recipients of full-time earnings related benefits than recipients of basic benefit and labour market support in the 2000s. However, among the recipients of adjusted unemployment benefit there are somewhat more recipients of the earnings related benefit than of the basic benefit or of means tested labour market support.

Diagram 4.2.2. Recipients of full-time and adjusted (partial) earnings related UB, basic UB and labour market support per year^a in Finland, 1 000 persons, 1994/1995–2009.



^a Beneficiaries may qualify for several benefits during the year, so that one person may be counted as a recipient of both full-time and adjusted benefits, of earnings related and basic benefits, and of labour market support. Those collecting benefit under an activation programme are included in the time series. Source: Ministry of Social Affairs and Health, the Social Insurance Institution (Kela) and the Financial Supervisory Authority (Fiva).

In Denmark the Central Register of Labour Market Statistics (CRAM) and the Register of Labour Market Statistics (RAM) collect information about the claimants of unemployment benefits. Information about insured persons is reported by the unemployment insurance funds, while information about persons who receive cash benefits and are available for work under the Danish Social Assistance Act is transmitted by the job centres.

²² For example labour market training subsidy, integration assistance for immigrants and wage subsidy (from Kela) and earnings related training allowance and job alternation compensation from unemployment funds.

The number of recipients of unemployment benefits is defined as the number of persons receiving unemployment benefit (during the reference period) at a rate higher than zero. The statistics cover all persons for whom the number of hours of unemployment benefits during the reference period is higher than zero (persons for whom the scope of deductions implies that unemployment benefits cannot be claimed are excluded from the number of recipients of unemployment benefits).

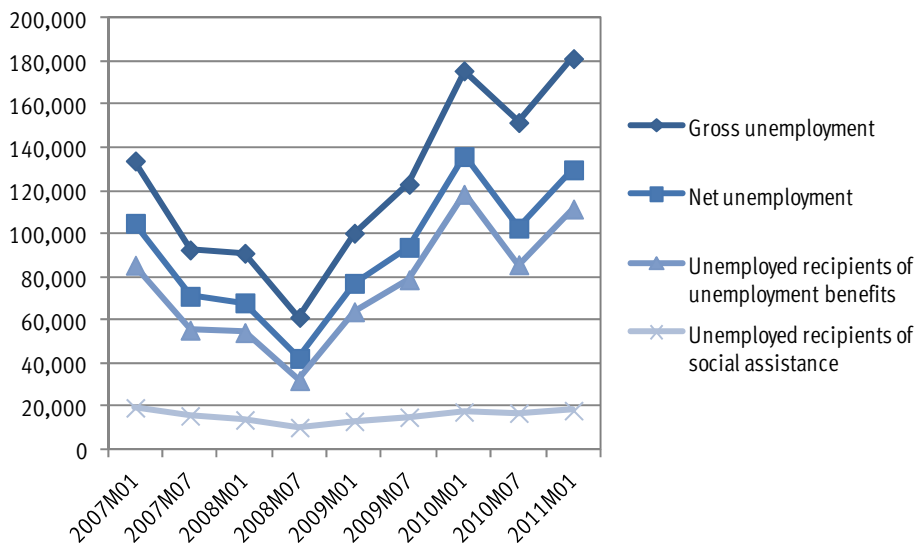
The unemployment benefit statistics actually do not measure the number of recipients of benefits but hours of unemployment as an indicator of the degree of unemployment. The degree of unemployment during the reference period is calculated for each person by summing up the unemployment benefits received weekly and dividing that figure by the number of weeks in the reference period. The level of weekly unemployment benefits is defined as the number of hours per week for which unemployment benefits can be claimed in relation to 37 hours (irrespective of whether the person in question is insured on a full-time or part-time basis). Thus unemployment is expressed on the basis of “full-time equivalence”, which means that one “fictive unemployed” may be a summary of more than one part-time unemployed.

Even though the part-time unemployed are not separated from the full-time unemployed in the benefit statistics, they can, in practice, be distinguished from unemployed full-time workers in the yearly data: if a person has received ‘supplerende dagpenge’ for more than 15 weeks, meaning that s/he has worked less than 37 hours per week, the person can be classified as part-time unemployed²³.

Persons participating in an activation programme or equivalent are only included in the statistics on the basis of the number of excess hours of pure (net) unemployment. Registered gross unemployment, on the other hand, also includes persons in activation programmes, if available for work. An example of registered unemployment with gross and net figures is presented in Diagram 4.2.3. In Denmark there is no basic unemployment benefit scheme, but receipt of social assistance because of unemployment comes close to receipt of the Finnish labour market support. The number of recipients of social assistance in Denmark is rather small but is expected to increase in 2012 when the shorter payment period (2 years) will deprive some unemployed persons of their unemployment benefits.

23 Information from Arbejdsdirektoratet / Thomas Moelsted Joergensen 2007.

Diagram 4.2.3. Gross and net unemployment (measured as full-time unemployment) and the number of recipients of unemployment benefits between 1 January 2007 and 1 January 2011 in Denmark.

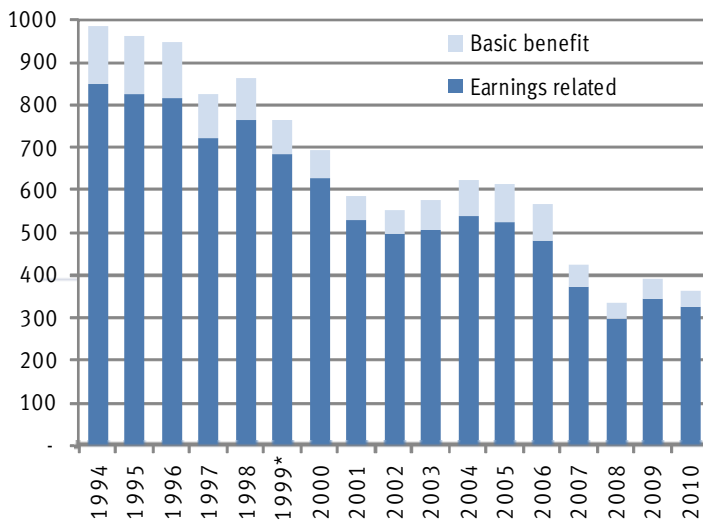


Source: <http://www.statbank.dk/AUS07>.

In Sweden register based information about recipients of unemployment benefits is collected by the Swedish Unemployment Insurance Board (IAF). The IAF publishes time series about recipients of earnings related and basic unemployment benefit, but does not split them into groups of part-time and full-time unemployed persons.

Diagram 4.2.4 shows the long-term development in the yearly prevalence of unemployment benefits according to basic and earnings related benefits. A big change in the time series occurred in 1999 with the exclusion of persons receiving benefits for labour market measures (activation and education) from the number of recipients. While benefits for labour market measures are paid by the Social Insurance system, their costs are borne by the Public Employment Service (AMS). Those receiving activation benefits are not included in the unemployment benefit statistics as they are, for example, in Finland. In 2008–2009 the number of persons receiving benefits for labour market measures increased from about 150,000 to 220,000 (Socialförsäkringen i siffror 2010).

According to Ek and Holmlund (2011) persons who receive benefits less than 5 days per week are defined as part-time unemployed. This classification can, however, result in the inclusion of persons on sickness or parental leave, i.e., who are not unemployed in the sense of looking for work. Consequently, the number of part-time unemployed is higher according to the IAF statistics than in the Swedish labour force survey (AKU). However, the development in the number of full-time unemployed persons seems to be rather similar in the register based IFA statistics and the survey based AKU (Table 4.2.2).

Diagram 4.2.4. Recipients of earnings related and basic unemployment benefit in Sweden, 1994–2009, 1000 persons.

Source: Years until 1999, Historical data: <http://www.iaf.se/Statistik/Historiska-uppgifter/>, 2000 onwards: Astat/underrättelsedatabasen, IAF. Earnings related and basic benefits for labour market measures are included until 1999.

Table 4.2.2. Full-time and part-time unemployment in Sweden, register and survey based, 2005–2009.

Year	Full-time		Part-time		Part-timers, %	
	LFS	IAF	LFS	IAF	LFS	IAF
2005	148,300	164,600	33,900	95,200	18.6	36.7
2006	129,900	137,100	30,500	86,400	19.0	38.7
2007	97,000	100,400	29,700	71,400	23.4	41.6
2008	76,900	72,900	20,200	48,800	20.8	40.1
2009	125,900	116,600	17,500	37,000	12.2	24.1

Source: Ek and Holmlund 2011, table 3.1, page 162 (based on SCB, AKU and IAF). Percentages of part-timers are calculated here from the original table 3.1.

4.3 Registered partially unemployed job-seekers

Registered jobseekers are divided into registered unemployed jobseekers and other jobseekers (Table 4.3.1). In the same statistics, collected by the national labour administration, there is as a rule also more detailed information about jobseekers, such as the share of those participating in the labour market measures who are laid off, etc. This information is presented separately. Unemployed (and partially employed) job seekers have to register at an employment office as seeking full-time employment (if not insured for part-time employment as in Denmark) and to be available to take on a job offer within two weeks in order to be entitled to unemployment benefits.

According to Eurostat the share of job seekers per year varied from the less than 2% in Norway to the more than 15% in Finland as a share of the total active population in 2008. In Finland and Denmark about a half of job seekers were classified as unemployed, in Sweden only 29% were, and in Norway almost all were (Table 4.3.1).

Table 4.3.1. Persons registered with the Public Employment Services: Registered unemployment in the Nordic countries in 2008.

Thousands	Denmark	Finland	Sweden	Norway
Active population (1,000)*	2,953	2,678	4,907	2,581
Jobseekers % of active population	3.9	15.5	10.7	1.7
Registered unemployed % of active population	2.2	7.6	3.1	1.7
Registered job seekers total (1,000)	116.0	415.9	524.9	44.0
Registered unemployed (1,000)	63.5	203.8	150.4	42.6
Registered, other (1,000)	52.6	212.1	374.5	1.4
Unemployed, % of job seekers	54.7	49.0	28.7	96.7

Source: Eurostat 2010, Table D.2.1, page 196: Registered jobseekers and registered unemployed, all ages, 2008. Source*: lfsi_act_a-Population, activity and inactivity - Annual averages. Extracted on 12-11-2010.

Source: Eurostat, 28.10.2010; <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00081>.

The number of registered jobseekers does not always match the number of unemployment benefit recipients. Some unemployed jobseekers may have run out of entitlement to the benefit or are not paid for other reasons. On the other hand, recipients of partial unemployment benefit may be categorised as “other job seekers” alongside those who are employed but looking for a job. At the national level there are, again, big differences in how information about jobseekers is collected and produced. At the EU level job seekers are not divided into full-time and part-time unemployed job seekers, but at the country level such information is available from some countries.

In Norway, as seen in chapter 4.2, registered unemployed persons and unemployed jobseekers are the same group. Norway splits recipients of unemployment benefits into the part-time and full-time unemployed. Normally these distinctions are not shown in job seeker data, but information is available. Registered unemployed persons are looking for a full-time job and are registered with the employment service. In addition to the registered unemployed, there are unemployed persons who are participating in active labour market policy measures. All registered unemployed persons are not, however, looking for work, because they are either aged long term unemployed (not in labour force) or persons laid off (temporarily absent from work according to the labour force survey)²⁴.

The Finnish Ministry of Employment and Economy (TEM) publishes statistics on registered job seekers (Employment Service Statistics of the Ministry of Employment and the Economy). Unemployed jobseekers are defined as jobless persons who are available for work and looking for work with at least 50 percent of the normal working time, or who are waiting to start a job. Those who are laid off and registered as jobseekers are also classified as unemployed jobseekers. Jobseekers who can take a job only after a certain time period or who are looking for a job with shorter working hours than 50% of the normal working time are not classified as unemployed jobseekers²⁵. Almost

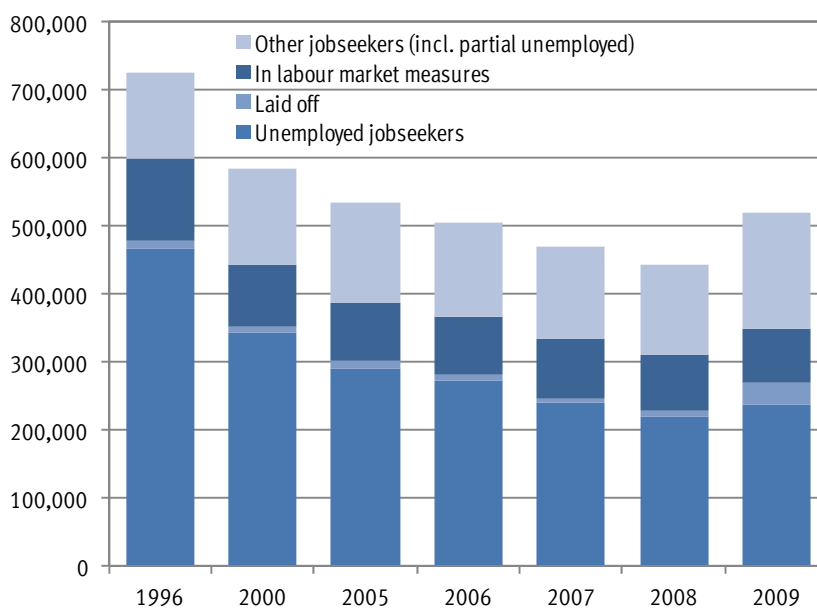
24 E.g. website of Statistics Norway: http://www.ssb.no/vis/english/subjects/06/01/aku_en/main.html. Unemployed (LFS), registered unemployed and registered unemployed plus government measures to promote employment. Seasonally adjusted figures, three-month moving average in 1000 persons 1999–2011. See also http://www.ssb.no/vis/english/subjects/06/01/aku_en/main.html.

25 <http://www.tem.fi/index.phtml?s=2622>.

50,000 of the recipients of unemployment benefits (16–19%) receive an unemployment pension. They are no longer actively looking for a job but are counted as unemployed jobseekers (Työvoimapolitiittinen aikakauskirja (Finnish Labour Review) 2010, 43 statistical annex).

The Employment Service Statistics do not define the conditions for job seeking as strictly as the labour force survey. For example, elderly unemployed who are no longer under obligation to look actively for a job (being on the so called ‘unemployment pathway’ to retirement) are also included as unemployed jobseekers. Job seekers registered as unemployed are, under the Employment Service Act (2002/1295), entitled to a personal job search programme and other labour market measures. Under the Act, full-time jobseekers who work at least one day (or 4 hours per week) but less than the normal working time do not count as unemployed (Haataja 2002, 12). This rule may also affect the statistics, even if the classification of jobseekers may ultimately depend on the local authorities. A great many partially unemployed jobseekers are, however, classified as employed jobseekers (Diagram 4.3.1).

Diagram 4.3.1. Different kinds of jobseekers in Finland, 1996–2009: Calculations based on the Employment Service Statistics of the Ministry of Employment and the Economy.



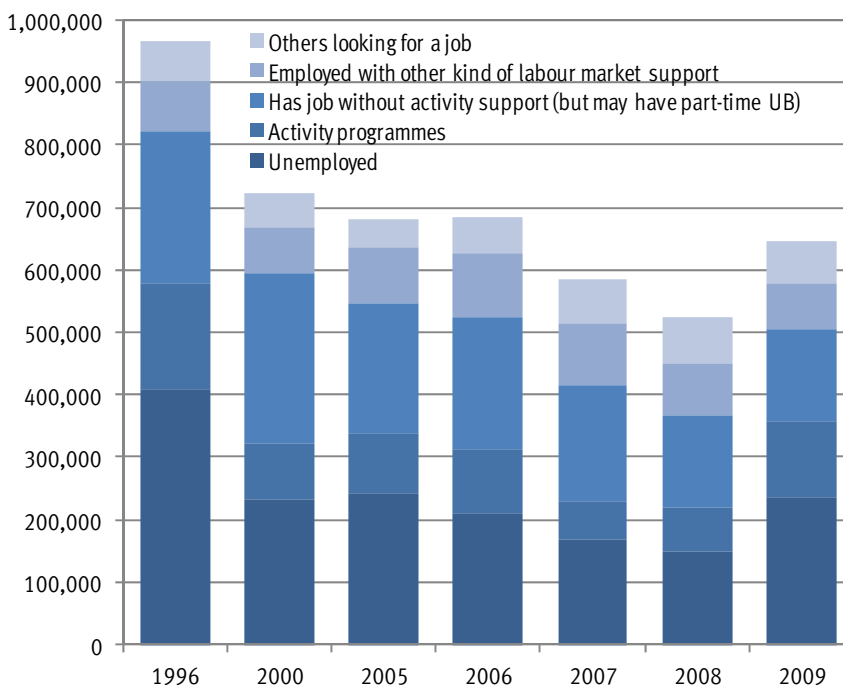
Source: Statistics of the Ministry of Employment and the Economy. Finnish Labour Review 3/2010, tables 13 (Employment service: jobseekers, situation of the last working day of the month), 19 (Unemployed jobseekers at the end of employment service and persons laid off and working a reduced week, situation of the last working day of the month) and 21 (Participants in different measures, average at the end of the month).

The Swedish Public Employment Service (AMS) collects and publishes statistics on registered jobseekers. The part-time unemployed have their own category as jobseekers. They are defined as persons who have a job but who work less than they would like to. Those of them who are entitled to unemployment benefit are paid compensation for their time in unemployment.

Part-time employees, hourly employees (employed at least 8 hours per week) and the casually employed (tillfälligt arbete) are categorised as a part of a larger group of ‘jobseekers who are employed without any labour market support to the employer’. In the same group of jobseekers there are also persons who are looking for short work contracts (less than 3 months) and jobseekers who are willing to change their permanent job for another job. Part-time unemployed persons who participate in a labour market programme while working part-time are classified on the basis of their programme participation. (Diagram 4.3.2.)

Contrary to the Finnish practice, Swedish employment policy is geared towards the needs of partially unemployed persons. The labour legislation concerning security of employment has stipulated since 1997 that part-timers have a preferential right to vacant jobs with more hours than they currently have. Employment offices must, among other tasks, make sure that unemployed persons in receipt of unemployment compensation are available to work and look actively for employment. However, studies show that job offers more often go to the full-time rather than the part-time unemployed. (Ek and Holmlund 2011, 160–161.)

Diagram 4.3.2. Registered jobseekers in Sweden 1996–2009. Part-time unemployed, hourly workers and those in temporary work contracts belong to the category ‘Not supported jobseekers’.



Source: Arbetsförmedlingen: Sökande 1996–2009; <http://www.arbetsformedlingen.se/Om-oss/Statistik-prognoser/Tidigare-statistik.html>.

In Denmark all registered unemployed are considered to be unemployed job seekers. To claim unemployment or social welfare benefits one has to be registered with the job centre. Certain persons claiming social benefits are not considered to be available for a job and are not included in the la-

bour force or registered as unemployed. Full-time and part-time unemployed jobseekers are classified in the same category.

Information on unemployed job seekers can be found in register based labour force statistics (RAS, Registerbaseret Arbejdsstyrke Statistik). The register consists of several different registers (various internal and external registers, including an e-income register, a workplace register, a central business register, a register with information about persons without ordinary employment, an educational register, and a population register)²⁶. Employed persons are in the RAS statistics classified according to register-based information from the Danish tax authorities.

In the LFS people are classified as persons in employment if they state that they have been employed for at least one hour during the week preceding that in which the interview takes place. Taking this fundamental difference into account, there is a high degree of consistency between the statistics regarding the total number employed persons, yet a greater difference in the numbers of the three socio-economic groups (self-employed, assisting spouses and employees).

The survey based statistics are based on EU standards used in the labour force survey (AKU). Some who seek a job but do not receive benefits are not included in the register data but are in the labour force survey. The labour force survey allows the identification of all job seekers. They can be found in something called the 'labour reserve', which contains three groups, namely the unemployed, the full-time employed and the part-time employed. The labour reserve is calculated from the number of additional hours employed persons would prefer to work and the number of hours unemployed persons wish to work. This amount is multiplied by 52 and divided by 1.924 hours. The result is the number of persons available for work during a year. (Table 4.3.2.)

Table 4.3.2. Persons available for work (000s), Denmark (information is based on AKU).

	2008K 1	2008K 2	2008K 3	2008K 4	2009K 1	2009K 2	2009K 3	2009K 4	2010K 1	2010K 2	2010K 3	2010K 4
Full-time employed	14	14	16	14	16	11	10	9	11	10	9	8
Part-time employed	27	31	24	26	30	39	32	29	30	32	26	26
AKU-ledige	96	83	94	97	146	170	171	190	220	205	196	200

Source: Danmarks Statistik, Statistikbanken. All registered unemployed and those who state that they are seeking a job are jobseekers - in essence: anyone classified in the category "AKU-ledige" is a jobseeker. These definitions cover both the full-time unemployed and the partially unemployed jobseekers.

²⁶ <http://translate.google.fi/translate?hl=fi&sl=en&tl=da&u=http%3A%2F%2Fwww.dst.dk%2FHomeUK%2FGuide%2Fdocumentation%2Fvaredeklarationer%2Femnegruppe%2Femne.aspx%3Fsysrid%3D000848&anno=2>.

5 Summary

5.1 Concepts and comparability

Over the long run (since the 1960s and 70s) part-time employment has decreased in the Nordic countries, especially in Denmark, Norway and Sweden, mostly because of changes in women's employment patterns. However, part-time employment began to increase again in most Nordic countries in the 2000s. The increase of part-time work is essentially due to an increase in voluntary part-time work done by young people or people who use their statutory options to reduce working time. They want to achieve a work-life balance better attuned to their working capacity or other needs. However, part-time work done because full-time work is not available has, on a more or less ongoing basis, had a share of total employment in all of the Nordic countries, even if the actual level varies in different countries.

This paper analyses partial unemployment, its extent and characteristics, and the relevant concepts used in Denmark, Finland, Norway and Sweden. It argues that it is crucial to understand what we mean by partial unemployment when we discuss, make comparisons and draw conclusions about partial unemployment in different contexts and in different countries.

Being partially unemployed simply means that one would like to work more hours or work full-time. The concept 'part-time unemployment' is especially widely used in Sweden, but is also used in other Nordic countries except Finland. In Finland the corresponding concept is partial employment or partial unemployment. Part-time unemployment and partial unemployment are involuntary, and the situation could also be expressed as underemployment.

The concept 'part-time unemployment' cannot be directly found in the labour force surveys, because working even one hour per week classifies one as employed. Instead, other definitions such as involuntary part-time or underemployment can be used. However, all underemployed persons do not work part-time. That is why we focus only on the underemployed working part-time, i.e. on time-related underemployment.

Partial unemployment is in all Nordic countries agreed to be evidence of unemployment entitling the partially unemployed jobseekers to compensation because of unemployment. Yet the definitions, the concepts used and the qualifying criteria and entitlement rights to benefits vary greatly between the countries. It is especially difficult to find comparable register based statistics on the extent of part-time unemployment, which in part is due to differences between individual schemes and rules applicable to part-time unemployment benefits.

We cannot say how much is due to lack of comparable information about partial unemployment and how much is due to lack of interest in the phenomena in question, but partial unemployment has not been featured as a labour market phenomenon for example in the Nordic Statistics on Social Insurance (Nososco). Unemployment on the whole as well as employment, however, are given much attention in these statistics. By contrast, Eurostat's statistics on Labour Market Policy (LMP statistics) and the Mutual Information System on Social Protection (MISSOC) offer some information about partial/part-time unemployment in the EU member states and Norway, even if in a limited way. Furthermore, Eurostat introduced recently new indicators concerning unemployment, one of them describing underemployed part-time workers.

Involuntary part-time work and time-related underemployment are the concepts nearest to and most synonymous with partial unemployment available in the labour force surveys. The concepts have been harmonised by the ILO, OECD and EU, but as we could see in the second chapter of this paper, there are still differences in the definitions used by the individual organisations and countries. Efforts to harmonise the European Labour Force Survey (ELFS) are focused on newer data or are still underway in some countries. It is thus difficult or even impossible to find comparable time series from the published statistics about how partial unemployment has developed. In this study we use more detailed information about involuntary part-time employment and time-related underemployment as synonyms for partial unemployment using the ELFS micro data for 2008. We analyse the amount of overlap between involuntary part-timers and the underemployed working part-time, and see to what extent their individual characteristics and working times, among other factors, differ or converge in the Nordic countries.

5.2 Diversities in partial unemployment and benefit schemes

Part-time unemployment exists as an official concept and is presented in register based statistics on job seekers only in Sweden (deltidsarbetslöshet) and in Norway (delvis arbeidsløs), even if seldom in the form of published data. In the Finnish register on job seekers this concept is not used, and the partially unemployed are classified as employed job seekers. Partially unemployed persons are, however, visible in the unemployment benefit statistics as recipients of adjusted unemployment benefit (soviteltu päiväraha). Denmark differs markedly from the other Nordic countries in terms of the way in which unemployment statistics are produced. Unemployment is calculated as gross and net unemployment based on weekly hours of unemployment. When unemployment is expressed on a 'full-time equivalence basis' one fictive unemployed person may be a summary of the hours of un-

employment experienced by many other persons in a week, being thus a sum of both partial and full-time unemployment.

The prerequisites for entitlement to partial unemployment benefit are the same as those applied in the event of full-time unemployment: One has to look for a full-time job and to be available to accept it. The only exception is Denmark, where it is possible to insure oneself as a part-time employee, and if unemployed, to look for part-time work only.

There are also other differences in principles between the Nordic countries when it comes to defining entitlement to partial unemployment benefit. First, in all other countries except Norway, both those whose working time is reduced by their employer and those who take a part-time job if full-time work is not available, are entitled to benefit. In Norway the scheme covers only those with reduced working time. Second, entitlement to part-time unemployment benefit starts when working time is less than 50% (Norway), 25% (Finland until 2011) or 20% (Denmark and Sweden) of the normal working time in the industry or occupation. Third, the adjustment period between time in employment and unemployment is adjusted weekly in all countries except Finland. In Finland the adjustment period is four weeks. Fourth, all the other Nordic countries except Finland compensate for the time in unemployment during the reference period (week). The Finnish unemployment scheme adjusts unemployment benefits to the part-time wage received during the reference period (four weeks).

Persons with casual short work contracts are principally treated in the same way as the part-time unemployed, especially when the reference period is one week and compensation is paid for time in unemployment. Here, too, Finland is the exception: if the full-time temporary work contract lasts less than 2 weeks within a 4-week period, unemployment benefit is adjusted to the wage paid for that 4-week period. If the work contract is longer, a full-time unemployment benefit is provided for the time in unemployment.

In addition to the above mentioned four differences in principles between the Nordic countries there are, of course, other differences as well, which are described in chapter 4 on the basis of MIS-SOC information and checked by the members of the network. Other relevant differences concern for example the waiting periods for benefits (none in Denmark, from 3 to 7 days over the course of a certain period in the other countries), payment periods, compensation levels, and the accumulation of benefit from part-time work. The schemes have, however, changed form several times over the years, alternately easing the criteria and tightening them. For example, Sweden and Denmark have

in recent years tightened eligibility criteria, Finland has made them slightly easier (concerning the payment period), and Norway has kept them largely unchanged in the 2000s.

5.3 Time-related underemployment and involuntary part-time work

The definitions of time-related underemployment and involuntary part-time work, which we have chosen to represent partial and part-time unemployment in the Labour Force Survey, have certain differences. Involuntary part-time work means that the reason for working part-time is that no full-time work is available. The definition of part-time work is based on the respondents' own opinion, except in Norway where a fixed definition of part-time work is used. Involuntary part-timers always work on a part-time basis, but there is a wide gamut of expressed or defined part-time working hours. Involuntary part-timers, by definition, do not have to prove their willingness to work more hours or take a full-time job as part-time and full-time unemployed persons have to do in the Finnish or Danish labour force survey. That notwithstanding, we define involuntary part-time work as one phenomenon of partial unemployment.

There are many criteria for the definition of time-related underemployment concerning not only working time but also the search for more hours or a new job and the availability to work more hours or to enter a new job. These conditions are akin to what is expected of the full-time and part-time unemployed to qualify for unemployment benefit. We have chosen the underemployed who work a maximum of 35 hours per week to represent time-related underemployment and thus also partial unemployment.

How much do the time-related underemployed and the involuntary part-timers overlap and, when they do not overlap, to what extent do their characteristics converge or differ? These questions were studied from the micro data of the European labour force survey 2008. We expected a rather big overlap between these groups but found that it was not true and that variations between the Nordic countries were large.

At the Nordic level the partially unemployed were divided into three groups of approximately the same size, consisting of 1) involuntary part-timers only, 2) time-related underemployed only, and 3) those with both characteristics. This division was found to exist only in Finland. Involuntary part-timers and the time-related underemployed diverged most in Denmark, where only 18% overlapped. The largest overlap was seen in Norway, where 44% were both involuntary part-timers and time-related underemployed. Compared to the other countries, in Sweden there were more persons

who were involuntary part-timers only (44%). So, defining part-time unemployment either as involuntary part-time or time-related underemployment would lead to different outcomes in different countries, if their characteristics differ.

The characteristics of involuntary part-timers also differ from those of time-related underemployed, and sometimes differently in the individual Nordic countries. The time-related underemployed are in all four countries more likely to than involuntary part-timers to work very short hours, and those underemployed do not wish to work very long working hours. Furthermore, these underemployed persons are more often very young employees than is the case with involuntary part-timers and the employed as a whole. The time-related underemployed are more often less educated than the involuntary part-timers, but the differences are not big. The difference may partly be explained by age differences. Both groups are less likely to have higher education than the employed as a whole, but there are differences between the countries. Both the time-related underemployed and involuntary part-timers are more concentrated in certain sectors than the employed as a whole. In Finland the time-related underemployed and involuntary part-timers are overrepresented in trade, food service and transportation, while in the other Nordic countries they are concentrated in public sector health, social work, education and administration.

Our results from the statistical models suggest that the probability of time-related underemployment is higher for women than for men in the four Nordic countries. The greatest probability of underemployment is among the youngest age group and the smallest probability in the oldest age group. Expectedly, low education increases the probability of underemployment. By industry, the probability of time-related underemployment is greatest in the private service sector (such as in trade and in hotels and restaurants) but also in education and in health and social work.

As regards involuntary part-time employment the probability is higher for women, the low educated and nonnatives. The probability of underemployment is highest among older age groups in all four countries except Sweden. The probability of part-time employment is higher in the same industries as the prevalence of time-related underemployment.

The fact that involuntary part-time and time-related underemployment are much more common amongst women than men is also reflected in total unemployment rates. We also assessed total unemployment as the incidence of combined full-time and partial unemployment. The group of partially unemployed persons was constructed from involuntary part-timers and from the time-related underemployed. As a rule, adding together the partially unemployed with the full-time unemployed more than doubled the unemployment rates. In Finland, however, the total unemployment rate

somewhat less than doubled. High total unemployment rates were a consequence especially of high total female partial unemployment. In full-time unemployment there are only small differences between women and men, but total unemployment rates are about two times higher among women than men.

5.4 Finally

The prevalence of part-time unemployment varies between the Nordic countries as does part-time work in general, but the phenomenon is persisting. Nor is there reason to expect that the phenomenon might disappear in the future. Some might even expect the reverse to happen if flexibilities in the labour market increase. That would present a challenge both to the development of social security and to further research. Partial unemployment is, as seen in this paper, a very complicated form of unemployment, and very gender segregated. Women still work part-time more often than men and they are more likely to take advantage of voluntary arrangements to reduce working time, but they are also more likely than men to encounter the problems of partial unemployment. However, the share of part-time employees has been increasing slightly also among men.

In the Nordic statistics (Nososco), the benefit levels of unemployment schemes and many other social security scheme are compared, but not the ways in which partial unemployment is addressed and what kind of compensation levels or work incentives the schemes produce. Part-time unemployment benefit schemes have undergone continuous reform in most countries. The key questions of the benefit schemes have concerned both reasonable compensation levels and payment periods as well the role of the benefits as an unintended wage subsidy. Contrary to the Nordic statistics, Eurostat has recently assessed unemployment more broadly than before, taking notice also of part-time unemployment and introducing a new indicator of 'underemployed part-time workers'. This conforms with the understanding of our Nordic Network concerning the importance of recognising the problems of partial unemployment, both in the recent and future labour markets.

This paper offers a basic mapping of concepts, highlights sources for information and reveals problems in statistics and survey data that complicate the identification of partial unemployment. At the same time, we hope that it contributes to a better understanding of the relevant phenomena also in a comparative perspective and, above all, offers encouragement for further research.

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Annex tables

Annex table 1. Summary of the types and numbers of the underemployed and involuntarily part-time employed persons in 2008.

UNDEREMPLOYMENT	Total	Denmark	Finland	Norway	Sweden
Total underemployment, 1000	720	130	173	137	280
% of all employed	5.8	4.6	6.8	5.5	6.1
% working 1–34 hours	79.6	65.3	48.2	64.4	75.0
% working 35–39 hours	20.4	26.3	25.2	30.7	9.7
% working at least 40 hours	14.8	8.4	26.6	4.9	15.3
Self-employed, 1000	44	8	17	5	14
- % of underemployed	6.1	5.9	10.0	3.6	5.1
% working 35+ hours	32.2	39.4	43.0	25.3	17.8
Women, 1000	402	67	87	76	173
- % of underemployed	55.8	51.1	50.2	55.2	61.7
% working 35+ hours	17.9	17.0	33.3	14.2	12.1
At least 2 jobs, 1000	64	12	13	13	27
- % of underemployed	8.9	9.3	7.4	9.4	9.5
% working 35+ hours	23.2	25.6	43.2	11.6	18.2
Part-time employees, 1000	450	79	69	89	214
- % of underemployed	62.5	60.4	39.9	64.6	76.3
Also involuntary part-timers, 1000	241	26	44	54	117
- % of underemployed	33.5	19.9	25.7	39.3	41.7
Time-related underemployment, 1000	467	85	83	88	210
% of all employed	3.7	3.0	3.3	3.5	4.6
- % of all underemployed	64.8	65.3	48.2	64.4	75.0
Women, %	70.6	64.9	69.4	73.6	72.2
Self-employed, %	6.4	5.5	11.8	4.1	5.6
At least 2 jobs, %	10.6	10.6	8.7	13.0	10.3
Also an involuntary part-timer, %	48.8	29.3	50.3	59.6	51.6
INVOLUNTARY PART-TIME EMPLOYMENT	Total	Denmark	Finland	Norway	Sweden
Total involuntary part-timers, 1000	530	83	88	85	274
% of all employed	4.3	2.9	3.5	3.4	6.0
% working 35+ hours	9.1	8.8	7.6	2.5	11.7
Self-employed, 1000	27	2	11	2	11
% of all involuntary part-timers	5.0	2.8	12.9	2.6	3.9
Women, 1000	398	63	57	69	208
% of all involuntary part-timers	79.0	78.3	74.8	83.4	79.0
Also underemployed, 1000	228	25	42	53	109
% of all involuntary part-timers	43.0	30.0	47.6	62.0	39.6
Not underemployed, 1000	302	58	46	32	165
% of all involuntary part-timers	57.0	70.0	52.4	38.0	60.4

Annex table 2. Distribution of the time-related underemployed and involuntary part-timers by usual working hours (%), and average worked and wished weekly hours by country 2008.

Weekly hours	Denmark					
	Underemp,			Involunt		
	Usual %	Usual, h	Wished, h	Usual %	Usual, h	Wished, h
Total	100	18	28	100	26	32
1-9	27	5	15	6	5	21
10-19	23	13	27	13	15	28
20-29	26	24	35	35	24	31
30-34	25	31	37	37	31	34
35 +	0	0	0	9	37	39
Weekly hours	Finland					
	Underemp,			Involunt		
	Usual %	Usual, h	Wished, h	Usual %	Usual, h	Wished, h
Total	100	20	34	100	23	34
1-9	19	4	21	10	5	24
10-19	17	14	32	15	14	31
20-29	33	23	38	37	23	34
30-34	31	31	39	31	31	36
35 +	0	0	0	8	38	40
Weekly hours	Norway					
	Underemp,			Involunt		
	Usual %	Usual, h	Wished, h	Usual %	Usual, h	Wished, h
Total	100	19	28	100	22	30
1-9	18	5	18	9	6	26
10-19	31	16	26	26	16	28
20-29	34	24	32	41	24	31
30-34	17	31	35	21	31	33
35 +	0	0	0	2	36	37
Weekly hours	Sweden					
	Underemp,			Involunt		
	Usual %	Usual, h	Wished, h	Usual %	Usual, h	Wished, h
Total	100	22	37	100	26	34
1-9	14	6	30	5	6	26
10-19	17	14	35	8	13	29
20-29	35	23	38	31	23	33
30-34	34	31	40	44	31	36
35 +	0	0	0	12	37	38
Weekly hours	Nordic, avg.					
	Underemp,			Involunt		
	Usual %	Usual, h	Wished, h	Usual %	Usual, h	Wished, h
Total	100	20	33	100	25	33
1-9	18	5	22	6	5	25
10-19	21	14	30	13	15	29
20-29	33	23	36	35	23	32
30-34	29	31	38	37	31	35
35 +	0	0	0	9	37	38

Annex table 3. Distribution of total employment, time-related underemployment and involuntary part-time employment by age and country and on average in the Nordic countries, %.

AGE	Denmark			Nordic	
	Employed, tot.	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
-24	15	44	17	33	22
25-34	21	18	25	21	23
35-44	26	16	21	19	21
45-54	23	12	22	16	20
55-64	14	8	14	9	13
65+	2	1	1	1	1
AGE	Finland			Nordic	
	Employed, tot.	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
-24	11	32	20	33	22
25-34	21	20	22	21	23
35-44	24	18	20	19	21
45-54	26	19	22	16	20
55-64	17	10	16	9	13
65+	1	1	1	1	1
AGE	Norway			Nordic	
	Employed, tot.	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
-24	14	29	17	33	22
25-34	21	19	24	21	23
35-44	25	22	24	19	21
45-54	22	20	21	16	20
55-64	16	9	12	9	13
65+	2	1	1	1	1
AGE	Sweden			Nordic	
	Employed, tot.	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
-24	11	31	25	33	22
25-34	21	23	23	21	23
35-44	25	19	20	19	21
45-54	22	16	18	16	20
55-64	19	10	12	9	13
65+	2	1	1	1	1

Annex table 4. Distribution of total employment, underemployment and involuntary part-time employment by education level and country and on average in the Nordic countries, %.

Education level	Denmark			Nordic	
	Total	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
L1-2	24	39	27	27	21
L3-4	43	39	44	52	57
L5-6	33	22	30	21	21
Education level	Finland			Nordic	
	Total	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
L1-2	17	25	22	27	21
L3-4	46	54	56	52	57
L5-6	37	21	22	21	21
Education level	Norway			Nordic	
	Total	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
L1-2	21	33	29	27	21
L3-4	45	44	51	52	57
L5-6	34	23	21	21	21
Education level	Sweden			Nordic	
	Total	Underemp.	Involunt.	Underemp.	Involunt.
Total	100	100	100	100	100
L1-2	14	20	17	27	21
L3-4	54	59	63	52	57
L5-6	32	20	19	21	21

Education levels:

L1-2	ISCED 1-2
L3-4	ISCED 3-4
L5-6	ISCED 5-6

Annex table 5. Distribution of total employment, underemployment and involuntary part-time employment by sector and country and on average in the Nordic countries, %.

Sector	Denmark			Nordic	
Nace1d	Total	Underemp.	Involunt.	Underemp.	Involunt.
Agriculture, forestry and fishing	100	100	100	100	100
Manufacturing and construction	3	1	1	1	2
Trade, transportation, food service	23	7	5	5	4
Public admin., educ., health, social work	23	31	15	32	28
Professional, scientific, administration	32	40	63	41	49
Other classified	8	9	7	9	8
Other services	8	4	3	3	2
Sector	Finland			Nordic	
Nace1d	Total	Underemp.	Involunt.	Underemp.	Involunt.
Agriculture, forestry and fishing	100	100	100	100	100
Manufacturing and construction	4	3	7	1	2
Trade, transportation, food service	25	7	5	5	4
Public admin., educ., health, social work	22	34	37	32	28
Professional, scientific, administration	26	28	26	41	49
Other classified	10	11	10	9	8
Other services	7	3	2	3	2
Sector	Norway			Nordic	
Nace1d	Total	Underemp.	Involunt.	Underemp.	Involunt.
Agriculture, forestry and fishing	100	100	100	100	100
Manufacturing and construction	3	1	0	1	2
Trade, transportation, food service	22	5	4	5	4
Public admin., educ., health, social work	23	33	26	32	28
Professional, scientific, administration	34	49	59	41	49
Other classified	9	6	6	9	8
Other services	7	2	1	3	2
Sector	Sweden			Nordic	
Nace1d	Total	Underemp.	Involunt.	Underemp.	Involunt.
Agriculture, forestry and fishing	100	100	100	100	100
Manufacturing and construction	2	1	1	1	2
Trade, transportation, food service	21	5	4	5	4
Public admin., educ., health, social work	21	31	30	32	28
Professional, scientific, administration	32	43	49	41	49
Other classified	12	10	8	9	8
Other services	7	3	2	3	2

Annex table 6. Probit estimates of the probability of time-related underemployment for females.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Native	-0.0228 (0.0049)	-0.0384*** (0.009)	-0.0216 (0.0242)	-0.0363* (0.0199)	-0.0155*** (0.0031)
Age:					
27-56	-0.0214*** (0.0029)	-0.0525*** (0.007)	-0.0179*** (0.0089)	0.0116 (0.009)	-0.0155*** (0.031)
57-66	-0.0447*** (0.0032)	-0.0639*** (0.007)	-0.0331*** (0.009)	-0.0228** (0.0112)	-0.0483*** (0.004)
Education:					
Low	0.0360*** (0.0024)	0.0124*** (0.0037)	0.0311*** (0.0083)	0.0617*** (0.009)	0.0453*** (0.0034)
Secondary	0.0334*** (0.0018)	0.0072** (0.0032)	0.0263*** (0.0064)	0.0544*** (0.008)	0.0418*** (0.0023)
Married	-0.0059*** (0.0016)	-0.0138*** (0.0032)	-0.0121*** (0.0056)	-0.0100 (0.0069)	0.0021 (0.0021)
Temporary	0.1066*** (0.0032)	0.0641*** (0.0064)	0.0699*** (0.0093)	0.0860*** (0.0146)	0.0952*** (0.0024)
Self-employed	-0.0517*** (0.0030)	-0.0420*** (0.0054)	-0.0411*** (0.0081)	-0.0482*** (0.0154)	-0.0983*** (0.0012)
Firm size:					
10-49	-0.0160*** (0.0027)	-0.0085 (0.0051)	-0.0319*** (0.008)	-0.0188* (0.0057)	-0.0149*** (0.0031)
50-200	-0.0232*** (0.0024)	-0.0173*** (0.0046)	-0.0344*** (0.007)	-0.0094 (0.0103)	-0.0255*** (0.0028)
Over 200	-0.0370*** (0.0021)	-0.0328** (0.0039)	-0.0452*** (0.0068)	-0.0136 (0.0092)	-0.0506*** (0.00257)
Industry:					
Agriculture	0.0016 (0.0097)	-0.0178 (0.0171)	0.0037* (0.0218)	-0.0829* (0.0491)	-0.0133** (0.0062)
Construction	0.0047 (0.0085)	-0.0069 (0.0151)	0.0202 (0.0276)	-0.0606 (0.0397)	0.0198* (0.0113)
Transport	0.0295*** (0.0056)	0.0258** (0.0102)	0.0399** (0.0175)	0.0019 (0.0217)	0.0338*** (0.007)
Trade	0.0564*** (0.0037)	0.0258*** (0.0062)	0.0603*** (0.0123)	0.0244* (0.0135)	0.0722*** (0.0052)
Hotels and restaurants	0.0534*** (0.0046)	0.0420*** (0.0083)	0.0314*** (0.0145)	0.0431** (0.0177)	0.0622*** (0.0064)
Business services	0.0062 (0.0039)	0.0059 (0.0066)	0.0084 (0.0133)	-0.0241 (0.0155)	0.0117* (0.0054)
Public administration	-0.0059 (0.0050)	-0.0048 (0.0085)	-0.0181 (0.0216)	-0.0443 (0.0216)	0.0010 (0.0069)
Education	0.0482*** (0.0037)	0.0336*** (0.0067)	0.0522*** (0.0134)	0.0228 (0.0147)	0.0565*** (0.0052)
Health and social work	0.0507*** (0.0034)	0.0391*** (0.0055)	0.0062 (0.0123)	0.0348*** (0.0118)	0.0629*** (0.0048)
Other	0.0438*** (0.0044)	0.0346*** (0.0074)	0.0484*** (0.0139)	0.0166 (0.0202)	0.0496*** (0.0062)
Number of obs	103,834	27,193	6,507	12,765	63,878
Log likelihood	-22838.455	-5285.233	-1084.8087	-1471.8873	-14775.153

Annex table 7. Probit estimates of the probability of time-related underemployment for males.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Native	-0.0206*** (0.0031)	-0.0218*** (0.0061)	-0.0187 (0.0162)	-0.0082 (0.0096)	-0.0201*** (0.0039)
Age:					
27-56	-0.0260*** (0.0019)	-0.0455*** (0.005)	-0.0187*** (0.0065)	-0.0294*** (0.008)	-0.0163*** (0.0020)
57-66	-0.0289*** (0.0021)	-0.0490*** (0.0053)	-0.0172** (0.008)	-0.0283*** (0.0091)	-0.0196*** (0.002)
Education:					
Low	0.00420*** (0.0013)	-0.0015* (0.0027)	0.0107* (0.073)	0.0040 (0.0051)	0.0064*** (0.0018)
Secondary	0.0015 (0.0011)	-0.0047 (0.0024)	0.0166* (0.0094)	-0.0006 (0.004)	0.0042*** (0.0023)
Married	-0.0090*** (0.0009)	-0.0181*** (0.0022)	-0.0103*** (0.0037)	-0.008** (0.0039)	-0.0055*** (0.0021)
Temporary	0.0421*** (0.0021)	0.0128*** (0.0033)	0.0230*** (0.0068)	0.0257*** (0.0084)	0.0596*** (0.0031)
Self-employed	-0.0141*** (0.0013)	-0.0167*** (0.0027)	-0.0108* (0.0058)	-0.0103 (0.00824)	-0.0135*** (0.0016)
Firm size:					
10-49	-0.0062*** (0.0016)	-0.0049 (0.0034)	-0.0136*** (0.005)	0.0043 (0.0060)	-0.00756*** (0.0020)
50-200	-0.0055*** (0.0014)	-0.0036*** (0.0031)	-0.0002 (0.0054)	0.0004 (0.005)	-0.0077*** (0.0018)
Over 200	-0.0012*** (0.0012)	-0.0110** (0.0027)	-0.0120*** (0.0044)	-0.006 (0.0045)	-0.0135*** (0.0016)
Industry:					
Agriculture	0.0080*** (0.0029)	-0.0002 (0.0065)	0.0166* (0.0094)	0.0150 (0.0104)	0.0085* (0.0036)
Construction	-0.0168*** (0.0024)	-0.0201*** (0.0053)	-0.0084 (0.0088)	-0.0051 (0.0090)	-0.0174*** (0.0031)
Transport	0.0194*** (0.0018)	0.01107** (0.0045)	0.0201** (0.0069)	0.0247*** (0.0217)	0.0197*** (0.0021)
Trade	0.0165*** (0.0015)	0.01107*** (0.0045)	0.0160** (0.0066)	0.0169** (0.0072)	0.0163*** (0.0019)
Hotels and restaurants	0.0357*** (0.0021)	0.0382*** (0.0045)	0.0336*** (0.0094)	0.0364*** (0.0099)	0.0318*** (0.0026)
Business services	0.0082 (0.0016)	0.0120*** (0.0039)	0.0199*** (0.0063)	0.0179** (0.0074)	0.0038* (0.0020)
Public administration	0.0059** (0.0026)	0.0041 (0.0055)	-	0.0082 (0.0111)	0.0059* (0.0032)
Education	0.0255** (0.0020)	0.0302*** (0.0040)	0.0393*** (0.0079)	0.0339*** (0.008)	0.0200*** (0.0025)
Health and social work	0.0333*** (0.0018)	0.0351*** (0.0039)	0.0348*** (0.0083)	0.0376*** (0.0079)	0.0305*** (0.0022)
Other	0.0227*** (0.0021)	0.0300*** (0.0044)	0.0277*** (0.0079)	0.0316 (0.0101)	0.0162*** (0.0026)
Number of obs	102,926	24,666	6,096	6,509	65,393
Log likelihood	-8679.8736	-5285.233	-491.33602	-543.61447	-5406.2428

Annex table 8. Probit estimates of the probability of involuntary part-time employment for females.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Native	-0.0337*** (0.0055)	-0.0477*** (0.009)	-0.0303 (0.0254)	-0.0416** (0.0099)	-0.0346*** (0.074)
Age:					
27-56	-0.0034 (0.0028)	0.0192*** (0.0041)	0.0197*** (0.0062)	0.0348*** (0.0073)	-0.0281*** (0.0044)
57-66	-0.0157*** (0.0032)	0.0194*** (0.0048)	0.0204* (0.0088)	0.0188*** (0.0096)	-0.0487*** (0.0049)
Education:					
Low	0.0496*** (0.0026)	0.0262*** (0.0036)	0.0279*** (0.008)	0.0723*** (0.0092)	0.0731*** (0.0039)
Secondary	0.0589*** (0.0019)	0.0220*** (0.0032)	0.0344*** (0.0063)	0.0663*** (0.0078)	0.0720*** (0.0027)
Married	-0.0056*** (0.0017)	-0.0090*** (0.0031)	-0.0129** (0.0055)	-0.0117** (0.0064)	0.0025 (0.0023)
Temporary	0.0852*** (0.0032)	0.0744*** (0.0068)	0.0892*** (0.0105)	0.0655*** (0.0137)	0.0766*** (0.0040)
Self-employed	-0.0715*** (0.0021)	-0.0471*** (0.0041)	-0.0306*** (0.0102)	-0.0493*** (0.0115)	-0.0896*** (0.0022)
Firm size:					
10-49	-0.0018*** (0.0029)	-0.0104* (0.0052)	-0.0231*** (0.0085)	-0.0141 (0.0094)	-0.0197*** (0.0040)
50-200	-0.03116*** (0.0025)	-0.0218*** (0.0046)	-0.0312*** (0.0074)	-0.0037 (0.0095)	-0.0369*** (0.0034)
Over 200	-0.0440** (0.0023)	-0.0386** (0.0040)	-0.0498*** (0.0065)	-0.0054 (0.0086)	-0.0493*** (0.0031)
Industry:					
Agriculture	0.0167 (0.0107)	-0.0048* (0.0266)	-0.00198 (0.0273)	-0.0104 (0.0312)	0.0518** (0.0149)
Construction	0.0429*** (0.0084)	0.0436*** (0.0126)	0.0249 (0.0269)	-0.0457 (0.0348)	0.0542*** (0.0118)
Transport	0.0441*** (0.0062)	0.0149 (0.0124)	0.0433** (0.0176)	0.0077 (0.019)	0.0543*** (0.0084)
Trade	0.0800*** (0.0042)	0.0284*** (0.007)	0.0752*** (0.0125)	0.0216* (0.0126)	0.1051*** (0.0059)
Hotels and restaurants	0.0737*** (0.0065)	0.0409*** (0.0101)	0.0375** (0.0144)	0.0126 (0.0180)	0.0915** (0.0072)
Business services	0.0065 (0.0045)	0.0147* (0.0075)	0.0172*** (0.0132)	-0.0342** (0.0151)	0.0057 (0.0063)
Public administration	-0.0038 (0.0058)	0.0058 (0.0092)	-0.0339 (0.0241)	-0.0343* (0.0196)	0.0011*** (0.0080)
Education	0.0787*** (0.0022)	0.0653*** (0.0072)	0.0359** (0.0139)	0.0340** (0.0133)	0.0888*** (0.0059)
Health + social	0.0862*** (0.0038)	0.0754** (0.0063)	-0.0011 (0.0126)	0.0339** (0.0109)	0.1031*** (0.0055)
Other	0.0597*** (0.0051)	0.0496*** (0.0082)	0.0406*** (0.0145)	-0.0154 (0.0221)	0.0712*** (0.0071)
Number of obs	103,834	27,193	6,507	6,256	63,878
Log likelihood	-25626.912	-517.3778	-1084.6507	-1322.4969	-17509.981

Annex table 9. Probit estimates of the probability of involuntary part-time employment for males.

	All	Denmark	Finland	Norway	Sweden
	Marginal effect	Marginal effect	Marginal effect	Marginal effect	Marginal effect
Native	-0.0196*** (0.0029)	-0.0309*** (0.0062)	-0.0173 (0.0146)	-0.0026 (0.0082)	-0.0184*** (0.038)
Age:					
27-56	-0.0115*** (0.0028)	-0.0049* (0.0025)	0.0005 (0.0039)	-0.0137** (0.0061)	-0.0182*** (0.0022)
57-66	-0.0156*** (0.0016)	-0.0058*** (0.0028)	0.0242 (0.0059)	-0.0097 (0.0080)	-0.0250*** (0.0024)
Education:					
Low	-0.0004 (0.0013)	-0.0049** (0.0021)	0.0083* (0.0050)	0.0031 (0.0048)	0.0032*** (0.0018)
Secondary	0.0035*** (0.0010)	-0.0004 (0.0016)	0.0071* (0.0042)	0.0038 (0.0041)	0.0043*** (0.0013)
Married	-0.0081*** (0.0008)	-0.0083*** (0.0016)	-0.0086** (0.0031)	-0.009** (0.0034)	-0.0075*** (0.0011)
Temporary	0.0289*** (0.0018)	0.0198*** (0.0037)	0.0294*** (0.0074)	0.0140*** (0.0074)	0.0302*** (0.0022)
Self-employed	-0.0141*** (0.0009)	-0.0116*** (0.0013)	-0.0129*** (0.0031)	-	-0.0160*** (0.0012)
Firm size:					
10-49	-0.0007*** (0.0015)	-0.0022 (0.0031)	-0.0066 (0.0053)	-0.00009 (0.0051)	-0.0089*** (0.0020)
50-200	-0.0106*** (0.0013)	-0.0064** (0.0026)	-0.0126*** (0.0041)	0.0050 (0.0052)	-0.0120*** (0.0018)
Over 200	-0.0164** (0.0012)	-0.0115*** (0.0023)	-0.0131*** (0.0040)	-0.0031 (0.0040)	-0.0185*** (0.0016)
Industry:					
Agriculture	0.0105*** (0.0029)	0.0042 (0.0051)	0.0257*** (0.0084)	-	0.0127** (0.0042)
Construction	-0.0183*** (0.0032)	-0.0239*** (0.0081)	0.0548 (0.0078)	-	-0.0208*** (0.0046)
Transport	0.0247*** (0.0019)	0.0118*** (0.0034)	0.0265*** (0.007)	0.0161 (0.067)	0.0304*** (0.0025)
Trade	0.0215*** (0.0017)	0.0037*** (0.0031)	0.0221*** (0.0068)	0.0102* (0.0062)	0.0292*** (0.0023)
Hotels and restaurants	0.0368*** (0.0021)	0.0205*** (0.0038)	0.0457*** (0.0084)	0.0177 (0.009)	0.0432** (0.0029)
Business services	0.0133*** (0.0017)	0.0071** (0.0030)	0.0161*** (0.0069)	0.0112* (0.0064)	0.0159*** (0.0023)
Public administration	0.0171*** (0.0024)	0.0056 (0.0042)	0.0065 (0.0132)	-	0.0249*** (0.0031)
Education	0.0348*** (0.0020)	0.0237*** (0.0031)	0.0336*** (0.0139)	0.0201** (0.0075)	0.0412*** (0.0027)
Health + social	0.0411*** (0.0019)	0.0294*** (0.003)	0.0362*** (0.0080)	0.0252*** (0.0068)	0.0480*** (0.0026)
Other	0.0302*** (0.0021)	0.0245*** (0.0037)	0.0289*** (0.0074)	0.0171* (0.009)	0.0338*** (0.0028)
Number of obs	102,926	24,666	6,358	4,904	65,393
Log likelihood	-7342.4	-1344.5665	-410.65401	-289.87785	-5184.6726