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Cross-border commuting in the Nordic countries

1. Introduction

At the Nordic Seminar on Labour Statistics in Sweden in 2000, results were presented on cross-border commuting in the Öresund area between Sweden and Denmark. Over the last five years, the statistics have undergone considerable changes. Information is now available for the Öresund area during the period 1997-2003. It was particularly important to present commuting statistics before the opening of the Öresund bridge. Between 1999 and 2001, commuting in the Öresund area increased by over fifty per cent.

A major project was carried out during 2004-2005 on behalf of the Nordic Council of Ministers. Cross-border commuting in the larger Nordic countries was presented in a report "Nordic commuter map 2001". Results of this project showed that 25 000 persons worked in another Nordic country, and that Swedes accounted for three fourths of this commuting. More than half all commuting was to Norway, and it was mainly Swedes who sought work in Norway. Results are found in a main report and four sub-reports on the website of the Nordic Council.

http://www.norden.org/pub/sk/index.asp?subject=RegPol

The results have also been published in Statistics Sweden's "Background facts on labour market and education statistics", 2005:02 and 2005:03.

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Table 1. Ranking of work exchange among the Nordic countries, 2001

Flows of Labour force	Share off of the total number in the Nordic countries	
	Income earners	Cross-border communters
1. Sweden to Norway	50,9	52,5
2. Sweden to Denmark	12,7	18,5
3. Finland to Sweden	11,4	9,9
4. Sweden to Finland	7,6	6,3
5. Norway to Sweden	7,7	5,1
6. Norway to Denmark	4,1	3,1
7. Denmark to Sweden	3,1	2,6
8. Denmark to Norway	2,6	1,8
Summa	100	100
9. Norway to Finland	measurements are not accomplished	
10. Finland to Norway	measurements are not accomplished	
11. Denmark to Finland	measurements are not accomplished	
12. Finland to Denmark	measurements are not accomplished	

Reasons for commuting to work include lack of work in one's home country, more interesting employment, higher pay, marriage, and enterprises that move activities to another country. Much has yet to be studied in this area.

Register-based employment statistics in Sweden, Denmark, Norway and Finland are built up in a similar way. In addition to access to microdata and unique identities which allow follow-up of people over time, the registers also allow for exchange of information to describe labour market integration on the Nordic labour market. This applies to cases when one takes a job in the neighbouring country without moving there. The method is based on persons who are registered with the tax authorities or other central functions with income in the country of work, but who are not included in the population register of that country. These persons are then searched for in population registers of the neighbouring countries. By doing so, we are able to identity a group of people who live in one country and have income from employment in another. By using particular criteria for this group, it is possible to define the number of persons who are cross-border commuters. The method is dependent on a well-built register system with standardised identities. In the Nordic countries, the date of birth in the civic registration number allows us this possibility.

2. The method

The method to measure cross-border commuting has not changed during the last seven years. It can be broken down into four stages:

Stage 1. The Nordic countries have well-developed administrative systems for population and taxation records. These systems use unique civic registration numbers to identify people. The civic registration number is formed in different ways, and is not coordinated among the countries, so

matching is not easy to do. However, there is information on date of birth (a part of the civic registration number), sex and name in the registers of the countries. Identification work is started in the country of work by sending data to the country of residence. This includes persons who have had income in the country of work but who are not included in the population registers there. Run number, date of birth, sex and name are sent to see how many live in the country of residence.

Stage 2. Date of birth and name are matched in the country of residence with the country's population register to identify those who are registered there. By doing so we find out how many people in the country of residence have had income in the country of work. A data set with demographic information and information on any employment in the home country is then produced for these people. This data set is then sent back to the country of work with a run number as its identity.

Stage 3. When the material is then returned to the country of work, it is supplemented with data about the person's work in the country of work. It is then possible to find out in which country the person has carried out his/her main work. From this information, we can determine who should be classified as cross-border commuters. When determining which persons are border-commuters, a simpler model is used compared to the regular national statistics. The material can now be used to produce statistics on cross-border commuting. In addition, the information can be integrated and supplemented to the national employment statistics, thereby improving the quality of the statistics.

Stage 4. When the statistics in stage 3 are completed they are sent back to the country of residence. The purpose of this delivery is to make it possible to supplement the national statistics on night-time population with information on persons who are employed abroad. By doing so, we can report a more justifiable proportion of population gainfully employed in the country of residence.

However, no adjustments are now being made for persons who are classified as commuters in the regular statistics. In the future, an integration of information on commuters can be done without any particular difficulties.

The method has been successfully used in the exchange between Denmark, Norway and Sweden, while exchange work with Finland has shown to be more complicated. However, there is a Nordic commuter map, NPK2001 for 2001. Reports of commuting flows between Denmark, Norway and Sweden are complete, while the relation with Finland is only reported with Sweden. Development work to increase use of Statistics Finland's statistics remains to be done. Information regarding the workingplace on Swedish commuters in Finland is lacking, and consequently, Swedish cross-border commuting to Finland cannot be regionally broken down in Finland.

3. Legislation prevents exchange of data

Clearance for release from a secrecy perspective has occurred at each statistical authority or by a specially assigned unit in the country. When making this clearance, the value of obtaining a statistical picture of work exchange between the Nordic countries and the value of improved national employment statistics in each country is weighed against the fact that the material is released to another Nordic statistical authority. As a result of tougher secrecy regulations, Statistics Finland is not allowed to deliver data on individuals across borders, regardless if this data is identifiable by run number only or by name and date of birth. When Finnish data is exchanged with Norway and Sweden, the necessary matching material of Norway and Sweden is taken to Statistics Finland by secure methods from a secrecy perspective, and processing is done there on a separate laptop computer. The material that has been used in Finland and the complete information on individuals according to the exchange model is not allowed to leave Statistics Finland. Individual information which completely lacks identity can then be delivered abroad by special decision from Statistics Finland. However, it is never possible to revise or supplement this material with other variables tied to individuals. Due to the above reasons, it is not possible to exchange material between Denmark and Finland, since Denmark only approves exchange that occurs on equal terms, i.e. a symmetrical exchange. At the same time, we believe that the exchange of labour force between Denmark and Finland is the least extensive in the Nordic countries.

4. Income earners - commuters

The main purpose of the project is to calculate the number of commuters across national borders, or cross-border commuters, as we call them. The basic material produced shows that, in addition to those who are classified as cross-border commuters, there is still a large number of people who usually have small incomes in the neighbouring country. The number of income earners is a good indicator of the scope of cooperation between countries.

Facts

Income earners in the survey consist of persons who have received pay in 2002 from an employer in the neighbouring country. The report does not include persons who work in a company from the home country and also receive their salary from there, even if they work in the neighbouring country. Self-employed persons who work in the neighbouring country in their own firms are also not included in the report.
Cross-border commuters are those income earners as defined above who have their main income from work in the neighbouring country during a certain year during the month of November, and have thereby reached a certain income level. Finland is the exception, with December as the measurement month. Earned income, if any, of the person in the home country for the current calendar year, must not exceed the income in the country of work.

5. Moves

The person's country of residence is the country where he/she is registered on 31 December. This means that persons who moved during the year and got a job at the same time in the new country of residence can be classified as cross-border commuters or income earners in the other country. This occurs when there is information about income during the time the person lived in the old country of residence. Of the 13 343 Swedes who, according to statistics, commuted to Norway during 2001, about 13 per cent had moved to Sweden that same year but only 4 per cent had an income in Sweden. The move was therefore only in a small extent due to a new job in Sweden. The person probably still had his/her old job in Norway, and became thus a new cross-border commuter who moved to Sweden for other reasons. The statistics would therefore only have a marginal effect if we considered the fact that persons moved to Sweden during the year. In addition, no consideration is taken in the regular national statistics to moves over municipality borders during the year.

6. Regional effects of cross-border commuting

Closeness to the national border and the possibility to work in the neighbouring country are highly important factors for a small number of Swedish municipalities. All municipalities except Haparanda in Table 2 are near the Norwegian border. In Eda municipality, 14 per cent of gainfully employed persons commuted to Norway, and 19 per cent of all incomes were earned in Norway. The percentage of the population gainfully employed aged 20-64 in Eda would increase from 65 to 75 per cent if commuters to Norway were included. The basic rule in the EU is that people are taxed in the country of employment. In contrast to the Öresund region, where Sweden is to a certain extent compensated for loss of taxes, there is no national agreement for compensation for loss of taxes between Norway and Sweden. In this case, no analysis has been done to find out how tax income of municipalities are affected. Moreover, in relation to Norway, people who live in a border municipality and work in a border municipality in the neighbouring country are taxed in the country of residence. However, a large share of the Swedish cross-border commuters do not commute between the bordering municipalities. It is also apparent that changes in employment statistics as a result of cross-border commuting would affect calculations in the Swedish municipal tax equalisation system, and thereby the income for the Swedish municipalities.

Table 2. Number of Swedish commuters and their amounts of pay in some border municipalities with considerable cross-border commuting, 2001

Municipalities	Number of employed Totally	of that in Sweden (RAMS)	in the rest of the Nordic countries	The share of employment in the rest of the Nordic countries (%)	Amount of pay Totally	of that in Sweden (RAMS)	in the rest of the Nordic countries	The share of amount of pay in the rest of the Nordic countries (%)
Eda	3 746	3 224	522	13,9	704	571	133	18,9
Årjäng	4 432	3 941	491	11,1	808	680	128	15,9
Haparanda	3 669	3 307	362	9,9	666	587	79	11,8
Strömstad	5 338	4 813	525	9,8	1 005	843	162	16,1
Torsby	5 647	5 354	293	5,2	1 032	959	73	7,1
Dals-Ed	2 220	2 107	113	5,1	394	364	30	7,6

7. The future

Statistics on commuting across borders have been produced on commission and in the form of a project. In August of this year, Statistics Sweden submitted a new application to the Nordic Council of Ministers. This application refers to different development projects within the area, and is dependent on cooperation from the statistical authorities in Norway, Denmark and Finland. There are clear requirements from users for quicker reporting of results. Therefore we would like to try to publish a commuting indicator with preliminary results for a maximum of nine months after the end of the measurement year. With normal production, we are waiting for completion of the regular register-based employment statistics, implying that cross-border commuter statistics can be provided after 16 - 18 months.

To be able to use those investments in skills and a cooperation network, a continual and preferably yearly production of commuter statistics should be done. In turn, this requires basic financing for activities. At this time, no such financing is available.