

Working Paper No. 3  
ENGLISH ONLY

**STATISTICAL COMMISSION and  
ECONOMIC COMMISSION FOR EUROPE**

**STATISTICAL OFFICE OF THE  
EUROPEAN COMMUNITIES (EUROSTAT)**

**CONFERENCE OF EUROPEAN STATISTICIANS**

Joint UNECE-EUROSTAT Work Session on Registers and  
Administrative Records for Social and Demographic Statistics  
(Geneva, 9-11 December 2002)

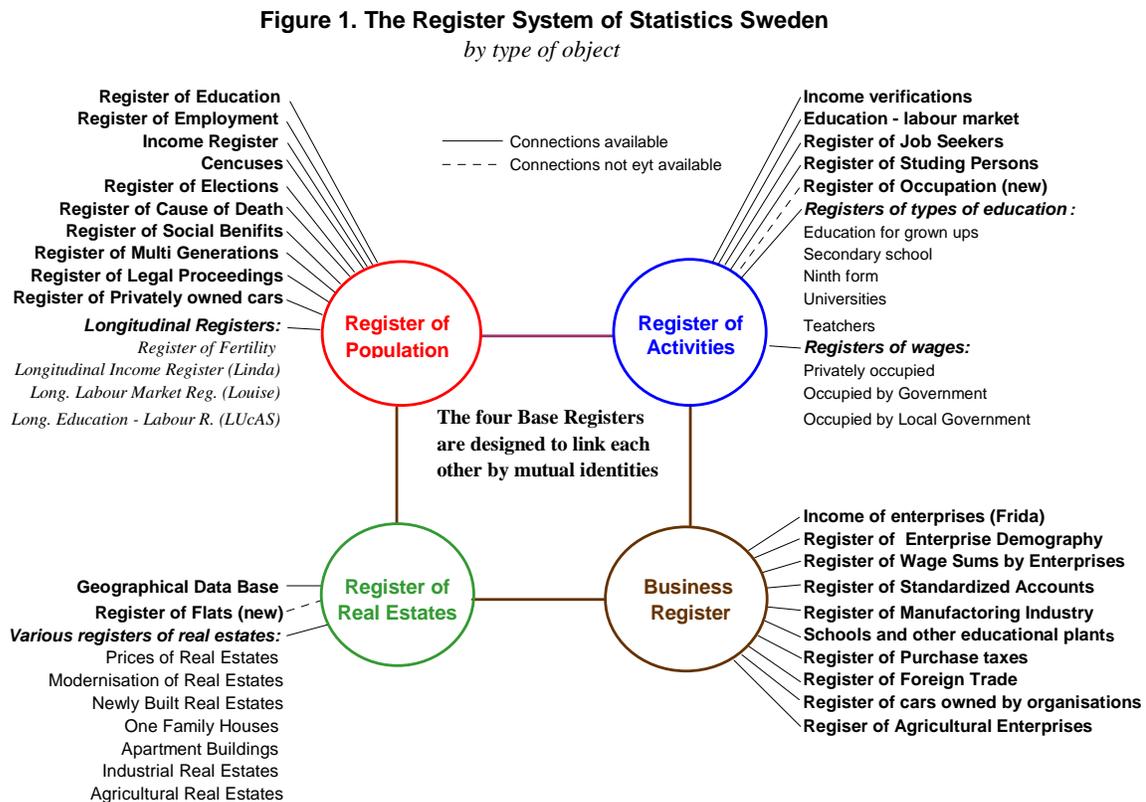
**Invited paper**

**MATCHING EMPLOYER/EMPLOYEE STATISTICS:  
MICRODATA IN THE SWEDISH REGISTER SYSTEM**

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## I. THE SWEDISH REGISTER SYSTEM

1. At Statistics Sweden a coherent system of registers is used. It consists of four basic registers, each one containing one of the basic objects: persons, activities (including jobs), enterprises and real estates. Through the use of standardized and consistent identities, the basic registers can be linked to each other. In turn, there are additional registers connected to each of the basic registers that through the system can be linked to any source containing identities. Figure 1 shows the basic set up of the Swedish Register System.



2. The use of administrative registers, being one of the obvious sources in this system, increased in the mid '80's when alternatives to the traditional census using household surveys were investigated. In labour market statistics the use of administrative sources was first initiated in 1985.

3. There are several advantages to using administrative registers, including decreasing the burden of response on informants, reduction of non-response, and significantly lower costs compared to surveys covering all objects. Also, there are huge possibilities to obtain information from other parts of the register system, i.e. many combinations of variables.

4. There are also some drawbacks, the major one being that administrative registers are produced for administrative purposes. In order to transform data into statistical registers, information has to be controlled, completed and corrected. Methodological work, including deriving new variables and handling missing values, must also be performed. In addition, there are few or no possibilities to contact informants and information is restricted to what already exists in the administrative sources. Statistical institutes seldom have the opportunity to influence the content of the ingoing registers.

## II. LABOUR STATISTICS BASED ON ADMINISTRATIVE SOURCES

5. The labour market section of the register system contains several registers and uses data from many parts of the system. Objects include persons, activities (jobs), enterprises and establishments. Registers are stored as detached, separate modules which can easily be connected through the standardized identities. Furthermore, a number of integrated databases have been prepared with data already merged for easy and cheap use.

6. The *register of statements of income* is the base of the labour market register system. The register is created by the Swedish National Tax Board and contains information about all jobs being performed during a year. The object being jobs, rather than individuals, means that a person can appear several times if he or she holds more than one job or has changed jobs during the year. There are few variables in the register, but since it contains the identity of the person holding the job as well as the identity of the enterprise and the identity of the establishment, it functions as a key, making it possible to connect data from registers with individual, enterprise and establishment objects.

7. With the register of statements of income as a core, the *register of jobs, studies and other activities* (or *register of activities* for short) is created. As seen in Figure 1, the register of activities is one of the four basic registers in the Swedish Register System. It also functions as an integrated register, collecting data from several other parts of the register system. The main purpose of the register is to measure activities from which persons derive their means of subsistence and collect data on these activities. Jobs are the most important activities, and the register is mostly focused on that, especially the possibility of connecting data on the employees (individuals) with the employers (enterprises and establishments). But data on other activities, such as studies, unemployment, early retirement, parental leave, etc., are also included in the register. The object in the register is activities, thus every person can appear several times if they have more than one activity during a year.

8. For most applications when presenting statistics on the labour market the *employment register* is used. The employment register is derived from the register of activities. As opposed to the register of activities, the object is individuals, and aims at measuring the most important job in November every year for the entire population of Sweden. It is an integrated register, prepared for easy use and containing several variables for both the individual and for the enterprise and establishment where he or she works.

## III. APPLICATIONS OF THE REGISTER OF ACTIVITIES IN SOCIAL AND DEMOGRAPHIC STATISTICS

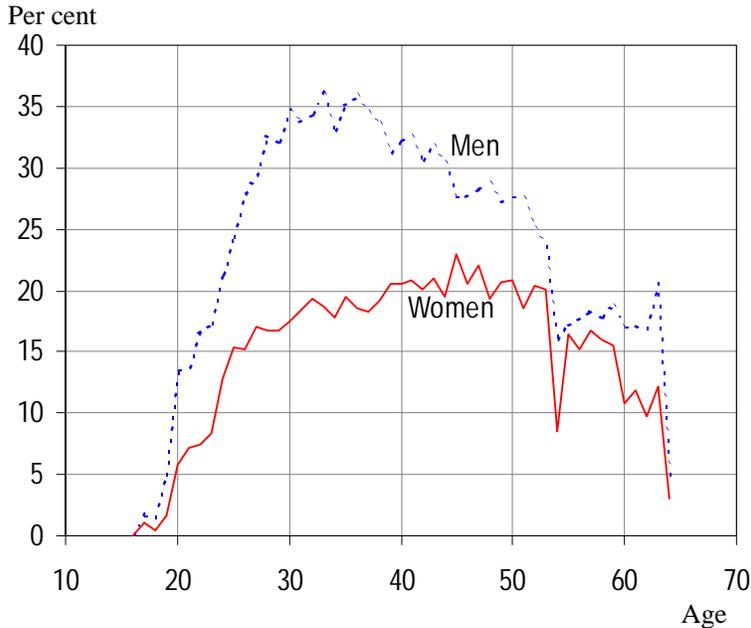
9. Besides the advantage of being able to present statistics on a detailed level, administrative registers as sources also provide the opportunity to follow objects over a long period of time. Combining data on employment with data on other forms of activities allows flows within, and in and out of, the labour market to be studied with great precision.

10. A few examples: exiting and entering the labour market occur in all ages, but for different reasons. Recruitment is high among the young when they start their first jobs and resignation rates are high among the older when they retire permanently. But resignations in other age spans are also common, either voluntarily, when people leave their job for parental leave or studies, or involuntarily, when people are forced into unemployment. By combining register data from the employment perspective and obtaining information on those who leave their jobs, with register data from the individual perspective on what their main non-job activities are, it is possible to determine the exact composition of these flows.

11. Furthermore, linking to population registers makes it possible to break down data on demographical variables, such as age, sex, region, country of birth, family situation, etc. Also, by linking recruitments and resignations to enterprise and establishment data it is possible to study where the flows occur, regarding enterprise size, industry and location. Figure 2 provides an example, showing the share of all resignations between 1999 and 2000 going to unemployment, distributed by age and sex. The data is produced by

combining information from the employment register to determine resignations, demographic data for age and sex and information from the register of job seekers to determine unemployment, all of which are merged in the register of activities.

**Figure 2. Share in per cent of all resignations going to unemployment between 1999 and 2000, by age and sex**



12. The applications described above are just a few examples of what can be achieved by using the register system in general and the possibilities of combining employer/employee statistics through the register of activities in particular. In theory, all registers and other sources using the same set of identities for the objects in the register system can be linked with each other. At the moment of writing, a project is underway at Statistics Sweden to work with the remaining problems in order to obtain a register system that works more or less perfectly in practice. The objective is to create a system where all registers within the system can be linked without any matching problems due to insufficient identities, etc..

#### IV. CONCLUSIONS

13. Using administrative sources to produce statistical registers is advantageous in several respects and is in many ways a more efficient method of producing statistics than are traditional census surveys.

14. By keeping sets of standardized and consistent identities for all relevant objects, it is possible in the Swedish Register System to link different registers and thus add value to the separate sources.

15. In particular, combining employer (enterprises) data with employee (individuals) data gives new possibilities for demographic and social perspectives on the labour market. Flows in the labour market, such as recruitments and resignations, is one example of how the value of traditional labour statistics can be increased by the use of register data from administrative sources.

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