



# Technical Papers

Number 3  
September 1979

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## System of Identity Numbers in The Swedish Population Register

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# System of Identity Numbers In The Swedish Population Register

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## FOREWORD

A personal identity number system is an essential feature of any kind of a large scale registry. A system of unique universal numbers facilitates access to various data sources making feasible scientific and administrative uses of data not otherwise possible.

This description of a personal identity numbering system in an operating population register is timely for countries considering the establishment of identity numbers. For others, the technical and administrative problems make for interesting study.

Identity numbers, especially universal numbers, immediately give rise to concern about invasion of privacy of individuals. This was a matter of national concern in Sweden which led to the establishment of the Data Inspection Board. This Board authorizes the establishment and maintenance of a data bank about individuals, and issues directives on the management and maintenance of data to obviate any undue invasion of privacy of individuals.

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# System of Identity Numbers In The Swedish Population Register

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Sweden has about 8,000,000 inhabitants in an area of 450,000 km<sup>2</sup> and a population density of only 18 inhabitants per km<sup>2</sup>. Political power is vested in the Parliament and the Government. The administrative functions of the Government are largely delegated to central administrative boards, each representing different areas of competence. One such authority, the National Tax Board, is concerned with population registration.

For administrative purposes, Sweden is divided into 24 counties. In turn, these counties are divided into some 227 municipalities ("communes"), each of which is headed by an elected council.

## REGISTRATION

### Basic registration

Sweden has had a system of current population registration for the past 300 years or so. The vicar of each parish is responsible for registration and serves as the chief of the local Civic Registration Office. Besides his clerical tasks, the vicar acts as the census officer. There are some 2500 parishes in Sweden. Population registration is an official governmental function within the parish. This dual responsibility is due to historic reasons, but a recent official investigation resulted in a recommendation that the task of population registration be given to authorities outside the State Church.

The basic record for each person is kept at the parish in a separate document and includes, *e.g.*, full name, date and place of birth, nationality, parents' names, civil status, name of husband or wife, and children's names. Such a personal record is established for every child born and for every immigrant.<sup>1</sup> If a person changes his residence, he is required to report it within two weeks. The vicar notes this change. If the person's record is on file in another parish, a request is made for the transfer of the document. In this way, the record follows each person from birth to death.

### County register

Since 1947, each county administration has kept a register of the population living within its

borders. These county registers, which were originally kept on metal plates, have been on magnetic tape since 1967 (personal data tape). The county administrations (County Data Unit) have also set up two registers consisting of personal data cards, one of them arranged by personal identity numbers and the other in alphabetical order according to the surname and the first name.

The county registers contain the individual's name, personal identity number (which includes date of birth), place of birth, parochial registration locality and address. The data registered also include information on marital status, the date of the most recent change in marital status, the citizenship of non-Swedish citizens, any notification of legal incapacity, and membership or nonmembership in the Church of Sweden. There are also codes that relate to pensions, conscription, merchant marine registration, and income tax.

For notification purposes, local parochial registration offices send personal data cards compiled by them to the County Data Unit in the event of changes in personal data relating to such matters as identification, adoption, marriage, divorce, name, citizenship, legal incapacity, membership in the Church of Sweden or withdrawals from it, death, migration to another parish or to a foreign country, and transfer to the register of missing persons. Once a County Data Unit has updated its own personal register, it returns the corrected personal data card to the parish.

### Annual census registration

In connection with current population registration carried out by the parish, there is a special registration for census purposes. This registration is conducted each year by the local Tax Charge Office. The County Data Unit prints a population schedule showing the status of each municipality as per 1 November (the "head count" day). The schedule is delivered to the Tax Charge Office, which, in cooperation with the parish, checks and signs the schedule after making necessary adjustments. This registration is brought into legal relation to other spheres of public life. In the whole year following, a

person pays taxes to the municipality where he was registered on 1 November no matter if he moves during the year. In this municipality, he is also registered for election purposes and for entitlement of social benefits. Through this annual registration, a person's place of domicile for the following calendar year is determined. The County Data Unit also supplies data from the county registers to other bodies such as the local tax authorities, the social security administration, and the defense authorities.

### The national tax board

The main function of the National Tax Board, the central population registration body, is to supervise and organize the work of the local and regional authorities. It is responsible for system design, for programming, and for the development of various routines to be carried out by the local and regional organizations.

### CONSTRUCTION OF THE PERSONAL IDENTITY NUMBER

The entry into the population file is the civil registration number. Such a number has been assigned to each individual as follows: the year of birth, the month of birth and the day of birth, each containing 2 digits. Thus, the date of birth for a person born on 18 October 1950 is indicated as 501018. A 3-digit serial number called the birth number is added. This birth number is odd for males and even for females. Each County Data Unit has at its disposal a series of birth numbers between 001 and 929. A birth number is then assigned to each birthday from the beginning of this series. The numbers 930 to 999 are dispensed by the National Tax Board for specific purposes, such as, in the event a county should run out of numbers. The numbers are checked so that persons born on the same day are not assigned the same birth number.

The civil registration number is completed with a check digit, created according to module 10. This makes it possible to check the number throughout the processing system. The check digit routine in the automatic data processing system is performed using module-10 and weights 2 and 1 for the calculation of the check digit. This enables an identity number to be checked automatically when the data are being registered. The method of calculation is illustrated below:

Identity number		450410	149
Weights	x	212121	212
<hr/>			
Products		850420	2418
Add the figures		8+5+0+4+2+0+2+4+1+8 = 34	
NB 18 is read as 1 + 8			

Subtract the last digit of the sum from ten, *i.e.*,  $10 - 4 = 6$ . This check digit is then added so that the complete identity number becomes 4504101496. The identity number may then be checked when recorded.

Example:	4504101496
	x 2121212121
<hr/>	
	8+5+0+4+2+0+2+4+1+8+6 = 40

If the last digit of the sum of the products is not 0, the identity number must be in error.

### THE ADMINISTRATION OF THE PERSONAL IDENTITY NUMBER

The fundamental function of the number is to provide each individual with a unique form of identification. No information other than date of birth and sex can be deduced from the number. Every person living in Sweden on 1 January 1947 was assigned a personal identity number in the county of registration. Since then, numbers have been assigned to newborn children, immigrants and certain other groups. The child is given the first vacant birth number from the county administration digit series for the day of birth.

Not only the newborn can be assigned a personal identity number by the National Tax Board, but also certain other categories of people. Such categories consist mainly of immigrants in Sweden who register in a parish and have not previously resided in the country and have already been assigned a number. When an immigrant registers at the parochial registration office, the latter informs the National Tax Board and requests a number. The national Tax Board checks to see that the person concerned has not previously been given a number and, if not, assigns him one. A person who has been assigned a number at any time in the past will be reassigned his original number.

Since 1969, personal identity numbers have been assigned to persons who have come from abroad to work in Sweden but have not stayed sufficiently long to be registered at the parochial registration office as being domiciled in Sweden. The National Tax Board assigns such a person a number when it issues a preliminary income tax return to him, or when he enrolls in the social insurance scheme. There are some other minor categories of people who may be given personal identity numbers for special registration purposes; for instance, Swedish citizens living abroad who apply for a Swedish passport and who have not previously been given such a number.

## INTEGRATION IN THE NUMBERING SYSTEM

The magnetic tape file of the population kept at the County Data Unit is arranged according to personal identity numbers starting from the oldest to the youngest. The file is updated once a week. Data concerning members of a family are linked. A husband's record also contains a note of his wife's personal identity number and vice versa. The record of a person under 18 years of age will contain a note of the personal identity number of the head of the household. This enables data concerning members of a family living together to be combined.

The record for every person in the file contains an identification number for the county, the municipality, the parish and the real estate unit where he resides. This number relates to a special magnetic tape register of all the real estate units in the county. The population files and the real estate files can be matched and the information integrated. A list arranged by all the real estate units and the persons living in them is made every autumn so that the exact legal domicile of each individual can be established for the coming year.

The population file is also used as the basis for the tax file of all individuals. The tax file, kept by the county administrations, contains all information of any significance about taxes and their collection. A taxpayer's identity number is the same as his personal number supplemented by the 2-digit code of the county where he lives. In this way, the population file and the tax file can be integrated.

For various official purposes, there can be full integration of the population file, the tax file and the real estate file by means of the personal identity number and the real estate identity number.

## USES OF PERSONAL IDENTITY NUMBERS

### General uses

At the outset, personal identity numbers were used, in addition to names, as a safer way of identifying individuals. Since the introduction in 1967 of computers in population, registration and taxation work, a numbering system has become a necessary and fundamental element in the maintenance of an accurate and efficient public administration system. An outline has already been given above of the use and integration of personal numbers in that respect. Several other public authorities and even private organizations use these numbers. The most important are the following:

*Military service.* Before 1953, every man liable for military service was assigned a special military

identification number. Since that year, the personal identity number has been used instead. The county administrations supply the military service authorities with all the vital data required, including such particulars as changes of address. The military authorities now receive these data through an exchange of magnetic tapes.

*Civil defense.* The above routine is also used in the case of those registered for civil defense. Furthermore, each newborn child is given, free of charge, an identity disc with his or her personal number engraved on it. Adults may purchase such identity discs at small cost.

*Social insurance.* The social insurance offices also use personal numbers for identification. The county administrations notify the National Insurance Board, on magnetic tape, of changes in the population registers. The fact that particulars concerning members of the same family can be linked is of great significance in the administration of pensions and children's allowances.

*Schools.* The local education committees base their registration of all children from 7 to 15 on continuous information supplied by the county administrations. This enables the committees to see that all children of compulsory school age are attending school. Also, in this field, personal numbers are of great importance both as a means of identification and as an administrative aid.

*Health services.* Various patient booking systems, which are now being built up in the health services, are based on the personal identity number as an identifier. When a patient visits a hospital for the first time, he is issued a patient attendance card, a metal plate on which is stamped his personal number, name, etc. This metal plate is used to identify the patient in the hospital, for instance, when tests and X-rays are taken. Personal numbers are also widely used as identifiers on a patient's medical record, the document which the health services are legally obliged to keep. Personal numbers are also frequently used as identifiers in various kinds of staff administration registers in the health services.

*Passports.* A Swedish passport must contain a note of its holder's personal identity number. The National Police Board keeps a central register of all passports issued based on personal numbers. As mentioned before, it is sometimes necessary to assign numbers to Swedish citizens living abroad who have not previously been given a number.

*Registers of motor vehicles and drivers' licenses.* Since 1973, all motor vehicles have

been registered by the National Car Register Board. Not only data concerning a motor vehicle, but also the name of the owner's personal number and address are registered. The county administrations send magnetic tapes periodically to the National Car Register Board notifying it of such matters as changes of address. Every driver's license must include a personal identity number. This number is used to identify the holders of drivers' licenses in the central register which is kept by the National Car Register Board. The county administrations inform the Board of changes in the way just described.

*Insurance companies, banks and other organizations.* Many other official and nonofficial bodies use personal identity numbers in their rosters of employees, members, clients, policyholders, etc. These numbers improve administrative efficiency, particularly in ADP work. Typical examples of such use are a bank's list of clients and an insurance company's register of policyholders. Such bodies may establish links with the county administration registers so that they can be notified if a person changes his address.

#### Use in vital statistics

The county administrations notify the National Central Bureau of Statistics each week of changes in the population register concerning births, migration, deaths and marital status. This information relates to individuals, and personal identity numbers are used as the means of identification. The Central Bureau of Statistics gathers information in a register system called the Register of the Total Population and covers all persons entered in parochial registers in Sweden. This register is updated at regular intervals. Apart from personal identity numbers, it contains the majority of the county administrations' population data and also certain data on income and taxes. The main object of this register is to serve as a base for the production of statistics concerning individuals. Provided that the Data Inspection Board has given its permission, it is possible, by using the personal identity number as a matching device, to carry out the joint processing of statistical material within the whole area concerned with individuals and to reduce the number of variables that have to be collected in certain other sets of statistical material. This register also provides a framework for the drawing of statistical samples. The individuals selected in a sample can be linked by their personal identity numbers to any other available information that is of interest for the survey in question.

Sweden's population statistics are based on the Register of the Total Population system. Personal

identity numbers are used in two contexts here; as variables when age and sex are computed, and as matching devices. The statistics of population change use personal identity numbers in the following ways: 1) to ascertain that there is no duplication of notifications; 2) to verify notifications of multiple births; 3) to compile tables showing emigrants according to the duration of their stay in Sweden (the immigrant register is matched against the emigrant register); 4) to compile tables showing those who have received Swedish citizenship according to the duration of their stay in Sweden (the immigrant register is matched against the register of those who have received Swedish citizenship); 5) to compile migration statistics for municipalities relating to 5-year periods in which those who have moved over a municipal boundary once are recorded separately and those who have moved both in and out (out and in) are recorded separately (in-migrants are matched against out-migrants); and 6) to produce migration statistics, e.g., for 1970 and 1971, with data from the 1970 Census of Population and Housing, such as occupation, type of economic activity, education, and income (the 1970 and 1971 migration register has been matched against the 1970 Census of Population and Housing).

Personal identity numbers have been used for the population census since 1960, primarily as matching devices. Their use has steadily increased as more and more particulars from the census have been gathered from the register material. This means that it has been possible to reduce the number of particulars to be collected directly from the general public.

The Register of Deaths, and the Register of Persons Born on the 15th of the Month are other examples in Sweden's population statistics of the use of personal identity numbers as a matching device. The latter Register comprises some 3 percent of the population. This register contains data concerning demographic features and changes in these features, including migration, both relating to those born on the 15th and relating to the husband, wife and any child living with the individual concerned. In addition, it contains data relating to income and economic activity (according to a rough breakdown) for the individual and his or her husband or wife. The register has chiefly been used for sample surveys of fertility, migration and changes in income at an individual and family level, as well as a sampling frame for interview surveys.

The Register of Deaths contains data from the 1960 Census of Population and from the annual cause

of death data for 1961 to 1970. Data on demographic features, such as occupation, economic activity, and educational level from the Census of Population are linked to data on causes of death and date of death. This linkage makes it possible to combine data and to study mortality in any population that can be defined by means of census data. The Register of Deaths is expected to be of great interest in epidemiological studies.

### Use in health statistics

Personal identity numbers are used as identifiers in a number of registers in the public health sector. They are used as matching devices in the various registers so as to enable data supplied on different occasions for one and the same individual to be interrelated. The registers have various uses for statistics or special surveys of different kinds. The National Board of Health and Welfare is the body that is primarily responsible for Sweden's central health statistics.

Personal identity numbers are used in the following major registers: 1) statistics of patients, 2) notifications of the medical aspects of births, 3) the Cancer Register, 4) the Register of Gynecological Medical Examinations, 5) the Register of the Side Effects of Medicinal Drugs, and 6) other registers.

*Statistics of patients.* The statistics of patients are compiled mainly for the purpose of providing information for administrative planning. The primary data consist of particulars concerning medical diagnoses and operations while the patient was in a hospital. Personal identity numbers enable the record to be identified for supplementing and correcting certain particulars; the computerized linking of several different periods when a patient was receiving medical attention, and the computerized linking of data from other registers. Furthermore, the existence of personal identity numbers increases the opportunities for the use of statistics in special surveys, such as medical research of an epidemiological nature. The statistics of patients have had another function with regard to the side effects of medicines. Those working on these statistics have been able to call attention to adverse drug reactions since they are able to search centrally for patients' medical records.

*Notification of medical aspects of births.* The medical aspects of births are registered to provide a foundation for medical statistics of deliveries. This form of registration also enables data to be used retrospectively with a view to discovering high risk

factors among the newborn. The register contains numerous medical data concerning the mother's state of health during pregnancy, the course of the delivery and the state of health of the newborn child. The mother is identified in the register by means of her personal identity number. The newborn child's number is not added until the register is updated, about 8 months after the register year has expired.

*Cancer register.* Although the Cancer Register is primarily intended to be used in research, it also has another function and that is to sound the alarm about health hazards. This register has been widely used as a gateway to various research projects. In recent years, it has proved to be of major importance in investigations into the relationship between the occupational environment and the origin of tumors. Data on cancer are collected from 3 different sources: clinics, pathologists and cytologists, and mortality statistics. In the case of data from the first 2 sources, the personal identity number is not entirely complete. Compilations of data from clinics and pathologists and cytologists are made manually with the date of birth and the name to show the identity of the individual. Personal identity numbers are later checked and supplemented by comparing them with a microfiche register of the total population of Sweden. The data are then registered by computer, and the data from the statistics of mortality are transferred by joint computerized processing with the personal identity number as the identifier. The register is updated continuously. The personal identity number is used as the identifier in the updating of the register. For identification purposes, the whole or part of the name is also registered. It has been shown that this is necessary in cases where it has not been possible to obtain a personal identity number.

*Register of gynecological medical examination.* To supplement the Cancer Register, the national Board of Health and Welfare maintains a register containing data from gynecological examinations that are carried out under the aegis of the county councils. Those asked if they would like to receive these examinations are selected from the population registration system. The use of personal identity numbers in these examinations enables a woman's state of health with respect to cancer to be followed up at a later date, and for an assessment of the results of these examinations.

*The Register of the side effects of medicinal drugs.* It is intended that this register should provide information speedily about side effects that may have been caused by a given medicine. Identification is

necessary to enable the scientific follow-up of patients

*Other registers.* Personal identity numbers are also used in registers and surveys carried out by bodies other than the National Board of Health and Welfare; *e.g.*, the Tuberculosis Register kept by the National Association for Cardiac and Pulmonary Diseases, and the registration by the National Bacteriological Laboratory of notified cases of disease that are dangers to the general public

## ADVANTAGES AND DISADVANTAGES

Personal identity numbers are now being used extensively in Sweden as a means of identification not only in the national registration and taxation systems, but in the public sector and the private sector. The widespread use of these numbers is due to the considerable advantages, despite a few technical disadvantages. The advantages are: they are stable, they have theoretical safety and are easy to use, and they are easy to remember. The disadvantages are: they are not entirely self checking (reversal possible), and they are carriers of information

The high stability of personal identity numbers is inherent in their constituent parts. An individual is assigned a number at birth or, in the case of an immigrant, at his first contact with the population registration authorities. This number remains unchanged throughout his lifetime. A number can be altered only if it is discovered that errors occurred when it was assigned. Changes in the year, month, and day of an individual's birth are extremely rare except in the case of immigrants from countries with imperfect population registration systems. There should not be any change in the 3 digits of the supplemented birth number. The last digit (the check digit) is only altered if one of the other digits is altered.

The check digit can be constructed according to various systems. The choice of a system is a matter of weighing the pros and cons of various factors, such as, theoretical safety, ease of use, and the technical aids available. The Swedish system was designed to facilitate the setting up of the register on automatic data processing. The system, which was organized in the 1960s, was based on the data registration equipment then available via punch cards, in which every position was costly. This must be borne in mind in any assessment of the checking system used, with one digit chosen for the personal identity number. It must be considered that this system has great theoretical safety. Finally, a personal identity number is easy to remember. Since

people usually remember their own date of birth, they have to learn only 4 other figures. Moreover, to make it easier to remember the latter, some other information is available as an aid to the memory

It is usually maintained that the disadvantage of Sweden's personal identity number is that it is not entirely self checking. To gain as many advantages as possible, it was necessary to tolerate this disadvantage. The check digit does not single out all the reversals of digits within the number. However, it is thought that such errors are only minor in extent. In all probability, these errors play only a minor part compared with the errors occurring in the practical use of personal identity numbers in the various registers, such as human errors. Nor, can an interpretation of the reports available be that the majority of errors would disappear if there were some other kind of checking system. Instead, the essential question seems to be whether or not it is preferable to have an open information carrying number, as there is now with the date of birth, or a system which does not disclose any information

Personal identity numbers are firmly integrated in various official registers of individuals throughout the country. Many people think that the use of these numbers has become all too prevalent both in private and in official registers, and view with disfavor the fact that these numbers reveal a person's date of birth. This is the price to be paid for an easily run system. A system with a number that does not disclose any information is a much more arduous one, especially the process of assigning numbers. In any case, such a system would probably not have been practicable at the end of the 1940s when the present system started.

## THE PROBLEMS OF THE SYSTEM

### Technical problems

Apart from the problem that the system is not entirely self checking, there do not seem to be any very great technical problems. However, immigration from countries having rather imperfect population registration has, to some extent, given rise to a problem for a system with personal identity numbers based on dates of birth. If an immigrant does not know his date of birth, he is assigned a personal identity number based on an estimated date of birth. If such a person emigrates from Sweden and then immigrates into the country again, there is a danger that he may be assigned a new personal identity number. There is another problem; people coming from countries with imperfect population registration systems, and who do not know their date of birth, often say



they were born on 1 January. The result may be both confusion between individuals, and an uneven distribution in registers of individuals ordered by personal identity numbers.

### Other problems

In practice, the problems that arise in the use of personal identity numbers are of a different kind. Here, we draw attention mainly to problems that have arisen in the statistical processing of material in which personal identity numbers have been used as an identification device. The use of these numbers for that purpose became firmly established in various registers and surveys during the 1960s. One of the reasons was that these numbers made it possible for various sets of material to be processed together, with the result that the information available could be put to a better use. No longer were respondents required to furnish the same particulars several times. The production of statistics could be made more efficient.

Over the years, the majority of the errors occurring in personal identity numbers have been corrected by the population registration authorities and the check digit system has been introduced. Because of the widespread use of personal identity numbers in administrative material, members of the general public have become increasingly aware of the value of remembering their number or of being able to look it up easily. Consequently, errors in these numbers are now very rare compared with the 1960s.

### Solving problems

Regarding the problems that may arise in a certain statistical survey due to errors in personal identity numbers, action can be taken to deal with such errors in various ways. First of all, there is the question of how the errors are discovered by the check digit when the material is being registered by computer. Other errors may be discovered in the actual survey process. Let us take as an example an interview survey in which the survey population and certain basic data are gathered from material with personal identity numbers that were collected on an earlier occasion. When being matched in the computer, the data for those selected for the survey are supplemented by name and address from a register that is founded directly on the register kept by the population registration authorities. The particulars are then sent out to the various addresses. When an individual finds that he has been given particulars which differ from those he knows to be correct, he will normally react by pointing out that these particulars do not relate to him. The identity of the per-

son who was originally selected can be traced by scrutinizing the primary data in the original survey in which the selected individual gave the wrong personal identity number. If that survey contains additional particulars to identify this individual, he can be found. This, however, is time-consuming work that may not always be feasible because of shortage of resources. Therefore, the errors may instead reduce the number of individuals in the survey leading to non-responses. Nevertheless, this problem is rarely serious.

A different way of solving the error problem is to use additional identification devices when processing the material. However, this course is not taken very frequently in statistical surveys. It is used chiefly in administrative contexts where errors in the joint processing of registers may have unfortunate effects for private persons, for instance, if children's allowances or pensions are sent to the wrong person.

### PERSONAL IDENTITY NUMBERS AND PRIVACY

From 1947 to the 1960s, the general public in Sweden accepted the use of personal identity numbers deeming them to be a useful and easily manageable instrument by which individuals could be safely identified. However, during the general Census of Population and Housing in 1970, the question of privacy became a burning one. Fears were voiced that the new system, with the rapid spread of the keeping of automatic data processing records, would lead to an undue infringement of privacy. As an outcome of these discussions, a Committee was set up to study the problem. Its report led to the passing of the Data Act and to the establishment of a supervisory authority, the Data Inspection Board, which came fully into operation on 1 July 1974. The purpose of the Data Act is to protect the individual from any "undue infringement of personal integrity" that may ensue from the increasing use of ADP in personal registration. By the Data Act, no ADP register, or any other file, that contains information about an individual may be established or kept without a special permit from the Data Inspection Board. The latter must examine each register from the viewpoint of personal integrity before deciding whether or not to grant a permit. The Board may also lay down rather far-reaching directives concerning how the register should be kept and managed so as to obviate any undue invasion of privacy of individuals. If those responsible for a register infringe these directives, their permit may be withdrawn by the Board. Special rules apply to registers established by governmental or parliamentary decision. The Data Inspection Board has no jurisdiction over such registers. However, it

must always be asked to give its views on the setting up of such registers and, as is laid down in the preamble to the Data Act, its views must be given serious consideration. The Board is to supervise compliance with the directives issued by the Government or by Parliament regarding the management of the registers

The Data Act is divided into 5 sections. The first section defines certain expressions, such as, "personal data" and "personal registers" that occur in the text. It should be noted that the provisions of the Data Act make no mention of personal registers, except in the case of an ADP register which contains personal data that can be linked to individuals identifiable either by their name, by a personal identity number, or by some other means of identification. The second section contains provisions concerning permits, directives relating to the purpose and content of the registers, data that may only be registered in exceptional cases, etc. The third section contains provisions relating to the obligations of those responsible for the registers of individuals. It is stipulated how and when corrections are to be made in the registers, how a registered person is to be informed, if he so requests, of the facts registered about him, and when in certain cases data are not to be made available. Also, there is a provision about the obligation of those responsible not to disclose information in the registers. The fourth section is devoted to the Data Inspection Board's controlling and supervisory powers. The fifth section contains rules about any violations of the directives issued by the Data Inspection Board and the consequences of any violation, such as penalties, damages or fines.

A Bill proposing the establishment of a Central Population Register in Sweden was submitted to Parliament in 1972. The main purpose of the Register was to make it easier for the various sectors of public administration to store information in records, and the need to reduce storage to a minimum. Above all, the use of personal identity numbers would make it easy to retrieve information from the Register. Consequently, it would be possible to reduce the number of particulars in other registers, for instance, a person's name and address. In fact, this procedure has to some extent become a reality since the county administrations now supply data to other computerized registers. However, the Bill was not passed. Parliament, with the problem of privacy in mind, deemed it advisable to wait for the passing of a Data Act.

In 1976, Parliament passed a Bill setting up a reduced central register of individuals called the SPAR (Coordinated Register of Individuals and Ad-

resses). Parliament also stipulated what the register was to contain, and its contents were not to be disclosed without the permission of the Data Inspection Board. The SPAR is updated from information held in the county administrations' notification tape of population registration data. The register is to be updated with these particulars once a week. Furthermore, the register is to contain particulars concerning assessed income and the ownership of property. It is planned that these particulars will be updated once a year. If a person does not wish to receive advertising matter directly, the register is to be marked to this effect. The development and operation of the SPAR is in the hands of the National Data Center for Administrative Data Processing.

In the discussions of privacy during the last few years, the use of personal identity numbers has been a focal question. While it has been rightly claimed that these numbers facilitate integration between different registers, it has also been maintained that the existence of such an efficient key to all kinds of information involves great hazards. It is generally held that it would be illogical to do away with what is an efficient tool in public administration just because this tool is open to the danger of misuse. Therefore, the question remains: "What precautions must be taken to prevent misuse?" Privacy problems must be grappled with by the inclusion in ADP systems of adequate safeguards stated in the Data Act and in the regulations issued by the Data Inspection Board. Technically, it is possible to prevent personal identity numbers from acting as a key to a register unless special signs are given to prove the legitimacy of an inquiry. It is also possible to release only the data specifically requested in an inquiry. Consequently, only selected categories of inquirers will be able to obtain information from the registers and to some of them only limited data will be made available. What is certain, however, is the use in Sweden of personal identity numbers is here to stay, and the increasingly widespread problems concerning privacy will not prove insurmountable.

#### FUTURE ANTICIPATED USE

Personal identity numbers have become the natural identifiers in various surveys concerned with individuals. This is the case both in administrative registers of individuals and in statistical surveys. Therefore, any plans for the further use of the numbers must lead to more intensive use. However, it should be noted that the National Tax Board and the National Office of Organization and Management are now working on proposals for a new ADP system for the registration of the population, taxation and tax

collection in the future. Parliament has decided that these proposals should be implemented. The new system is to be adopted in stages. It is expected that the first stage, which is concerned with taxation and tax collection, will be introduced in 1979.

A committee has been set up by the Government to examine the question of future censuses of population and housing. By its terms of reference, the Committee is charged with the examination of the feasibility of using more extensively the data that are to be found in various administrative sectors such as the administration of taxes and the registration of real estate. Much is expected of the reorganization of the ADP system for population registration and taxation which was mentioned earlier. This committee is to report on its work in time for a draft Bill to be submitted to Parliament. The committee is to make known enough of its recommendations to enable a possible 1980 Census of Population and Housing to be planned. This committee was established partly because it was thought that since there are many registers of individuals with the same identifier in the country, it might be possible to base the collection of data on the information available in existing registers. The use of personal identity numbers must be considered one of the prerequisites if any review of the possibilities of joint processing is to be at all meaningful.