

# Description of the register

<b>Basic information</b>	
Register name	The Total Population Register
Year	2016
Variant	Persons registered on 31 December, and demographic events during the year

## The Total Population Register

2016  
BE0102

### Contents

<b>The Total Population Register .....</b>	<b>2</b>
<b>A General information.....</b>	<b>4</b>
A.1 Subject area.....	4
A.2 Statistical area.....	4
A.3 Responsible for the register .....	4
A.4 Obligation to provide information .....	4
A.5 Confidentiality and rules for handling personal data .....	4
A.6 Discarding and archiving regulations .....	4
A.7 EU regulations .....	4
A.8 Objectives and background .....	4
A.9 Use of the register .....	5
A.10 Design and implementation.....	6
A.11 New items in the register .....	8
A.12 Planned changes in future registers .....	8
<b>B Quality declaration.....</b>	<b>9</b>
B.1 Contents.....	9
1.1 Statistical target characteristics .....	9
1.1.1 Population delineation.....	9
1.1.2 Unit types .....	11
1.1.3 Variables .....	11
1.1.4 Reference times .....	13
1.2. Comprehensiveness.....	13
B.2 Accuracy.....	14
2.1 Overall accuracy.....	14
2.1.1 Quality indicators .....	15
2.2 Sources of inaccuracy .....	16
2.2.1 Coverage .....	16
2.2.2 Measurement .....	19
2.2.3 Non-response.....	21
2.2.4 Data processing .....	22
2.2.5 Model assumptions.....	23
2.3 Census conversion.....	23
2.3.1 The number of residents in dwelling households.....	24
2.3.2 Type of household.....	24
B.3 Timeliness .....	25
3.1 Frequency.....	25
3.2 Production time .....	25
3.3 Punctuality.....	25
B.4 Comparability and coherence .....	25
4.1 Comparability over time .....	25
4.3 Coherence with other registers/data .....	28
B.5 Accessibility and clarity.....	28

5.1	Forms of dissemination .....	28
5.2	Documentation .....	29
5.3	Access to the final observation register .....	29
<b>C.</b>	<b>Data collection and processing .....</b>	<b>30</b>
C.1	<i>Measurement instruments</i> .....	30
C.2	<i>Data collection process</i> .....	30
2.1	Data collection process with external suppliers .....	30
2.2	Data collection process with producers of registers.....	31
C.3	<i>Data processing</i> .....	32
3.1	Data processing with external suppliers.....	32
3.2	Data processing with the producer of the register.....	32

## **A General information**

### **A.1 Subject area**

*Subject area:* Population

### **A.2 Statistical area**

*Statistical area:* Population composition

### **A.3 Responsible for the register**

*Contact person:* Karin Wegfors

*Telephone:* +46 10 479 64 98

*E-mail:* [karin.wegfors@scb.se](mailto:karin.wegfors@scb.se)

### **A.4 Obligation to provide information**

The obligation to provide information in accordance with the Official Statistics Ordinance (2001:100) means that government agencies must submit information required for the production of statistics.

### **A.5 Confidentiality and rules for handling personal data**

For confidentiality regarding the agency's specific task for the production of statistics, Chapter 24, Section 8 of the Public Access to Information and Secrecy Act (2009:400) applies. With regard to automatic handling of personal data, the rules in the Personal Data Act (1998:204) apply. In the area of statistics, the Official Statistics Act (2001:99) and the Official Statistics Ordinance (2001:100) also contain specific rules concerning the handling of personal data.

### **A.6 Discarding and archiving regulations**

Information is not removed from the Total Population Register, instead it is permanently archived in accordance with the preservation decision of the National Archives (RA-MS 2007:64). Currently, all annual records up to 1997 have been permanently archived.

### **A.7 EU regulations**

There are no EU regulations concerning the Total Population Register.

### **A.8 Objectives and background**

The Total Population Register contains data that is essential for information about Sweden's population. The system includes registers that are the bases for official population statistics and provide basic data for large parts of Statistics Sweden's operations.

*The Total Population Register was created in 1968.*

Population registration was computerised in 1967, and in the following year Statistics Sweden used the population register to establish a register system called the Total Population Register. The Total Population Register contains

information about the population and its changes, and to a large extent reflects the content of the population register of the Swedish Tax Agency.

The Total Population Register is available for every year from 1968 onwards.

***Changes in the population are reported regularly***

The Swedish Tax Agency has overall responsibility for population registration. Information (notifications) on changes in population registration are reported five times a week from the Swedish Tax Agency via SHS (a joint method used by agencies to send data to each other). Until 1998, notifications were delivered once a week on magnetic tape. The notifications contain information about births, deaths, people who moved, changed civil status, immigrated and emigrated.

**The Total Population Register system was changed in 1998**

The Total Population Register has largely the same content of variables as when it started in 1968. A new Total Population Register system was launched in 1998 and introduced a number of new variables, including dates for all events and improved information about relationships between people.

***Population registration based on dwelling unit in 2011***

As the Riksdag decided that the 2011 population and housing census should be completely register-based, a dwelling register was established, for which Lantmäteriet is responsible, and that contains all dwellings, both in one- or two-dwelling buildings and in multi-dwelling buildings. To enable linking between dwelling units and residents, the Swedish Tax Agency is responsible for registering those who live in multi-dwelling buildings in dwelling units rather than in properties, as previously. From 2011, the Total Population Register receives identities based on dwelling unit, address, and property via the notifications. This has made it possible to produce new variables that are used in the production of household statistics, such as household size, household type and number of children in the household.

***Population registration no longer done by parish in 2016***

From 1 January 2016, population registration is no longer done by parish, but rather by municipality. For cultural and historical reasons, as well as for the purposes of statistics and research, it remains important to maintain the parish divisions from the time when the division was stable. This is why districts have been introduced. Districts are to correspond to the parish division in force on 31 December 1999. Population registration is not to be done by district. However, district affiliation is registered at individual level in the population registration database.

## **A.9 Use of the register**

***Internal use***

The Total Population Register is the foundation of official population and household statistics. Examples of population statistics include population by sex, age, marital status etc. in counties and municipalities. Statistics on population changes may relate to internal migration, births, deaths, marriages, divorces, immigration and emigration, etc. The statistics are produced several times per year.

The Total Population Register serves as a sample frame for many samples of individuals at Statistics Sweden. Samples are made for both appropriation and commissioned operations and are mainly used for different types of questionnaire and interview surveys. Some examples include Labour Force Surveys, the Political Party Preference Survey, and the Surveys on Living Conditions.

The Total Population Register is also a database which can supply supplementary data to other registers and surveys. This usage enables a restriction in the number of questions in a survey, which reduces the burden on respondents.

For example, the Total Population Register provides:

- background data for the registers of labour market statistics, economic welfare statistics and education statistics;
- the basis for the coordination of register populations and surveys within statistics on individuals;
- data for statistical packages and for the statistical basis of population projections;
- procedures for updating data in samples for questionnaires and interview surveys;
- data for supplementation of personal identity numbers in different material; and
- data for authentication in connection with the request of extracts of registers in accordance with the Personal Data Act.

#### *External use*

The external use is mainly within the context of commissioned activities. Data at aggregate level is requested by researchers, enterprises, authorities, municipalities, the Riksdag, the Government, and others. Anonymised microdata from the Total Population Register may also be released for research, but only once a confidentiality assessment has been made.

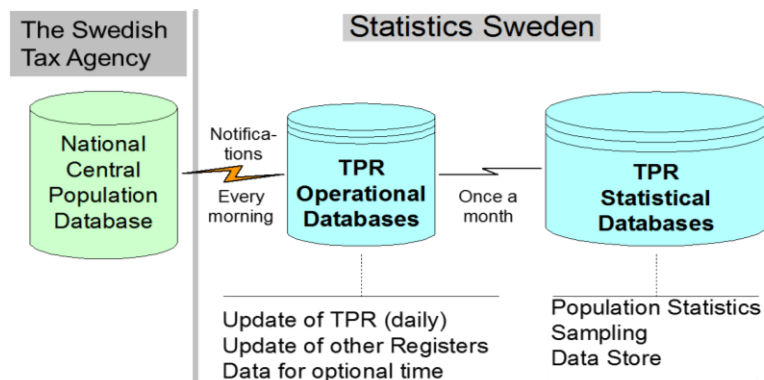
## **A.10 Design and implementation**

**Table 1. External suppliers of administrative data**

<b>Government agency/organisation</b>	<b>Type of data/content</b>
<i>Swedish Tax Agency</i>	<i>National population data, data on individuals</i>

**Table 2. Internal suppliers of data**

<b>Statistics Sweden sources</b>	<b>Type of data/content</b>
<i>Dwelling register</i>	<i>Dwelling data</i>



Register production consists of collection, review and processing of data from the Swedish Tax Agency. The Swedish Tax Agency delivers notifications on changes in the population registration database five times a week to the Total Population Register. Before the notifications are entered into the Total Population Register operational database, some basic checks are carried out. Every month, a number of preliminary registers are produced. An expanded review has been made in the registers. Corrections, imputations and derivations of new variables are also made. The final registers regarding 20161231 and the whole year 2016 are reviewed in cooperation with the Population Unit and the Forecast Institute.

Final registers:

<b>Population</b>
Population on 31 December 2016
The population on 31 December 2016 with family variables
The population on 31 December 2016 with household variables
The population on 31 December 2016 with household and housing variables
Changes in civil status 2016
Deaths 2016
Still births 2016
Births 2016
Migration within Sweden 2016
Immigration 2016
Changes in citizenship 2016
Emigration 2016

## A.11 News in the register

### *New or changed variables*

Variables that have been added in all registers.

- A unique identity for dwellings
- A unique identity for property
- District code. The district division is based on an adjusted version of the parish division that applies on 31 December 1999.

A new household variable has been added that shows whether or not the household is imputed, see also 2.2.5 Model assumptions.

The variable Degree of urbanisation has been updated in accordance with Eurostat's latest version.

The variable that shows SKL:s division of the municipalities has been updated to the 2017 version.

### *Other changes*

-

## A.12 Planned changes in the next year registers

A new act concerning names enters into force on 1 July 2017, which among others leads to greater flexibility in the choice of names. The most important changes are listed below.

- The Swedish Tax Agency will be the sole agency responsible for names,
- double surnames will be introduced, and middle names will cease,
- newborns and adopted children will be given their names only via application,
- it will be possible to change your surname to any surname used by at least 2000 people in Sweden,
- it will be possible to add or change first names,
- it will be possible to change names how many times you want.



## **B Quality declaration**

### **B.1 Contents**

#### **1.1 Statistical target characteristics**

##### *1.1.1 Population delineation*

###### *The population register*

A child that is born in Sweden is entered in the population register if the mother, at the time of the birth, is registered in the population register. If the mother is not registered in Sweden, the child is registered if the father is registered and is the child's guardian.

A person who moves to Sweden is to be entered in the population register if he or she is considered to be residing here. A person is considered to be residing here if it can be assumed that they will regularly spend their leisure and weekend time in Sweden for at least one year. Citizens of EU/EEA countries must also have right of residency in Sweden. Nordic citizens are exempt from right of residency. Citizens outside the EU/EEA must have a residence permit in Sweden.

A person is entered into the population register at the property where they reside. If the property contains multiple dwelling units, the person must also be registered at a dwelling unit. A person who regularly spends their leisure and weekend time in more than one dwelling unit/ property, taking into account all circumstances, is considered to be residing where he or she has their actual residence. In the overall assessment, account is taken of where the family resides, the number of overnight stays in each dwelling, the size of the dwelling, and whether the work is temporary and the residence will revert to the previous location after this period.

###### *Exceptions from the main rule*

There are some exceptions from the main rule, which can be divided into three groups:

1. Persons entered in the population register but who do not reside in Sweden.
2. Persons who live in Sweden but are not entered into the population register.
3. Persons registered on a different property than the one where they reside.

###### *1. Persons entered in the population register but who do not reside in Sweden*

Persons who move abroad, and where the time spent abroad is intended to be less than one year, remain in the population register in Sweden.

Persons who are employed abroad in the service of the government, such as employees at the Ministry for Foreign Affairs and at the Swedish International Development Cooperation Agency, remain in the population register in Sweden. This also applies to family members and service staff. Persons continue to be registered at the property in which they were most recently entered, or only in the municipality.

Members of the European Parliament continue to be registered if they have the use of a dwelling in Sweden.

*2. Persons who live in Sweden but are not entered into the population register*

Persons who, on immigrating to Sweden, intend to visit Sweden for a period of less than one year are not registered.

Foreign nationals who belong to a foreign mission or consulate and the service staff thereof are not registered in Sweden.

*3. Persons who are registered at a property other than the one where they reside.*

Persons who are in a hospital, a long-term care facility or in prison need not result in a change in the population registration.

Students younger than 18 years who have their actual residence together with parents or other close relatives are regarded as residing there even if the person, due to studies, regularly spends their leisure and weekend time in another dwelling unit/property. The corresponding also applies for a pupil older than 18 years, as long as the pupil continues an education at compulsory or upper secondary school level or a corresponding education that began before the person turned 18 years old. Students in higher education and at university level are normally registered at the place where they conduct their studies.

Persons residing at care facilities for the elderly in a municipality other than the one where the person is registered when they moved to the current residence should not lead to changed residency, if the stay was decided by the municipality where the person was registered. If the person no longer has use of a dwelling in the property where he or she was previously registered, the person is regarded as residing only in the municipality.

A person who, during a predetermined period of no more than one year, regularly spends their leisure and weekend time in a dwelling unit/property other than where he or she has their actual residence, should not lead to changed registration. In addition, the person should intend to return to his or her original residence.

***The population***

The population as at 31 December 2016, the population consists of those persons who, according to the legislation, ordinances and other regulations that apply for the population register, *are* registered in Sweden at that time. The target population consists of persons who, according to legislation, ordinances and other regulations that apply for the population register, *should* be registered in Sweden.

***Households***

Households refer to the person or persons who were registered in the same dwelling.

***Births***

The population consists of live-born children born during the year in Sweden. Live births refer to newborn children who were breathing after birth or who showed other signs of life. A newborn child, who was born in Sweden, is to be registered in the municipality where the mother was registered at the time of the birth. If the mother was not registered at the time of birth, the child is to be registered if the father was registered and was the child's guardian.

### ***Still births***

A stillborn child refers to a child who died after the end of the twenty-second week of pregnancy during the year.

### ***Deaths***

Deaths refers to registered persons who died during the year.

### ***Immigrated***

Persons who one or more times during the year moved to Sweden and were registered. To be registered in the population register, a person must intend to stay in Sweden for at least one year and meet the requirements to be registered (see above).

### ***Emigrated***

Persons registered in the population register who have emigrated from Sweden one or more times during the year and who meet the requirements for deregistration as an emigrant. In order to be registered as an emigrant, one must intend to live abroad for at least one year. When emigrating to another Nordic country, the registration rules of the country one moves to apply. This could mean that the person becomes deregistered as an emigrant, even though that person does not intend to settle abroad for at least one year, if the rules are such in the country the person moves to. Norway, for instance, has six months as a limit for entry in the population register.

### ***Migration within Sweden***

Persons registered in the population register who have migrated within Sweden one or more times during the year.

### ***Changes in civil status***

Persons registered in the population register who have changed their civil status one or more times during the year.

### ***Changes in citizenship***

Persons registered in the population register who have changed citizenship one or more times during the year. Occupied territories and colonies are attributed to the mainland. Citizenship shall refer to presently existing, independently formed states.

#### ***1.1.2 Unit types***

Unit type in all registers refers to individuals. Furthermore, there is a possibility to compile households from the registers that contain household identities. Finally, there is a possibility to compile the family unit type from the registers that contain family identity.

#### ***1.1.3 Variables***

##### ***Variables for registered on 31 December 2016***

##### ***Individual variables:***

Personal identity number

Sex  
Date of national registration  
National registration; County, Municipality, Property, Dwelling  
Country of birth  
County of birth  
Place of birth  
District  
Date of citizenship  
Country of citizenship  
Date of civil status  
Civil status  
Age at 31 December  
Most recent date of immigration  
Country of emigration  
City of emigration in the Nordic countries  
Foreign/Swedish background

*EU core variables:*

Resident country  
Resident region, NUTS2  
Grouped country of birth  
Grouped country of citizenship  
Grouped civil status  
Degree of urbanisation  
Age at the time of reference

*Relationship variables:*

Personal identity number, husband/wife/partner  
Sex, related person  
Personal identity number father and mother  
Country of birth, father and mother  
Personal identity number adoptive father and adoptive mother  
Date adoptive father and adoptive mother  
Personal identity number, cohabitant  
Personal identity number guardian 1 and 2  
Date guardian 1 and 2  
Personal identity number other person 1 and 2  
Date other person 1 and 2

*Family variables/Individual variables in the family:*

Family identity 1 (within the property)  
Family identity 2 (within the dwelling unit)  
Type of family  
Status within the family  
Number of persons in the family  
Number of children, regardless of age  
Number of children below 22, 18 and six years  
Age of the youngest child

*Household variables/Individual variables in the household:*

Household identity

Type of household

Status within the household

Number of persons in the household

Number of children, regardless of age

Number of children below 25, 18 and six years

Age of the youngest child

Dwelling unit identity

Guardian of children in own and/or other dwelling

Close relative

Child/parent relationship

Listing for imputation of the household

*1.1.4 Reference times*

The reference time for the registers that contain the registered population is 31 December 2016. The regional division refers to conditions on 1 January 2017. In the demographic event registers (births, deaths, changes in civil status, etc.) the reference period is the entire year 2016, and there the regional division instead refers to 1 January 2016.

If the reference time of a variable differs from the reference time of the register, this data is available in MetaPlus for the individual variable.

**1.2. Comprehensiveness**

We have identified two shortcomings in the quality component Comprehensiveness in the Total Population Register, reported below.

*Citizenship*

Administrators at the Swedish Tax Agency can register up to three different citizenships for one person. Once the information is reported, all citizenships are entered into the Total Population Register system, but one of these is given priority when the register is created. Order of priority:

1. Sweden

2. EEA country

3. Country outside the EEA with which Sweden has a mutual social insurance agreement

4. Other countries

If a person has dual citizenship, one of which is Swedish, only the Swedish citizenship is registered by the Swedish Tax Agency. This is because it is not possible to maintain good quality for the second citizenship. Thus, information is entirely lacking for Swedish citizens with dual citizenship.

### *Alternate residences*

For children whose parents live apart but have joint custody, it often occurs that the child lives alternately with both parents. One study<sup>1</sup> shows that 35 percent of children with parents living apart have alternate living. If the parents' separation occurred in recent year, half the children have alternate living. Alternate living is more common if both parents have a high level of education, high income, are Swedish born and were not young when they had children. The population register and consequently the Total Population Register have no information about the alternate residences because a person can only be registered at one location.

## **B.2 Accuracy**

### **2.1 Overall accuracy**

Data preparation in the form of survey work, data registration, review, coding, checks and correction of data that is carried out regularly within the framework of population registration naturally is most important for the quality of the data. In recent years, a priority task of the Swedish Tax Agency has been to improve the quality of the population register. For this reason, in 2012 and 2013, the Swedish Tax Agency conducted an analysis of the population register error and the consequences and costs that the error leads to in society. The analysis included overcoverage and undercoverage, as well as persons who were registered in the incorrect property. The Swedish Tax Agency is continuing to work on the findings in the analysis report. It is used as helping information and as support for planning future activities, and has concretely led, through more directed sampling, to improved checks.

Since most population register information is used widely in society, the chance of detecting errors increases. Some government agencies, such as the Swedish Social Insurance Agency, the Swedish Migration Agency and the Swedish National Board of Student Aid, by regulation, are obligated to report errors in the population register to the Swedish Tax Agency. In addition, the birth certificate issued by the Swedish Tax Agency can be regarded as an important check on data accuracy. The individual submits a request for a birth certificate, which shows the data contained in the population register. A birth certificate is required, for example, when acquiring identity cards, applying for Swedish citizenship or applying for divorce. Every year about 2.6 million birth certificates are issued.

Data from the population register that is seldom used in society, such as data on adoption, is likely to have slightly lower accuracy than variables frequently used by many government agencies.

Control studies have been carried out for the Total Population Register that compare the data in the Total Population Register with the Swedish Tax Agency's population register and these show very small differences. The most

---

<sup>1</sup> Persson, Lotta et al. (2014). *Olika familjer lever på olika sätt*. Statistics Sweden, Demographic reports 2014:1  
[http://www.scb.se/sv/\\_Hitta-statistik/Publiceringskalender/Visa-detaljrad-information/?publobjid=23711](http://www.scb.se/sv/_Hitta-statistik/Publiceringskalender/Visa-detaljrad-information/?publobjid=23711)

recent comparison was made in February 2011. The result was that 434 people were found in the Total Population Register system who we thought were still registered, but were not according to the Swedish Tax Agency. In the other direction, there were 14 people who were registered with the Swedish Tax Agency but not in the Total Population Register. For people registered in both the Total Population Register and the Swedish Tax Agency population register, there were just 109 people whose civil registration data were not accurate. This means that the contents of the population register and the Total Population Register conform to a very high degree and that the accuracy of the Total Population Register is good.

The largest deficiency in quality in the Total Population Register is overcoverage. Overcoverage means that people are still registered, even though they no longer should be. Section 2.2.1 Coverage below provides more description of the problem.

### 2.1.1 Quality indicators

In 2015, indicators were produced to measure accuracy in Statistics Sweden's base register, in which the Total Population Register is included. This resulted in indicators that measure coverage errors, linking errors, classification errors and contact information errors. By following the indicators over time, it possible to see the progress of quality in the register. A table of coverage and classification errors is shown below.

Type of variable	Quality indicator	2011	2012	2013	2014	2015	2016
Linking	Percentage of persons who lived in a property that cannot be linked to a property in the property register	0.30%	0.22%	0.19%	0.19%	0.17%	0.17%
	Percentage of persons who do not have a link to the dwelling register	3.16%	3.16%	3.15%	2.78%	2.68%	2.12%
	Percentage of persons who lack a household ID	N/A	0.19%	0.20%	0.19%	0.18%	0.18%
	Percentage of families in which a person with family ID1 lives in another property	0.026%	0.011%	0.001%	0.001%	0.000%	0.000%
	Number of families in which at least two persons have the same family ID1, but live in different dwellings (or in which one person from the same family lacks an dwelling unit ID)	N/A	N/A	N/A	28 055	27 758	27 540
	Number of households with more than only one family ID 2	N/A	N/A	N/A	94	96	96
Classification	Number of persons with the same family ID 1, family ID 2 or dwelling unit ID, but with different parish/district	0	0	0	0	275	256
	Personal identity number differs from sex and age	-	-	-	-	-	-
	Percentage of persons who lack country of birth	0.009%	0.009%	0.010%	0.011%	0.012%	0.013%
	Percentage of persons who are stateless	0.091%	0.100%	0.135%	0.195%	0.219%	0.253%
	Percentage of persons for whom citizenship is unknown	0.021%	0.024%	0.028%	0.039%	0.057%	0.071%

## 2.2 Sources of inaccuracy

### 2.2.1 Coverage

#### *Individuals*

A trade-off between timeliness and coverage has led to the decision to create the register with a one-month lag. This means that the registers are produced one month after the relevant reference point in time 31 December 2016, or the reference period entire year 2016. The register is not produced immediately after the reference time in order to wait for as many updates as possible from the Swedish Tax Agency.

#### *Not everything is reported to the population register*

Data in the Total Population Register is a copy of the Swedish Tax Agency's population register. The ideal content in the population register is defined by the statutes governing the population register. People who should be registered but are not cause undercoverage, while people who are registered even though they should not be cause overcoverage. Deficiencies in the reporting of births, deaths, immigration and emigration result in coverage errors. At regional level, deficiencies in the reporting of migration between different regions result in coverage problems.

#### *I Undercoverage*

Deficiencies in reporting births and immigration (domestic and foreign) results in undercoverage.

Sometimes, data referring to one year are reported too late to affect the registers of the relevant year. In 2016, the following events were received that referred to 2015 and that would have affected the population size on 31 December 2015:

Births	18
Immigrated	1101

Delayed reported births give rise to very small problems, due to the quick reporting procedures. The Swedish Tax Agency registers 94 percent of births within two days. Within a month, virtually 100 percent of births are registered.

Persons who immigrate to Sweden are registered as immigrants at the point in time when they are entered in the population register. In some cases, it may take a relatively long time between arrival in Sweden and the time of population registration. In periods with high levels of immigrations, the administrative processing time tend to be longer, which leads to late notifications to the Total Population Register. On a yearly basis, the 1100 immigrations account for about 0.8 percent of total immigration in 2015.

Undercoverage also arises if a person immigrates to Sweden and is obligated according to laws and regulations to register their residence but does not do so. However, there is a strong incentive for a person to actually register their residence. Anyone who is not registered lacks many rights, such as being unable to receive child allowance or open a bank account. This suggests that undercoverage due to people not registering is likely to be very small.



Domestic migration contributes to undercoverage at the regional level. Late notifications or failure to register a migration within Sweden contributes to coverage deficiencies. There is no estimate of the number of persons who are incorrectly registered.

### *II Overcoverage*

Deficiencies in reporting deaths and emigration (domestic and foreign) result in overcoverage.

Sometimes, data referring to one year is reported too late to affect the registers of the relevant year. In 2016, the following events were received that referred to 2015 and that would have affected the population size on 31 December 2015:

Deaths	118
Emigrated	458

Deaths give rise to very minor problems due to quick reporting procedures. Overcoverage in the observation registers due to delayed reporting of deaths is about 0.1 percent of the deaths in 2015.

Emigrants causes overcoverage if the emigration is not reported. Past studies suggest that the population register and thus the Total Population Register contain a significant number of people who no longer live in the country. For this reason, this is considered to be the most serious deficiency in quality in the population register as well as in the Total Population Register.

Several studies have been made to estimate the size of the overcoverage. A study was carried out in 2004 that tried to estimate the size of the overcoverage by creating a "non-activity variable". The idea behind the variable was that people residing in Sweden leave marks in various administrative registers. They may, for example, have income, study or move. It can be assumed that people who do not leave marks in the registers, despite being listed in the population register, have moved away from Sweden without informing the Swedish Tax Agency. These people are given a tag in the "non-activity variable". The variable uses information on a yearly basis from three internal registers, based on administrative registers from other government agencies: the Total Population Register, the Income and taxation register and the Register of Integration Studies Data. The calculation then resulted in overcoverage of 35 000 persons in 2002.

The Swedish Tax Agency has highlighted the problem of the population register error in a report<sup>2</sup>. For example, you may consider how many people are automatically set a zero tax (persons for whom the Swedish Tax Agency does not have any indication of economic activity in the form of statements of earnings or ongoing business activities) as a possible indication that they are no

---

<sup>2</sup> Johansson, Nils (2006). *Kartläggning av folkbokföringsfelet*. Swedish Tax Agency, Report 2006:7

<http://www.skatteverket.se/download/18.71004e4c133e23bf6db8000110100/200607.pdf>

longer in the country. Then the estimate of overcoverage became 25 000 to 35 000 working age persons. In the report, the Swedish Tax Agency proposes measures to reduce the registration error, for example, by amending the law to allow for greater cooperation between the relevant government agencies. Controls within the Swedish Tax Agency could be made more efficient if the population register gained access to the tax registers.

In the most recent study at Statistics Sweden<sup>3</sup> a model is being created to estimate the size of the overcoverage. The foundation of the work has been to further develop the "non-activity variable" that earlier project from 2004 have developed to measure overcoverage via registers. The project then produced an estimation model for calculate overcoverage. First, a delineation of the persons who could be conceivably be included in the overcoverage. The group consists of people who are included in the "non-activity variable". In addition, people who have an income of less than one price base amount according to the Income and taxation register are included. Information from other registers is also used, such as border commuting. To further determine whether a person belongs in overcoverage or in the Total Population Register population, a number of different indicators are used to identify whether or not a person probably belongs in overcoverage. The indicators are created from regulations that may be based on register data from a single year or from several consecutive years.

Year	Non-activity variable	Model-estimated overcoverage
2000	50 329	(35 270)
2001	52 842	39 096
2002	54 210	39 292
2003	56 134	39 976
2004	54 412	39 645
2005	56 840	42 074
2006	56 731	40 615
2007	60 046	40 625
2008	67 868	45 373
2009	78 644	54 760
2010	83 329	59 299
2011	85 205	62 096
2012	85 973	63 796
2013	88 030	(68 645)
2014	88 187	(73 651)
2015	83 031	

In model-estimated overcoverage, the numbers for 2000, 2013 and 2014 are less accurate than in other years, since indicators based on observations before or after the reference point in time are not available. An additional disadvantage of the model-estimated overcoverage is that the result is not available until 1.5 years after the reference point in time.

<sup>3</sup> Åsling Rönning, Stina et al. (2015). *Övertäckning i Registret över totalbefolkningen – en registerstudie*. Statistics Sweden, Bakgrundsfakta 2015:1  
[http://www.scb.se/Statistik/Publikationer/OV9999\\_2015A01\\_BR\\_BE96BR1501.pdf](http://www.scb.se/Statistik/Publikationer/OV9999_2015A01_BR_BE96BR1501.pdf)

People who emigrate within Sweden result in overcoverage at the regional level. Late notifications or failure to register migration within Sweden contributes to coverage deficiencies. There is no estimate of the number of persons who are incorrectly registered.

### ***Households***

There are two problems that affect quality in household statistics:

#### Individuals who lack a link to a household

The effect of missing links depends in part on whether the person lives (is registered) alone, or together with other people, in part on whether or not the other people in the household have a household connection.

The person lives alone => Undercoverage of household.

The person lives with one or more people who also lack a household link => Undercoverage of household.

The person lives with one or more people who have a household link => Measurement error in the size of the household, and possibly composition (household type and household status).

#### Individuals with incorrect links to households

Incorrect links to a dwelling, which can be due to incorrectly reported dwelling number, affect both composition (household type and household status), and size, both with regard to the household to which they actually belong, but are not registered in, as well as the household in which they are registered but do not belong.

A number of indicators can be used to attempt to assess the quality of data at a low regional level. These can, partially in combination, give information on the usefulness of the statistics in a specific area. Large variation between regions with regard to one or more indicators also affects comparisons between regions. Differences or similarities can then be concealed by measurement or coverage errors.

#### Number of persons

In general, the fewer people registered in an area, the larger the impact of individual extreme values and errors.

#### Percentage of persons who lack a link to a household

This shows how well the household population covers the individual population. As described above, this can also lead to measurement errors.

#### Percentage of Other households

A high percentage of Other households is a warning sign, since a number of these households are incorrectly classified due to incorrect household links.

### *2.2.2 Measurement*

The data for the Total Population register is retrieved from the Swedish Tax Agency's population register and has an administrative character. The collection, measurement and registration of the information are done by the Swedish Tax Agency. Most data in the population register comes from other government agencies, where reporting is included as part of the working duties of, for example, midwives, wedding officials, courts or doctors. Notification to the

Swedish Tax Agency by individuals is only done in a few cases; notifying the name of a newborn child, changing names, migrating within Sweden and immigrating to, and emigrating from Sweden. There are a number of services to streamline data collection, for example, a web service has been introduced that enables hospitals to report births electronically, and there is an e-service to report migration. How the data is collected and registered in practice is shown in the internal handbook on population registration that is used in this work at the Swedish Tax Agency.

As reporting is handled by the person in question, there is a larger risk of measurement error, mainly because of ignorance, due to lack of knowledge of the rules on population registration. This is particularly evident in the lack of reporting of emigration, which results in overcoverage, see Section 2.2.1. Coverage. To reduce measurement errors, the Swedish Tax Agency disseminates information to those in contact with the groups in which errors often occur, and simplifies reporting. For example, e-services will be introduced for deregistration of registered students who are returning to their home country.

Another example is students who are registered in the wrong municipality. According to the Population Registration Act, a person in post-secondary education should be registered at the place of study. There are studies that suggest that students continue to be registered at their home location, rather than at the place of study. This introduces a bias when the Total Population Register is used, for example, for regional population statistics. A report from the Swedish Tax Agency<sup>4</sup> estimated that about one out of four students may be incorrectly registered. This conclusion led the Swedish Tax Agency to extend information to students and to the universities before the beginning of term. In 2011, Uppsala Municipality carried out a survey which showed that 85 percent of the full-time students residing in Uppsala were also registered there.

In 2012, the Swedish Tax Agency received about 100 000 reports of incorrect population registration. Reports can come from other government agencies, but also from individuals. Of these reports, nearly 40 000 were selected for an in-depth residence check. This checking resulted in a changed population registration in 80 percent of the cases.

From 2014, the Swedish Tax Agency uses a collected pre-review of all impulses about errors in order to achieve greater uniformity and traceability in the survey operations. With regard to which errors should be investigated, a combination of efficiency and serious errors is being considered. Currently, about 40 percent of impulses received are investigated, but the goal is 60 percent.

The population register sometimes checks address details on items that do not reach the addressee in connection with mass mailings of letters such as tax bills and voting cards. The aim is to examine whether migration is reported in a timely manner or reported at all, and to verify if the actual residency agrees

---

<sup>4</sup> Johansson, Nils (2006). *Kartläggning av folkbokföringsfelet*. Swedish Tax Agency, Report 2006:7

<http://www.skatteverket.se/download/18.71004e4c133e23bf6db8000110100/200607.pdf>

with the registered data. In 2011, 26 700 tax bills were returned out of a total of 6.5 million. This represents 0.41 percent.

In the initial collection of dwelling numbers in 2010-2011, for which the Swedish Tax Agency was responsible, there were instances of people specifying an dwelling number that did not exist at that address. In such cases, it is not possible to link the person with any dwelling, and the person thereby cannot belong to any household. Now, the dwelling number must always be included in the address when moving to an dwelling in a multi-dwelling building, and in connection with notification of a move, a reconciliation is made to ensure that the dwelling number exists at the address. It is likely that, as a result of this, some of the deficiencies that arose in the construction phase will decrease with time. If an dwelling number other than the correct one has been specified, the person will subsequently erroneously belong to a household other than the correct one.

### 2.2.3 *Non-response*

#### *Unit non-response*

-

#### *Item non-response*

Item non-response for the most frequently used variables is reported below.

No item non-response is found with regard to personal identity numbers, sex, age, civil status and regional division (county, municipality, and property).

#### *Dwelling number*

After the Swedish Tax Agency's data collection in 2010-2011, non-response was at four percent. As people move, and as this requires specifying an dwelling number, non-response decreases. Non-response in this year's Total Population Register is 2.3 percent. With regard to 20 000 persons, we have been able to impute a value, and thereby reduce non-response to 2.1 percent, or just over 212 000 persons. When the link between an individual and a dwelling is missing, it means that we cannot create households for persons based on the dwelling number. In these cases, the household is imputed instead (see 2.2.5 Model assumptions).

#### *Country of birth*

The variable has very minor item non-response. Just over 1300 persons are listed with unknown country of birth, which has been defined by either the Swedish Tax Agency or by Statistics Sweden.

#### *Country of birth, father and mother*

For relationships involving parent-child, the coverage is better for Swedish-born than foreign-born persons. This is because foreign born children can immigrate without an accompanying parent, or if the child immigrates as an adult the relationship is only registered if it is confirmed via, for example, a birth certificate. Coverage is also worse for persons born in Sweden in the 1930s and earlier (see the table below).

**Number of people in the Total Population Register in 2016 who are missing information on the country of birth of the mother and father respectively**

Year of birth	Own country of birth	Number of persons	Mother's country of birth missing, %	Father's country of birth missing, %
Before 1930	Sweden	165385	94	95
Before 1930	Others	17977	99	99
1930s	Sweden	457575	28	36
1930s	Others	68150	92	95
1940s	Sweden	914863	4	10
1940s	Others	131619	87	90
1950s	Sweden	935794	1	3
1950s	Others	195334	83	86
1960s	Sweden	1029241	0	2
1960s	Others	268577	82	86
1970s	Sweden	952953	0	1
1970s	Others	322738	83	87
1980s	Sweden	938085	0	1
1980s	Others	371953	76	80
1990s	Sweden	1027791	0	1
1990s	Others	225320	51	63
2000s	Sweden	992888	0	1
2000s	Others	138559	13	30
2010s	Sweden	796081	0	2
2010s	Others	44269	7	16

*Citizenship*

The variable has a small item non-response, barely 11 000 persons have citizenship in a country which is now not a valid country. When the Swedish Tax Agency does not know the citizenship of the person, this is indicated as Under investigation, or Unknown. The Swedish Tax Agency can also specify Country ceased to apply, if citizenship was in a country that no longer exists, such as Serbia-Montenegro.

*2.2.4 Data processing*

Data registration is carried out by the local tax authorities. When the data is prepared, registered and processed in the population register, manual and automated checks are implemented that can generate corrections.

Once the data is reported to Statistics Sweden, they are reviewed in the various stages of processing before they are approved for input into the Total Population Register's final observation register. Reviewing policies are developed in cooperation with representatives of the population statistics and each review is logged and stored in SQL tables.

### 2.2.5 *Model assumptions*

#### ***Cohabitants***

Cohabitant refers to persons who are not married/registered partners with each other, but who live together in marriage-like conditions. Two people who are registered in the same dwelling and have one or more children in common (biological or adoptive children), are defined as cohabitants. To form cohabitants of persons without common children, a model is used based on the criteria below:

- Persons registered in the same dwelling
- Persons at least 18 years old
- Persons are of the opposite sex
- The age difference between the persons is less than 15 years
- The persons are not closely related
- Only *one* possible cohabitant couple can be formed within a household

Studies have shown that this model give the lowest percentage of incorrect classifications compared with the Labour Force Survey, which contains a question on the composition of the household. The other Nordic countries already use similar model assumptions. The model means that statistics show too few cohabitant couples, but that erroneous cohabitant couples may be formed. The overall effect is that the number of households of the type "Cohabiting without children" is underestimated by about 10 percent.

#### ***Households***

A household consists of all persons registered in the same dwelling. However, there is a 2.1 percent non-response among the population where a dwelling is missing and it has not been possible to form households for these. In the autumn 2016, a method was produced that imputes households using data on population registration by property and relationships in the Total Population Register. In this way, households are created for most of the 212 000 people for whom information is missing about dwellings. No households are created for only about 18 000 people, who are registered with no known residence or in a "child household" (households in which all residents are younger than 16 years).

Previous years for which household information has been produced, 2011-2015, have been revised, and a new variable has been created that shows whether the household has been imputed or not.

## **2.3 Census evaluation**

In 2011, the first entirely register-based Population and Housing Census was carried out in Sweden. An evaluation of the 2011 Census was done. It measures the difference between actual and registered residence<sup>5</sup>.

Data on household type, household size and household status is based on the household that can be created based on registration by dwelling. The quality of

---

<sup>5</sup> Werner, Peter (2014). *Evalvering av Census 2011*. Statistics Sweden, Report 2014-02-10

data on the household depends to a large extent on how well the population registration manages to match the household's composition.

### *2.3.1 The number of residents in households*

The evaluation shows that 92.1 percent ( $\pm 0.8$  percent) of households in the 2011 Census were classified correctly with regard to the number of residents. The largest percentage of errors were in the households with 6 or more residents. Among other classes, the percentage of errors was largest in households with 3 or 5 residents by 17.9 percent and 22.2 percent erroneously classified respectively. The erroneously classified three-person households are mainly one- or two-person households.

The net errors show that the number of one- and two-person households are underestimated by 10.3 percent and 9.3 percent respectively in the 2011 Census, while the number households with 5 or more residents are overestimated instead. For three- or four-person households, the net error cannot with certainty be regarded as differing from zero.

For different municipality groups, the percentage of erroneously classified households varies, on the whole, between 7.4 percent (municipalities with more than 70 000 inhabitants) and 9.0 percent (Greater Stockholm). The corresponding proportion for the country as a whole is 7.9 percent. The differences lie within the statistical margin of error.

### *2.3.2 Type of household*

Household types classified by household type in the following classes:

- a. Single-person households
- b. Households with single parent with children
- c. Households with cohabitants without children
- d. Households with cohabitants with children
- e. Multi-person households (persons without common relationships)
- f. Households with two or more families

In total, 93.9 percent ( $\pm 0.7$  percent) of dwelling households are classified correctly in the 2011 Census with regard to the variable household type in the above classes. The percentage of erroneously classified households is highest in the categories "Multi-person households" and "Households with two or more families". In other categories, the percentage of erroneously classified households is highest in the category "Households with single parents and children" (9.3 percent). Most of these erroneously classified households should constitute "Single-person households" or "Households with cohabitants with children". The percentage of erroneously classified households is lowest in the category "Single-person households" (2.0 percent).

The net errors show that the number of single-person households and households with cohabitants without children are underestimated by 12.1 percent and 10.1 percent respectively in the 2011 Census, while instead, the number multi-person households and households with two or more families are overestimated. In households with single parents with children and households with



cohabitants with children, the net error cannot with certainty be said to differ from zero.

In different municipality groups, the percentage of erroneously classified households varies, in total, by between 5.3 percent (other municipalities) and 7.8 percent (Greater Gothenburg). The corresponding proportion for the country as a whole is 6.1 percent. The differences lie within the statistical margin of error.

## **B.3 Timeliness**

### **3.1 Frequency**

The final observation registers are produced annually. Preliminary variants with reference points in time other than 20161231 and the entire year 2016 are produced every month or quarter.

### **3.2 Production time**

The production time is just over a month. This means that the registers that refer to 20161231 and the entire year 2016 are ready in the beginning of February.

### **3.3 Punctuality**

The registers for 20161231 and the entire year 2016 were ready on time, based on an agreement with the Population Register Unit.

## **B.4 Comparability and coherence**

### **4.1 Comparability over time**

The data in the Total Population Register system comes from the Swedish population registration system and is therefore dependent on the definitions and rules applied there. The content of the population register has remained largely unchanged since 1968, when the Total Population Register system was created. Some important changes that have affect comparability over time are presented below.

#### *Assisted reproduction*

From 1 July 2005, assisted conception with donated sperm is also carried out by Swedish health care services for women who are a registered partner or cohabiting with another woman. The partner or cohabitant is - together with the fertilised woman - regarded as the parent of the child who is born, provided that she has consented to the treatment and the likelihood that the child was conceived through it. Parenthood will be determined by confirmation or judgment.

#### *Civil status*

Legislation on divorces was changed on 1 January 1974. In brief, these changes included a replacement of the year of judicial separation with a six-month period for consideration. If the spouses do not have children under the age of 16 and both are in agreement of divorce, no time for consideration is needed. The sharp increase in the number of divorces during 1974 and 1975 must be seen against this background.

In 1990, the rules for the widow's pension were changed. Many cohabitants wanted to secure their right to a widow's/widower's pension, resulting in a dramatic rise in the number of marriages in 1989. Nearly 60 percent of all marriages in 1989 took place in December.

Between 1 January 1995 and 30 April 2009, it was possible to enter into a registered partnership. On 1 May 2009, a gender-neutral marriage law entered into force which repealed the law on registered partnership. Since then, it is no longer possible to enter into registered partnerships in Sweden. People who are registered partners can, if they wish, convert their partnership into marriage by notifying the Swedish Tax Agency.

An amendment in the Marriage Code means that no one under the age of 18 years may marry. The amendment entered into force on 1 July 2014.

### *Reorganisation of the population register*

On 1 July 1991, the local tax offices (now the Swedish Tax Agency) took over responsibility from parish offices for the population register at the local level. In connection with the reorganisation, the old regulations were replaced with a new legal text. The regulations are nearly the same as the previous ones. However, one of the changes was that persons over age 17 in post-upper secondary education would be registered at the address where they reside. Previously, these students were registered at their parents' address. The new law has been gradually increasing the number of moves of people in the ages 19 to 24, as students have increasingly registered at their place of study. The population growth reported in subsequent years may partly be an effect of the new Population Registration Act.

### *Births*

In 1973, notification of newborns to Statistics Sweden was changed. Previously, the child's ordinal position (of child in family) was stated only for children born in lasting marriages entered in 1950 or later. This ordinal position number referred to all of the spouses' children including both live births and stillborn. Beginning in mid-1973, the notification of births contains instead the number of children that the mother has previously given birth to, regardless of civil status, live or stillborn. Statistics Sweden has calculated this upwards to refer to the ordinal position of the newborn child.

On 1 July 1979 legislation on citizenship was changed. This change refers to children whose fathers are foreign citizens and whose mothers are Swedish citizens. Prior to 1 July 1979, these children were considered foreign citizens at birth, but today they are Swedish citizens. The decision that children of Swedish mothers are always Swedish citizens allows the child, at birth, a greater possibility of acquiring dual citizenship. However, only Swedish citizenship is recorded in the Swedish population register.

In January 2014, the Population Registration Act was amended so that a child born abroad is normally registered only once they immigrate to Sweden and if the requirements to be entered in the population register are met at that time. If the child's parent is employed abroad in the service of the government, the child is to be entered in the population register at birth.

Until 1 July 2008, a stillborn child referred to a newborn who died after the end of the twenty-eighth week of pregnancy (or, in uncertain cases, at least 35 cm long). Beginning 1 July 2008, a stillborn child refers to a newborn who died after the end of the twenty-second week of pregnancy (or, in uncertain cases, at least 25 cm long). The amendment led to an increase in the number of stillbirths compared with before.

### ***Households***

The last population and housing census in Sweden was carried out in 1990, in which all households were asked to respond to a questionnaire about those who lived in the household and the size of the dwelling. Since then, it has not been possible to produce comprehensive household statistics in another way than via sample surveys, such as Household finances and the Living Conditions Survey.

Since 2011, population registration is supplemented with information about people's dwelling number, which makes it possible to produce register-based household statistics.

### **Changes in classifications in county, municipality and parishes**

Changes in classifications hamper the comparability of statistics over time. More information on the changes that have been implemented is available on Statistics Sweden's website, [www.scb.se/regionalt](http://www.scb.se/regionalt).

### ***Domestic migration***

Before 1998, year and week of domestic migration registration were used as point of time for migration. From 1998 onwards, the actual moving date is registered if the move was reported within one week. If notification of a move is made more than one week after the actual moving day, the new registration applies from the day the notification is received at the Swedish Tax Agency.

### ***Changes in citizenship***

Starting in 1974, changes to Swedish citizenship are reported according to the year the decision was made.

Since 2001, it is possible for Swedish citizens to have additional citizenship. However, the population register at the Swedish Tax Agency, and therefore also the Total Population Register, only contains information about the Swedish citizenship.

### ***Personal identity number***

Every year, nearly a thousand people change their personal identity number for various reasons. The most common reason is that an incorrect birth date or incorrect sex has been registered in connection with immigration or birth. Due to the changes in personal identity numbers, a person may be found in a register with more than one personal identity number, or in different registers with different personal identity numbers. This creates problems when several personal identity numbers can refer to the same individual. Statistics Sweden has procedures for dealing with this problem.

### *Emigration*

Today, the Swedish Tax Agency carries out regular checks of persons whose residence has been unknown for two years. If the person is not found after an investigation, the person is deregistered from the population register as non-existent. This is reported in the register on emigration. Before registration by dwelling, the Swedish Tax Agency carried out a special measure in 2010 to improve quality of address information in the population register. It led to a deregistration of 4 170 persons as non-existent that year. Normally, the number is between 500-1000 persons in a year.

There are also people who have emigrated to an unknown country, which means that the Swedish Tax Agency has received indications that the person has emigrated, but there is no information to which country. The number of emigrants to an unknown country varies sharply over the years, from 2000 to just over 5000 persons.

In 2014 and 2015, the Swedish Tax Agency carried out study of all registered persons with expired time-limited residence permits. In total, 13 500 persons were investigated, and 90 percent could be deregistered as having emigrated. Most of them were deregistered without contact by the Swedish Tax Agency, and they were therefore registered as having emigrated to an unknown country.

## **4.3 Coherence with other registers/data**

The Total Population Register is used as a basis for many registers and statistical products, for example as a basis for the production of statistics, as a sampling frame and auxiliary information for calibration, and as a data source for other registers and surveys. The Total Population Register is often governing with regard to units, variables, populations, and reference times. The extensive coherence of data means that a large part of individual statistics are harmonised and to a large extent comparable. However, there may be differences in population delineations and reference times.

The Total Population Register also meets most of the requirements for producing statistics that are recommended and in demand by Swedish and international organisations. The content of the register, to a large extent, is aligned with international standards. Data about persons who stay in Sweden without being registered (the time spent in Sweden is less than one year), "short term migration", is frequently asked for, but is not available. The same applies to persons who are registered here but who intend to stay abroad for less than one year.

## **B.5 Accessibility and clarity**

### **5.1 Forms of dissemination**

Meetings with a focus on common issues concerning quality are held with Statistics Sweden, the Swedish Tax Agency, Lantmäteriet (the Swedish mapping, cadastral and land registration authority) and the Swedish Association of Local Authorities and Regions three times a year.

The Total Population Register has an internal user council, with representatives of the units that are the major users of the registers.

When the registers are made available to users, an e-mail is sent to internal users at Statistics Sweden.

## **5.2 Documentation**

Variable lists and data amount descriptions are presented in MetaPlus, which is available on Statistics Sweden's website.

## **5.3 Access to the final observation register**

Statistics Sweden conducts special processing of all years of the register on a commission basis. After special consideration, researchers may gain access to anonymised microdata for own processing in, for example MONA.

Content questions:

*Contact person:* Karin Wegfors

*Unit:* BV/REG

*Telephone:* +46 10 479 64 98

*E-mail:* [karin.wegfors@scb.se](mailto:karin.wegfors@scb.se)

Microdata retrieval:

*Contact person:* Kerstin Båsjö

*Unit:* BV/MIKRO

*Telephone:* +46 10 479 61 23

*E-mail:* [befolkning.forskning@scb.se](mailto:befolkning.forskning@scb.se)

Statistics assignment:

*Contact person:* Statistical services

*Unit:*

*Telephone:* +46 10 479 50 00

*E-mail:* [www.scb.se/fragaoss](http://www.scb.se/fragaoss)

## C. Data collection and processing

### C.1 Measurement instruments

The quality of the register is mostly determined by the administrative systems on which the register is built. As a rule, data formation in the administrative systems differs from Statistics Sweden's data collection. Even if there are respondents who fill in forms in the administrative systems, the requirements for the provision of data are completely different and are governed by administrative rules and legislation.

The Total Population Register is based on administrative data from the Swedish Tax Agency.

### C.2 Data collection process

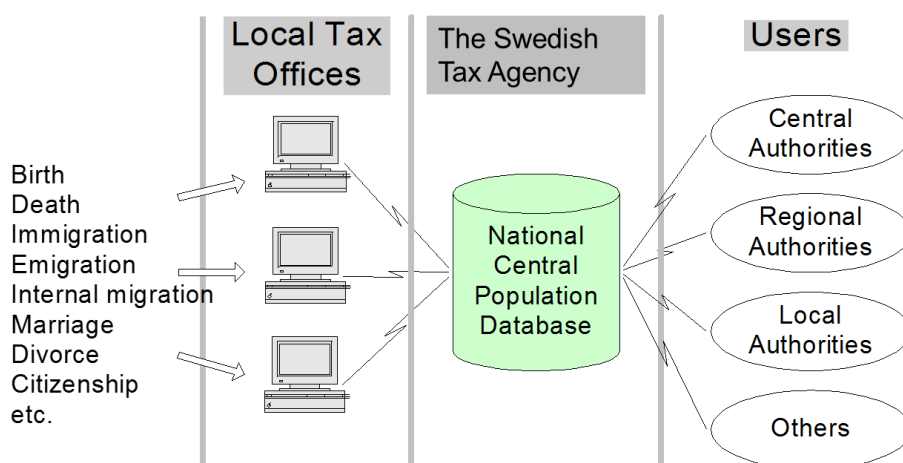
#### 2.1 Data collection process with external suppliers

There are number of laws and ordinances that regulate the content and notifications to Statistics Sweden concerning population registration.

- The Population Registration Act (1991:481) and the National Registration Ordinance (1991:749)
- The Personal Data Act (2001:182) and the Ordinance on the processing of personal data in the Swedish Tax Agency's population registration activities (2001:589)
- Ordinance with directives for Statistics Sweden (2016:822)

Several other laws are applied in population registration, such as the Name Act, the Citizenship Act, and the Marriage Code.

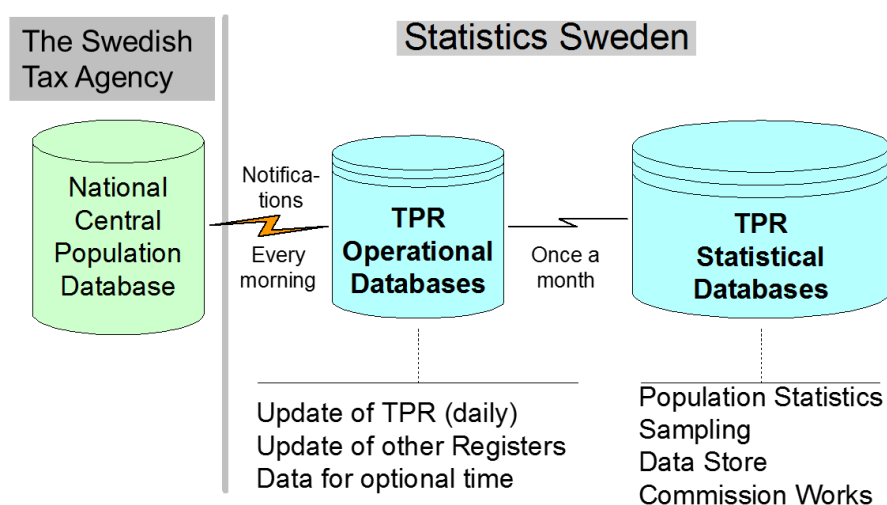
#### Population registration system



Population registration is the fundamental registration of the population in Sweden. Population registration contains information about identity, residence and family relationships. The Swedish Tax Agency is responsible for population registration. Operations are carried out in tax offices across the country, where registration is done into the national population registration database. The purpose of population registration, in accordance with the appropriation directions, is that data in the population register should reflect the population's actual residence, identity, and family law conditions, to ensure that various functions in society receive correct information for decisions and measures.

## 2.2 Data collection process with producers of registers

### Total Population Register system



At the end of 1997, a basic retrieval was made from the Swedish Tax Agency's population register database. Since then, the Total Population Register receives regular notifications on changed data in the population register. Notifications are transferred automatically five times a week, Tuesday to Saturday, from the Swedish Tax Agency to the Total Population Register via a joint service for government agencies for sending data to each other. The notifications contain data about new persons, closing information about persons, or various types of changes. Between 10 000-15 000 notifications are received on a regular day. During the course of a year, there are about three million notifications in total.

In connection with the daily data collection, the information is checked to ensure that it was intended for Statistics Sweden, and that all data has been delivered and transferred. The notification file has an identity marker and information about the number of items, which can be compared with the log that counts the items in connection with the transfer.

Data can be ordered using the form from the Swedish Tax Agency. The form with instructions is available on the Swedish Tax Agency's website, at [www.skatteverket.se](http://www.skatteverket.se). The form contains a reference to Navet concerning

documentation, including General terms and conditions, and a price list. The form thereby functions as a quote, unless otherwise specified. An agreement is concluded when an order has arrived at the Swedish Tax Agency. Once the order has been registered, Navet issues an order confirmation. The order form and the order confirmation constitute the documentation on the agreement with the Swedish Tax Agency.

### **C.3 Data processing**

#### **3.1 Data processing with external suppliers**

Data preparation in the form of survey work, data registration, review, coding, checks and correction of data that is carried out regularly within the framework of population registration naturally is most important for the quality of the data. The rules and procedures that apply are listed in the electronic handbook on population registration that is used in this work, and to which Statistics Sweden has been given access.

#### **3.2 Data processing with the producer of the register**

There are a few governing principles that apply for review and correction of data in the Total Population Register production database and in the final observation registers:

<b>Basic data in the production database</b>	<b>Final observation registers</b>
Daily update	Monthly production
Save everything	Correct
Date everything	Derive
Do not change anything	Impute
Distinguish everything	Integrate

#### **Checks in input and updates**

Certain checks are carried out in connection with reception and formatting of notified data, and on updating the production database. The checks are made as in-unit checks, where data is tested with respect to validity and consistency. In connection with updating, the values in the notifications are tested for consistency in relation to existing values in the production database.

#### **Checks in output**

In the production of the final observation registers, renewed in-unit checks are carried out with validity and consistency tests. The content of all observation registers is checked, both stock and events registers. The checks can lead to own corrections to data in the registers.