Model to forecast the re-immigration of Swedish-born

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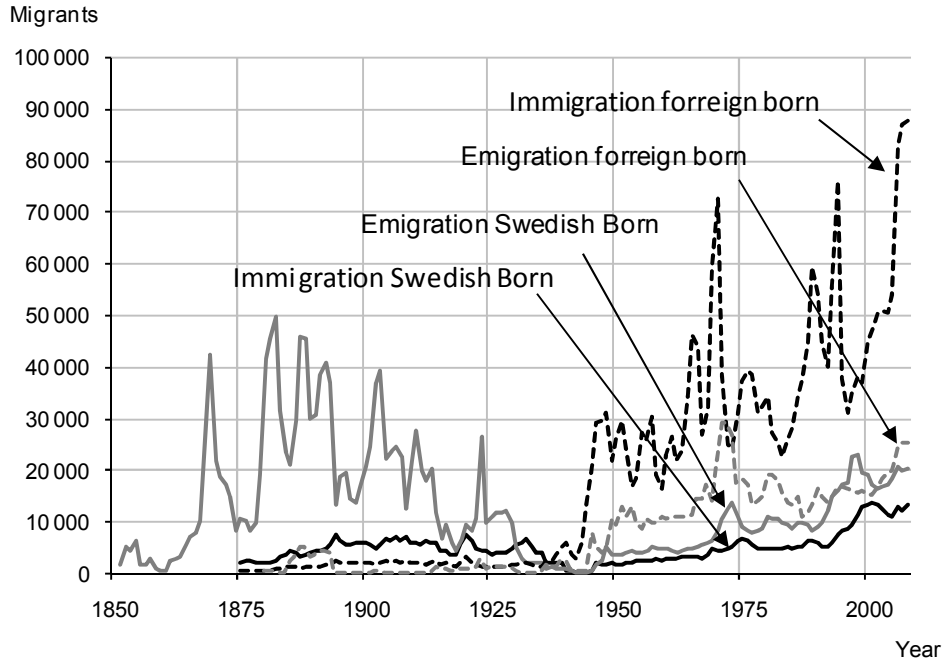
Background

During the 1990s, emigration of Swedish-born doubled, from around 10 000 persons per year in the 1970s and 1980s to more than 20 000 persons in 1998. Sweden born is today one of the largest immigrant groups. Unlike other immigrant groups, there is greater ability to construct a mathematical model to forecast immigration of Sweden born. The framework of how many persons that can re-immigrate is set by the number of persons emigrating, which in turn can be estimated based on emigration risks.

Graph 1. Immi- and emigration by country of birth 1970–2008.



Aim of study

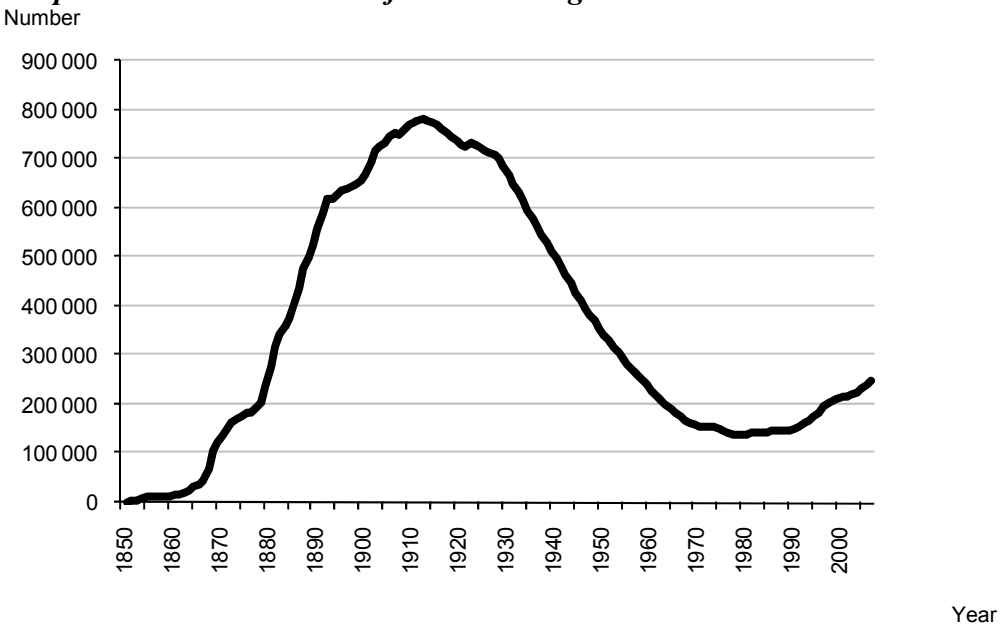
The purpose of the study is to model the re-immigration of Swedish born persons.

Data and method

To estimate re-immigration of Swedish-born, a model has been produced where information on immigration and emigration 1851-2007 has been the basis for building up a population of "Swedish-born living abroad". For each

year Sweden-born persons that have emigrated have been added to the Swedish population living abroad, re-migrants been subtracted and the expatriate Swedish population has been reduced by the same risk of death as observed for Swedes living in Sweden. According to these estimates 780 000 Swedes lived abroad in the early 1900s. Thereafter, the number of Sweden-born living abroad decreased until the 1980s, when the number of expatriate Swedes began to increase.

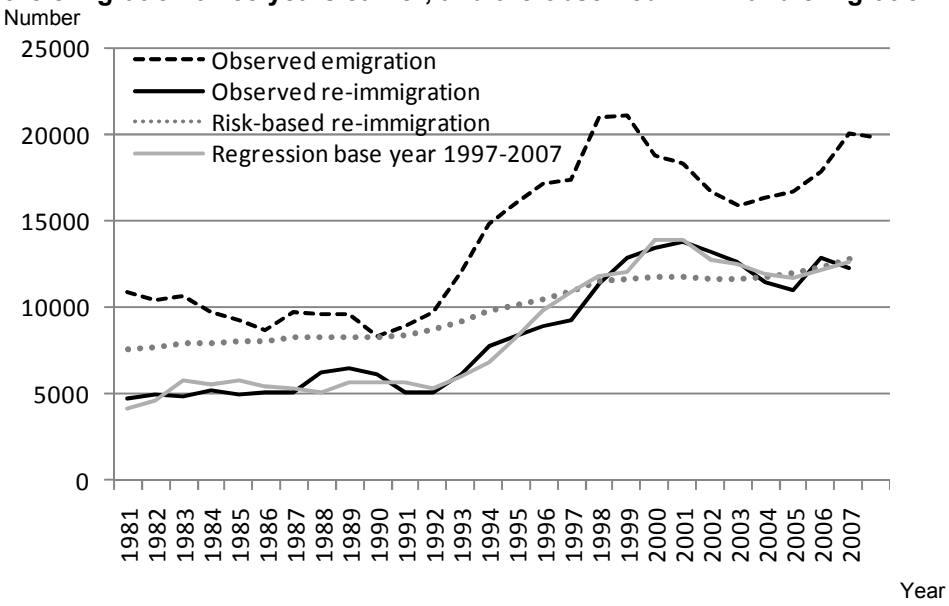
Graph 2 Estimated number of Swedes living abroad 1851-2007



Number of re-immigrated Swedes is divided by the number of Swedes living abroad, to create age- and sex-specific re-immigration rates. Re-immigration rates are calculated for the years 2002-2005 and 2007. The year 2006 is missing here because the Swedish-born children of those persons who received residence permits when the temporary asylum legislation was in effect, drove up the risks somewhat for the youngest ages.

An estimation of immigration based only on emigration rates does not follow the observed development particularly well (see graph 3). However, a linear regression where immigration created by re-immigration rates is combined with information on emigration three years earlier gives quite good results. This regression has an explanation rate of 97 percent when based on the years 1981-2007. Such a regression equation created for the years 1998-2007 shows development that is close to the results even for the years before 1998 (see graph 3). Since the model seems to work well to estimate development backwards in time, it is assumed that the model can also be used to forecast future re-immigration of Swedish-born.

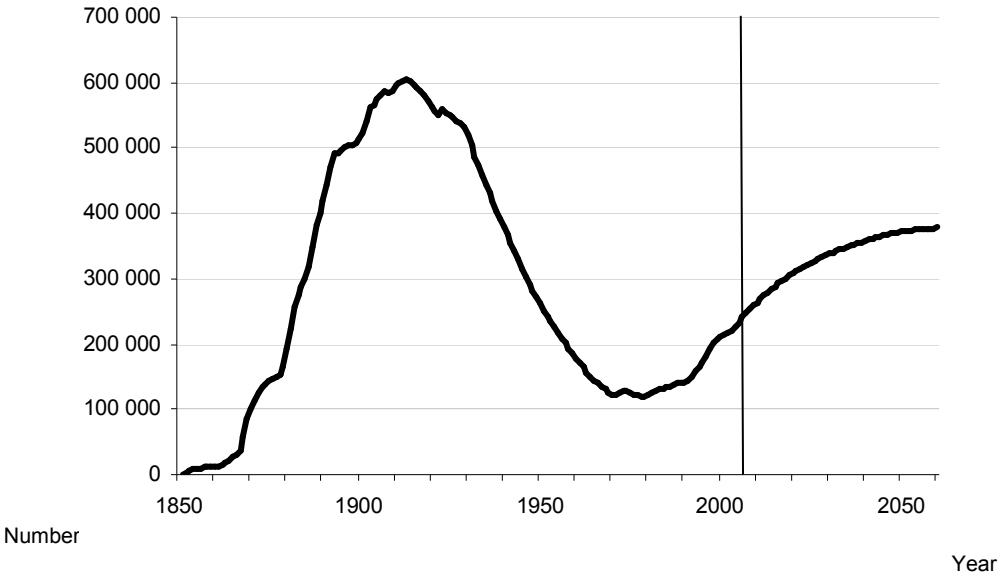
Graph 3. Forecast for the years 1981-2007 based on re-immigration risks and regression model where the re-immigration risks are combined with data for the emigration three years earlier, and the observed immi- and emigration.



Results

The re-immigration model was used in Statistics Swedens latest official population projection. Results show that re-immigration of Swedish-born is expected to increase in the future. At the beginning of the forecast period, it is assumed that the number of Swedish-born abroad increases rather sharply, and then stabilises at a level just under 400 000 (see graph 4) at the end of the forecast period year 2060. During the forecast period, it is assumed that the re-immigration increase from about 15 000 to just under 20 000 at the end of the forecast period (se graph 5).

Graph 4. Estimated number of Swedes living abroad 1851-2007 and projection 2008–2060



Graph 5. Immigration and emigration of Swedish-born1970–2008 and projection 2009– 2060. Number