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Projections of the immigrant population living in Denmark

Submitted by Statistics Denmark¹.

The purpose of this article is to give an account of the methodology used in preparing projections of the immigrant population living in Denmark. The account is supplemented with examples of projections that were published in December 1997ⁱ.

1. Introduction

Need for new projections

In 1991, Statistics Denmark published the only existing forecasts of possible trends in the number of immigrants and their descendants - at that time until the year 2020. Since 1991, the number of immigrants and descendants have increased by some 107,000 persons, and over the years 1995 and 1996 there was a sharp increase, owing to a large number of refugees from, e.g. Bosnia-Herzegovina and Somalia. Finally the issue of refugees and immigrants has become an increasingly debatable topic in Denmark.

Background

A constituent part of the basis for the debate and the political decisions, which are taken with respect to immigrants, is based on Statistics Denmark's current statistics. Statistics Denmark receives regularly inquiries about the future expected number of immigrants and descendants in Denmark. Hitherto, we have only been able to refer to the results compiled in the projections from 1991. This is now 6 years ago, and in the light of this, Statistics Denmark decided in the spring of 1997 to prepare new projections.

General purpose

The purpose of Statistics Denmark to prepare projections of the immigrant population is to provide a picture of possible trends in the future number of immigrants and their descendants, analysed by sex, age and country of origin. It is a well-known fact that population projections to a large extent hinge on the assumptions set up, with respect to the future number of births (fertility) and deaths and the number of persons emigrating to and from Denmark, respectively (net immigration).

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ⁱ The present article is an edited version of the article published 12 December 1997; only available in Danish.

2. Basic concepts

Statistical definition of immigrants and descendants

In preparing projections of the expected number of immigrants and their descendants, it is a prerequisite that the two population groups are defined. The way in which Statistics Denmark define the two groups is adapted to the possibilities of obtaining information on the population resident in Denmark, particularly information regarding place of birth and citizenship. All basic data on the population in Denmark is derived from the Register of Population Statistics operated by Statistics Denmark. This register is based on annual extracts from the Central Population Register (CPR), which is an administrative register.

The Register of Population Statistics contain individual-based information on the total population resident in Denmark and is a basic element in the system of register-based statistics in Statistics Denmarkⁱⁱ. The most central items of information covered in the register in setting up a statistical definition of immigrants and their descendants are:

- Person number
- Age
- Sex
- Place of birth
- Citizenship
- Person number of father
- Person number of mother

By performing a matching procedure on person numbers a record for each person resident in Denmark is created, containing the items mentioned above, supplemented with place of birth and citizenship of mother and father. For each year in the period 1980 to 1997 a data set with the described content is available (furthermore, information is available on address of domicile, marital status, etc. but is not of relevance in this context).

Definitions

Against the background of the above information the population is classified to three groups: *immigrants*, *descendants* and *others*. The following definitions are used:

Immigrant

An *immigrant* is defined as a person born abroad, whose parents are both (or one of them if there is no available information on the other parent) foreign citizens or were both born abroad. If there is no available information on either of the parents, and the person was born abroad, the person is also defined as an *immigrant*.

Descendant

A *descendant* is defined as a person born in Denmark whose parents (or one of them if there is no available information on the other parent) are immigrants or descendants. If there is no available information on either of the parents and the person in question is a foreign citizen, the person is also defined as a *descendant*.

Others

The group *others* consists of persons, where at least one of the parents is a Danish citizen born in Denmark, regardless of the person's own country of birth and citizenship. If there is no available information on either of the parents, the person is classified to the group *others*, if he/she is a Danish citizen born in Denmark.

It can be seen that in the definitions emphasis is attached to information on the persons place of birth supplemented with place of birth and citizenship of the

ⁱⁱ See, *Statistics on persons in Denmark - a register-based statistical system*, Eurostat 1994.

parents. Depending on the persons place of birth information for the parents is decisive for the group to which each person is classified. The only cases, where information on place of birth and/or citizenship of the parents is not included is instances where there is no available information on the parents. These instances occur when neither of the parents have been living in Denmark as of 1 January 1980 to 1997.

3. Projection method

In this section, the method or model used for projecting the future expected number of immigrants and descendants is described. In this connection, an account is given in respect of the fact that a certain share of live births by immigrant- and descendant-women, respectively, is classified to the group *others* - a factor which is taken into account in connection with the projections.

3.1 The method in general

The basic method

The basic method used in Statistics Denmark's annual population forecasts can be described as follows:

Population at beginning of year
+ Annual number of live births
+ Annual net immigration
- Annual number of deaths
= Population at end of year

Specific factors

This method also forms the basis of the projections of the number of immigrants. However, there is a difference in the practical implementation in the population forecasts and in the projections of the number of immigrants and their descendants.

Live births by immigrants are regarded as descendants ...

In the general population forecast live births are added to the existing population. In the projections of immigrants and their descendants the two groups are projected separately, and consequently live births by immigrant- women should as a starting point be added to the population of descendants.

... and analyses show that a certain share is classified to the group others

In addition, empirical analyses show that a proportion of live births by immigrant-women and descendant-women, respectively, is classified to the group *others*. There are two factors instrumental in reaching this result:

1. If an immigrant- or descendant-woman has a child with a man classified to the group *others*, the child is by definition classified to the group *others*.
2. If a descendant-woman (who by definition was born in Denmark) is a Danish citizen, then the child is classified to the group *others*, regardless of the place of birth and citizenship of the mother.

In this connection it is taken into account that some people obtain Danish citizenship and that this can have some implications on the immigrant-status of the person in question and his/her children. If e.g. a single descendant-mother with foreign citizenship obtains Danish citizenship, then her children are re-classified from descendants to the group *others*. Furthermore, if the single descendant-woman has no parents registered as resident in Denmark, she is also re-classified.

**Results from the
empirical analyses**

In this context, a count of the immigrant-status for 0-year-olds born in Denmark as of 1 January 1995 to 1997 has been effected, where the mother is an immigrant and descendant, respectively. The results appearing from tables 1 and 2 are also analysed by country of origin of the mother.

Table 1.

Immigrant-status for 0-year-olds in Denmark as of 1 January for the years 1995 to 1997, where the mother is an immigrant, analysed by country of origin of the mother

Immigrant-status for 0-year-olds as of 1 January	Number of 0-year-olds where the mother is an immigrant		Percentage distribution	
	Developed countries	Less developed countries	Developed countries	Less developed countries
1 January 1995, total	1,687	4,561	100.0	100.0
Descendants	709	4,049	42.0	88.8
Others	978	512	58.0	11.2
1 January 1996, total	1,908	4,734	100.0	100.0
Descendants	972	4,252	50.9	89.8
Others	936	482	49.1	10.2
1 January 1997, total	2,098	4,974	100.0	100.0
Descendants	1,130	4,433	53.9	89.1
Others	968	541	46.1	10.9
Average	1,898	4,756	100.0	100.0
Descendants	937	4,244	49.4	89.2
Others	961	512	50.6	10.8

If the mother is an immigrant, the share of 0-year-olds classified to the group *others* is, on average, 50.6 pct. and 10.8 pct. for developed and less developed countries, respectively. If the mother is a descendant, the corresponding shares reach 88.6 pct. and 67.9 pct., see table 2.

Table 2.

Immigrant-status for 0-year-olds in Denmark as of 1 January for the years 1994 to 1996, where the mother is a descendant, analysed by country of origin of the mother

Immigrant-status for 0-year-olds as of 1 January	Number of 0-year-olds where the mother is a descendant		Percentage distribution	
	Developed countries	Less developed countries	Developed countries	Less developed countries
1 January 1995, total	178	77	100.0	100.0
Descendants	24	32	13.5	41.6
Others	154	45	86.5	58.4
1 January 1996, total	172	87	100.0	100.0
Descendants	18	20	10.5	23.0
Others	154	67	89.5	77.0
1 January 1997, total	193	116	100.0	100.0
Descendants	20	38	10.4	32.8
Others	173	78	89.6	67.2
Average	181	93	100.0	100.0
Descendants	21	30	11.4	32.1
Others	160	63	88.6	67.9

The results are implemented in the model ...

The phenomenon analysed above has to be taken into account in the projections, as they are only prepared for the two groups: *immigrants* and *descendants* according to the current definitions. A factor of correction has thus been incorporated in the model, which for each year's number of live births, deducts 50.6 pct. and 10.8 pct., respectively, depending on whether the live births are by immigrant-women from developed countries or less developed countries. For live births by descendant-women, the corresponding factors of correction reach 88.6 pct. and 67.9 pct.

... and the consequences are monitored for one of the projected trends

Owing to the difficulties in assessing the importance of these corrections for trends in the future expected number of immigrants and their descendants, a comparison has been made for one of the projected trends, where the factors of correction are included and excluded, respectively, see chapter 5.

The number of naturalisations are of significance

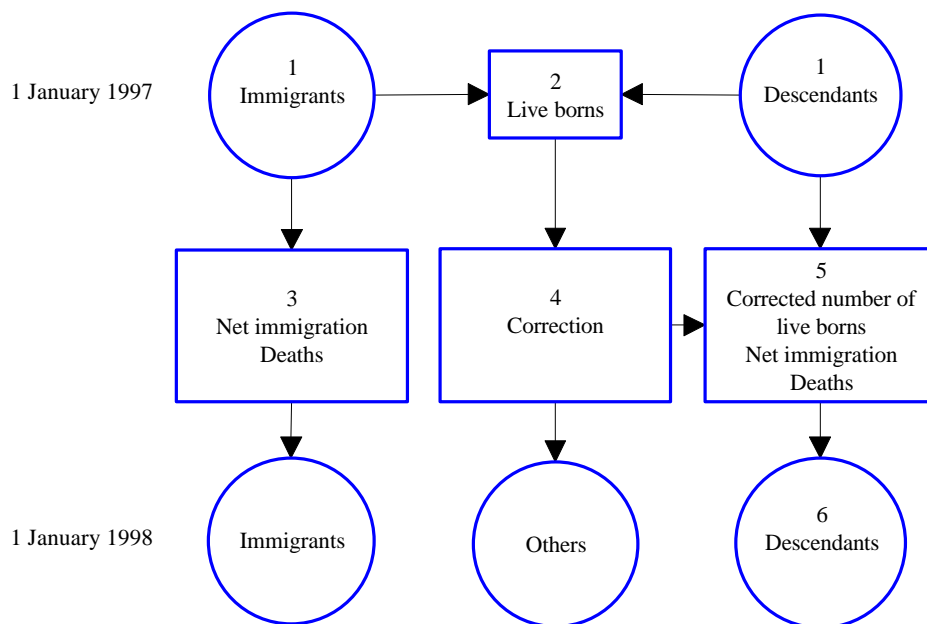
In summing up the above-mentioned corrections it should be noted that future trends, against the background of how the three population groups are defined, hinge on the number of naturalisations.

Method

The method for projecting the number of immigrants and their descendants can in these circumstances be roughly illustrated as in figure 1.

Figure 1.

Projected trends in the number of immigrants and their descendants



1. On 1 January 1997, there is a basic population of immigrants and their descendants, analysed by 1-year age groups and sex.
2. Women aged 15-49 give birth to children in accordance with the established fertility-assumption.
3. During the year a net immigration of immigrants takes place, and some die (whereby the projection of immigrants has been effected until 1998).
4. The number of live births by immigrant- and descendant-women are adjusted in accordance with the observed pattern, with respect to the immigrant-status of the 0-year-olds.

5. The adjusted number of live births (0-year-olds) are added to the basic population of descendants, and any net immigration is also taken into account, and for the total descendant-population the number of deaths are estimated.
6. The result is a projected number of descendants as of 1 January 1998.

The above procedure is repeated successively until the final year in the period of projections, and thereby figures for the expected number of immigrants and their descendants are available, subject to the assumptions given for each year in the period 1998 to the year 2020, analysed by sex and 1-year age groups.

4. Key figures for the period 1991 to 1997

To provide a picture of the size of the populations that are projected and to form a basis for the setting up of possible future trends in fertility and net immigration, key figures for these areas are given below. All figures are based on total counts from The Register of Population Statistics.

4.1 The number of immigrants and their descendants

To begin with tables 3 and 4 show the size and age structure of the populations that are being projected.

Table 3. Number of immigrants on 1 January in selected years in the period 1991 to 1997, analysed by more or less developed countries and age

	1991	1993	1995	1996	1997
Immigrants, total	189,649	208,865	224,995	249,885	265,794
Developed countries	103,520	107,439	112,763	132,170	139,920
<i>In pct. of total population</i>	<i>2.0</i>	<i>2.1</i>	<i>2.2</i>	<i>2.5</i>	<i>2.7</i>
0-6 years	1,479	1,561	1,744	3,519	3,761
7-15 years	3,166	3,541	3,872	7,103	8,079
16-19 years	2,434	2,618	2,774	3,863	4,351
20-29 years	15,260	16,181	17,339	20,935	22,831
30-39 years	19,932	20,006	21,129	25,579	27,337
40-59 years	37,063	39,402	41,683	45,985	47,798
60 years and over	24,186	24,130	24,222	25,186	25,763
Less developed countries	86,129	101,426	112,232	117,715	125,874
<i>In pct. of total population</i>	<i>1.7</i>	<i>2.0</i>	<i>2.2</i>	<i>2.2</i>	<i>2.4</i>
0-6 years	4,228	3,933	3,334	3,149	3,274
7-15 years	9,334	11,731	12,387	12,746	13,588
16-19 years	5,245	6,447	6,795	6,869	7,383
20-29 years	26,249	28,694	29,883	30,396	31,542
30-39 years	20,753	25,882	30,948	33,329	35,995
40-59 years	16,652	19,592	22,854	24,847	27,270
60 years and over	3,668	5,147	6,031	6,379	6,822

Table 4. Number of descendants on 1 January in selected years in the period 1991 to 1997, analysed by developed and less developed countries and age

	1991	1993	1995	1996	1997
Descendants, total	36,553	44,507	53,464	58,838	64,498
Developed countries	13,528	14,781	16,073	17,245	18,463
<i>In pct. of total population</i>	<i>0.3</i>	<i>0.3</i>	<i>0.3</i>	<i>0.3</i>	<i>0.4</i>
0-6 years	3,138	3,766	4,245	5,033	5,782
7-15 years	2,781	2,794	2,945	2,981	3,105
16-19 years	1,268	1,358	1,306	1,331	1,344
20-29 years	2,210	2,311	2,593	2,675	2,805
30-39 years	2,225	2,425	2,461	2,437	2,387
40-59 years	1,045	1,208	1,592	1,816	2,058
60 years and over	861	919	931	972	982
Less developed countries	23,025	29,726	37,391	41,593	46,035
<i>In pct. of total population</i>	<i>0.4</i>	<i>0.6</i>	<i>0.7</i>	<i>0.8</i>	<i>0.9</i>
0-6 years	13,661	18,119	22,335	24,389	26,324
7-15 years	7,930	8,940	10,822	12,031	13,477
16-19 years	1,111	2,114	2,821	3,165	3,582
20-29 years	166	378	1,210	1,786	2,418
30-39 years	127	142	135	139	135
40-59 years	20	24	58	72	89
60 years and over	10	9	10	11	10

Substantial difference in age structure

In comparing tables 3 and 4, a substantial difference in age structure can be observed between immigrants and their descendants. On 1 January 1997, the share of immigrants aged 0-19 was 11.6 pct. for developed countries and 19.3 pct. for less developed countries, whereas the corresponding shares for descendants reached 55.4 pct. and 94.2 pct.

Age difference from 1991 to 1997

Monitoring developments in the age distribution from 1991 to 1997, there is a difference in years tending towards a larger share of younger immigrants and descendants from developed countries, and an opposite tendency for less developed countries. On 1 January 1991, the share of immigrants aged 0-19 from developed countries reached 6.8 pct. and from less developed countries the share reached 21.8 pct. For descendants the corresponding shares were 53.1 pct. and 98.6 pct.

Developed and less developed countries

Looking at the distribution of immigrants and descendants in general, it can be seen that the developed countries account for a larger share of immigrants, whereas the less developed countries account for a relatively higher number of descendants.

4.2 Births and fertility

Changes in the number of births and in the total fertility over the period 1991 to 1996 appear from tables 5 and 6 on the following page.

Substantial differences in fertility

It can be seen that there are substantial differences between the fertility for women from the two country groups. Immigrant-women from developed countries have a fertility, which is, generally speaking, similar to that of the total population, see last column, however with tendencies in opposed directions. Immigrant-women from less developed countries account for a slightly higher fertility, but there is a declining tendency from 1992 to 1996, unlike the fertility for the total population, which over

the period 1992 to 1995, shows an increasing tendency, and in 1996 a return to the level in 1993. A highly varied picture can be seen for descendant-women. This is mainly due to the fact that the primary statistical data are not so comprehensive, and the figures are therefore subject to margins of uncertainty. As a consequence, variations can be attributed to coincidences as well as actual features of development.

Table 5. The number of live births by immigrant-women and descendant-women 1991 to 1996, analysed by country of origin of the mother

	Immigrant-women			Descendant-women		
	Developed countries	Less developed countries	Total	Developed countries	Less developed countries	Total
1991	1,557	3,696	5,253	164	18	182
1992	1,600	4,143	5,743	180	26	206
1993	1,626	4,376	6,002	196	48	244
1994	1,686	4,573	6,259	178	77	255
1995	1,743	4,718	6,461	172	87	259
1996	2,053	4,953	7,006	195	116	311

Table 6. Total fertility 1991 to 1996 for immigrant- and descendant-women, analysed by developed and less developed countries and fertility for the total population

	Immigrant-women		Descendant-women		Total population
	Developed countries	Less developed countries	Developed countries	Less developed countries	
1991	1.871	3.551	1.483	0.951	1.683
1992	1.870	3.626	1.599	0.379	1.764
1993	1.822	3.504	1.700	1.931	1.749
1994	1.823	3.387	1.550	2.157	1.806
1995	1.689	3.276	1.440	2.490	1.807
1996	1.761	3.234	1.636	1.403	1.747

Fertility for immigrants and descendants as a whole

The total fertility (analysed by 1-year age groups in the interval 15 to 49 years) is incorporated as one of the three main assumptions in connection with the projections. Owing to the margin of uncertainty in the figures for descendants, the total fertility for immigrants and descendants is calculated, as a whole, for more or less developed countries, respectively. This results in the picture below.

Table 7. Total fertility 1991 to 1996 for immigrant- and descendant-women from more or less developed countries and the fertility for the total population

	Developed countries	Less developed countries	Total population
1991	1.810	3.489	1.683
1992	1.831	3.529	1.764
1993	1.805	3.409	1.749
1994	1.782	3.295	1.806
1995	1.659	3.171	1.807
1996	1.731	3.116	1.747
Average 1993-1996	1.744	3.248	1.777

4.3 Trends in immigration and emigration

Net immigration ...

The future net immigration is one of the three factors incorporated in the assumption underlying the projections. Statistics Denmark publishes figures for net immigration at quarterly basis as well as annual basis. These figures indicate the total net immigration, i.e. all persons, regardless of whether they are *immigrants*, *descendants* or persons from the group *others*. In connection with the projections of *immigrants* and *descendants*, it is only net immigration for these two groups that are of interest, see table 8.

Table 8. Immigration and emigration of immigrants and their descendants 1991 to 1996, analysed by developed and less developed countries

	Immigrants			Descendants		
	Immi- gration	Emi- gration	Net immi- gration	Immi- gration	Emi- gration	Net immi- gration
Total						
1991	19,785	8,615	11,170	545	596	-51
1992	19,438	7,568	11,870	563	690	-127
1993	18,294	8,065	10,229	565	682	-117
1994	18,427	8,649	9,778	611	744	-133
1995	35,778	8,916	26,862	1,225	786	439
1996	28,115	10,351	17,764	980	786	194
Developed countries						
1991	9,253	6,276	2,977	297	305	-8
1992	9,059	5,442	3,617	303	338	-35
1993	9,589	5,772	3,817	341	316	25
1994	10,799	6,342	4,457	334	339	-5
1995	27,262	6,388	20,874	809	336	473
1996	16,827	7,664	9,163	527	393	134
Less developed countries						
1991	10,532	2,339	8,193	248	291	-43
1992	10,379	2,126	8,253	260	352	-92
1993	8,705	2,293	6,412	224	366	-142
1994	7,628	2,307	5,321	277	405	-128
1995	8,516	2,528	5,988	416	450	-34
1996	11,288	2,687	8,601	453	393	60

... of immigrants increased sharply in 1995 and 1996

For immigrants a fall can be seen from 1992 to 1994, a sharp increase in 1995, and then again a fall in 1996 to a level which is considerably higher than at the beginning of the 1990's. The development from 1992 to 1994 consist of an increase for immigrants from developed countries, but a sharper fall for immigrants from less developed countries. The sharp increase from 1994 to 1995 must primarily be seen in the light of an increase in the number of immigrants from Bosnia-Herzegovina. Until 1996, there is still a proportionate sharp number of immigrants from, e.g. Bosnia-Herzegovina, and at the same time there is a sharp increase in the number of immigrants from less developed countries, which is mainly caused by an increase in the number of immigrants from Somalia.

Net immigration of descendants show a varied picture

The picture for descendants is more varied. In this respect, it must be borne in mind that descendants by definition were born in Denmark. Immigrated descendants must therefore have emigrated at an earlier time. It should be noted that particularly the figures for immigrants in 1995 and 1996 are influenced by the Bosnian refugees'

children, who are registered as immigrants, but were, in actual fact, born in Denmark.

4.4 Mortality

Same mortality as for the total population

Figures for the third factor - mortality - are not given here. In the projections the same mortality is assumed as in the general population forecasts. First, there is no reason to believe that the mortality-pattern for immigrants and descendants resident in Denmark differs from that of the total population. Second, the primary statistical data for calculating mortality for immigrants and descendants (the so-called mortality rates) are not sufficiently comprehensive. In other words, the populations are "too young". The differences that may be observed from the total population are thus difficult to classify to systematical differences and arbitrary differences, as a result of the limited size of the primary statistical data.

5. Results from the 1997 projections

Selected results from the projections published on 12 December 1997 are presented in section 5.2 below.

Two main forecasts

Before this an introductory description of the underlying assumptions of the two main forecasts for more or less developed countries, respectively, is presented. Finally, see section 5.3, a special forecast is presented for the purpose of monitoring the significance of the corrections incorporated, with respect to the share of live births, which are not classified as descendants.

Country classification by more or less developed countries

The projections of the future number of immigrants and descendants are calculated for two country groups *Developed countries* and *Less Developed countries*, according to UN's definitionⁱⁱⁱ.

All generations are included

The projections incorporate all generations of immigrants. As far as descendants are concerned, second, third and subsequent generations may thus be incorporated. However, in this context it should be noted that against the background of the definitions used, the group comprising third-generation immigrants (or second-generation descendants) is in numerical terms very limited, and the increase during the 1990's has also been very modest. In this respect, it should be noted that in order to be classified as third-generation immigrant, one's parents must be a second-generation immigrant^{iv}, and both parents must also be foreign citizens.

5.1 The assumptions for projections of immigrants and descendants

Below the assumptions behind the projections, in respect of possible future trends in fertility and net-immigration are presented.

Estimates of net immigration in 1997 ...

The future net immigration is by far the most difficult factor to predict, as it is, e.g. determined by political conditions, in Denmark as well as in the rest of the world. Above, figures were only shown for net immigration on an annual basis. As mentioned earlier Statistics Denmark publishes figures for immigration and emigra-

ⁱⁱⁱ See, *World Population Prospects*, UN Population Division, New York 1994.

^{iv} In cases where a child's parents are an immigrant and a descendant, respectively, the child is classified according to the immigrant-status of the mother.

tion of foreign citizens on a quarterly basis, and figures for the 3rd quarter of 1997 were published on 13 November 1997. Our experience shows that there are no noteworthy differences in the net immigration of foreign citizens and immigrants, and there is therefore a good reason to use the quarterly figures mentioned for forecasting net immigration of immigrants for the entire year 1997.

... are based on a comparison of quarterly figures in 1996 and 1997

Comparing the total net immigration from the 1st quarter to the 3rd quarter of 1996, with the 1st quarter to the 3rd quarter of 1997, foreign citizens from developed countries accounted for a fall of 34.7 pct., which covers a relative fall in immigration of 15.0 pct. and a relative increase in emigration of 6.1 pct. Foreign citizens from less developed countries accounted for a fall in net immigration of 19.1 pct., corresponding to a fall in immigration of 16.3 pct. and a fall in emigration of 6.3 pct.

Net immigration of immigrants in 1997 is estimated at 13,200

As an estimate of the total net immigration covering the entire year 1997 for the two groups, it is assumed that the annual relative change from 1996 to 1997 corresponds to the total relative change in the first three quarters of the year, compared with the first three quarters of 1996. Rounded up, this leaves an estimated net immigration of immigrants of 6,200 respective 7,000, from developed and less developed countries.

Net immigration of descendants is set equal to zero

As it appeared from table 8, net immigration of descendants showed a varied pattern of a limited size. For this reason and to ease interpretation of the results obtained in connection with the projections, it is assumed that the net immigration of descendants in all projections is equal to zero. In this way, the future number of descendants is only influenced by the number of live births (by immigrant- as well as descendant-women) and the number of deaths.

Developed countries

As far as the overall fertility is concerned an initial estimate is calculated as the average over the years 1993 to 1996 for immigrants and descendants, which results in an overall fertility of 1.744. On the basis of this, a forecast is assumed where the overall fertility increases by 6 pct. until the year 2002, corresponding to an overall fertility of 1.849 in the year 2002. Net immigration in 1997 is estimated at 6,200 persons. In the forecast presented this level is maintained until the year 2020.

Less developed countries

For the less developed countries a constant fertility corresponding to the average over the years 1993 to 1996 is assumed, see table 7. Regarding net immigration an assumption of 7,000 persons per year is set up, corresponding to the estimate for the entire year 1997.

5.2 Results

In tables 9 and 10 results from the two main projections are shown.

The group of immigrants are growing older

With respect to the expected age distribution of immigrants from developed countries it is a general feature that they are growing older. This is, among other factors, due to the fact that future net immigration of the younger age groups are not counterbalanced by the factors that there is no increase via live births and that some die over the period. The share of 0-39-year olds decrease by 5,8 percentage points, and the share of older age groups increase correspondingly; 2,3 and 3,5 percentage points for persons aged 40-59 and persons aged 60 years and over, respectively.

Table 9.

Immigrants and descendants from developed countries, analysed by age from 1997 to the year 2020.

Net immigration: 6,200 yearly

Fertility: From 1.744 to 1.849 in the year 2002

	1997	2000	2005	2010	2015	2020	1997	2020
	1 000 persons						pct.	
Immigrants	140	154	176	198	219	238	100.0	100.0
0-6 years	4	3	3	3	3	3	2.7	1.1
7-15 years	8	10	12	11	11	11	5.8	4.7
16-19 years	4	5	6	8	7	7	3.1	3.0
20-29 years	23	24	25	28	32	33	16.3	13.8
30-39 years	27	32	38	41	43	45	19.5	19.0
40-59 years	48	52	59	67	77	87	34.2	36.5
60 years +	26	28	33	40	46	52	18.4	21.9
	pct. of total population							
Immigrants	2.7	2.9	3.2	3.6	3.9	4.3	.	.
0-6 years	0.8	0.6	0.6	0.6	0.6	0.6	.	.
7-15 years	1.6	1.9	1.9	1.8	1.7	1.9	.	.
16-19 years	1.7	2.0	2.6	2.8	2.5	2.4	.	.
20-29 years	3.0	3.4	4.0	4.6	4.6	4.4	.	.
30-39 years	3.4	3.9	4.7	5.6	6.5	7.1	.	.
40-59 years	3.3	3.5	3.8	4.4	5.0	5.6	.	.
60 years +	2.5	2.6	3.0	3.3	3.6	3.9	.	.
	1 000 persons						pct.	
Descendants	18	22	28	36	44	53	100.0	100.0
0-6 years	6	8	9	11	12	13	31.3	23.9
7-15 years	3	4	7	11	13	14	16.8	27.3
16-19 years	1	1	1	3	5	5	7.3	10.4
20-29 years	3	3	3	3	5	9	15.2	17.6
30-39 years	2	2	3	3	3	3	12.9	6.5
40-59 years	2	3	4	4	5	5	11.1	9.8
60 years +	1	1	1	1	2	2	5.3	4.5
	pct. of total population							
Descendants	0.4	0.4	0.5	0.7	0.8	0.9	.	.
0-6 years	1.2	1.5	1.9	2.3	2.7	2.9	.	.
7-15 years	0.6	0.7	1.2	1.7	2.0	2.4	.	.
16-19 years	0.5	0.5	0.6	0.9	1.6	1.9	.	.
20-29 years	0.4	0.4	0.5	0.6	0.8	1.2	.	.
30-39 years	0.3	0.3	0.3	0.4	0.5	0.5	.	.
40-59 years	0.1	0.2	0.2	0.3	0.3	0.3	.	.
60 years +	0.1	0.1	0.1	0.1	0.1	0.2	.	.

Opposing tendencies for persons aged 30-39

Looking at changes in the number of immigrants from developed countries as a percentage of the total population there is only a fall in the group of 0-6-year olds. It is interesting to note that the share of 30-39-year olds will more than double, corresponding to an increase from 3,4 pct. in 1997 to 7,1 pct. in the year 2020. This takes place despite the fact that their share of the total immigrant population from developed countries tend towards a minor fall. This must, of course, be seen on basis of the fact that the future number of persons in this age group for the entire population is expected to fall. For age groups between 7 and 29 years, a similar pattern appears with decreasing shares of the immigrant population and increasing shares of the total population.

The difference in age among descendants aged 7-19

Among descendants from developed countries the age groups 7-15 years and 16-19 years account, generally speaking, for the greatest increases, implying that the shares of these two groups will increase from 24 pct. in 1997 to almost 38 pct. in the year 2020 of the total number of descendants from developed countries. The number of 0-6-year olds will double over the period, but the share accounted for by this age group decreases from almost one-third to less than one-fourth. The overall result for the age group 0-19 years is that their share will increase from 55,4 pct. to 61,6 pct. in the period.

Percentage of the total population

For descendants there is for all age groups an increase in the share of the total population; this is most pronounced for the younger age groups.

Results from the main projection for immigrants and descendants from less developed countries is shown in table 10 below.

Increase in the share of 40-year-olds and older

For immigrants a relative increase in the number of persons over 40 years is most pronounced. Calculating shares of the total population, a trend similar to immigrants from developed countries is seen. Also here the remarkable pattern for the age group 30 to 39 years is seen, where the share of the total population more than doubles, but at the same time their share of the total number of immigrants decline. Calculated as changes in percentage-points the largest increase is seen for the age group 40 to 59 years.

16-29-year olds account for the greatest increase among descendants

The trend for descendants from less developed countries is also here similar to that for developed countries, however, with a slightly different impact on the age structure, implying that descendants in the age groups 16-19 years and 20-29 years will account, in relative terms, for the greatest increase (for developed countries the age groups 7-15 years and 16-19 years accounted for the greatest increase). It is also interesting to note that the share of descendants between 0 and 6 years will be more than halved. In terms of percentages of the total population all age groups experience an increase, especially the age groups between 7 and 29 years.

Table 10.

Immigrants and descendants from less developed countries, analysed by age from 1997 to the year 2020

Net immigration: 7,000 yearly
Fertility: 3.248 constant

	1997	2000	2005	2010	2015	2020	1997	2020
	————— 1 000 persons —————						————— pct. —————	
Immigrants	126	145	177	209	238	267	100.0	100.0
0-6 years	3	4	4	4	4	4	2.6	1.5
7-15 years	14	15	15	15	15	16	10.8	5.8
16-19 years	7	9	10	10	11	11	5.9	4.0
20-29 years	32	33	36	40	42	42	25.1	15.7
30-39 years	36	43	49	51	55	59	28.6	22.0
40-59 years	27	35	52	72	90	104	21.7	38.9
60 years +	7	8	12	16	22	32	5.4	12.1
	————— pct. of total population —————							
Immigrants	2.4	2.7	3.3	3.8	4.3	4.8	.	.
0-6 years	0.7	0.7	0.8	0.8	0.9	0.9	.	.
7-15 years	2.6	2.6	2.4	2.4	2.4	2.6	.	.
16-19 years	3.0	3.8	4.3	3.6	3.6	3.6	.	.
20-29 years	4.2	4.5	5.7	6.5	6.1	5.6	.	.
30-39 years	4.5	5.3	6.1	6.9	8.3	9.2	.	.
40-59 years	1.9	2.3	3.4	4.7	5.8	6.7	.	.
60 years +	0.7	0.8	1.0	1.3	1.8	2.4	.	.
	————— 1 000 persons —————						————— pct. —————	
Descendants	46	61	90	124	162	204	100.0	100.0
0-6 years	26	32	40	46	52	58	57.2	28.4
7-15 years	13	20	34	45	54	63	29.3	30.6
16-19 years	4	4	7	13	19	23	7.8	11.3
20-29 years	2	5	9	14	27	41	5.3	20.2
30-39 years	0	0	1	5	9	14	0.3	7.0
40-59 years	0	0	0	0	1	5	0.2	2.4
60 years +	0	0	0	0	0	0	0.0	0.1
	————— pct. of total population —————							
Descendants	0.9	1.1	1.7	2.3	2.9	3.7	.	.
0-6 years	5.5	6.5	8.1	10.0	12.1	13.4	.	.
7-15 years	2.6	3.6	5.4	6.9	8.5	10.5	.	.
16-19 years	1.4	1.8	2.9	4.8	6.3	7.8	.	.
20-29 years	0.3	0.7	1.4	2.4	3.9	5.5	.	.
30-39 years	0.0	0.0	0.1	0.7	1.3	2.3	.	.
40-59 years	0.0	0.0	0.0	0.0	0.1	0.3	.	.
60 years +	0.0	0.0	0.0	0.0	0.0	0.0	.	.

5.3 The effect of corrections on the number of live births

Correction with respect to immigrant-status of new-born persons

As stated earlier, a projection has been conducted for the purpose of monitoring the effect of corrections on the number of live births incorporated in the main forecasts. The corrections thus established do only have an effect on the future number of descendants. Conducting a projection without incorporating the corrections implies that all live births by immigrant- and descendant-women are considered to be descendants. In table 11 the result from the initial forecast for less developed countries is compared, with and without incorporating the factors of correction.

Table 11

Descendants from less developed countries based on alternative assumptions for immigrant-status for live births from 1997 to the year 2020

	1997	2000	2005	2010	2015	2020
	1 000 persons					
Initial forecast	46	61	90	124	162	204
Trend without correction	46	64	99	142	194	256
	pct. of population					
Initial forecast	0.9	1.1	1.7	2.3	2.9	3.7
Trend without correction	0.9	1.2	1.8	2.6	3.5	4.6

Number of descendants will be almost 52,000 higher

A forecast, which does not take into account, that a share of live births do not become descendants implies that the expected number of descendants increase more than in the initial forecast. Where the number in the initial forecast reached a level of just over 204,000 persons in the year 2020, this will increase to almost 256,000 in an unadjusted forecast. Interpreting this result implies that in the initial forecast at the end of the period of projection, there are almost 52,000 persons in the group of *others* with a mother and/or father who is a Danish citizen born in Denmark.