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How to cite this publication

Please cite the final published version:

Jakobsen, V., & Pedersen, P. J. (2017). Poverty risk among older immigrants in a Scandinavian welfare state. *European Journal of Social Security*, 19(3), 242-262.

<https://doi.org/10.1177/1388262717725937>

Publication metadata

Title:	Poverty risk among older immigrants in a Scandinavian welfare state
Author(s):	Vibeke Jakobsen & Peder J. Pedersen
Journal:	European Journal of Social Security
DOI/Link:	https://doi.org/10.1177/1388262717725937
Document version:	Accepted manuscript (post-print)
Document license:	CC BY-NC-SA

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Poverty risk among older immigrants in a Scandinavian welfare state

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Abstract

The focus of this paper is on poverty among immigrants and refugees aged 60 years and older coming to Denmark from countries outside of the OECD, with an emphasis on immigrants who came as guest workers before 1974, as refugees and as family members and marriage partners – tied movers – to the individuals coming as guest workers and as refugees. A large proportion of people in this group were fairly young at the time of their arrival in Denmark. Guest workers who came before 1974 and refugees and tied movers who arrived in the 1970s and 1980s are now either close to or above the age of 60, with conditional eligibility to a labour market-related early retirement programme or to the State pension. Poverty rates by national background are described using alternative household concepts. A number of background factors with relevance for poverty are summarised. We focus on age, gender, marital status, occupational status at age 55 and duration of residence and find major differences between migrant groups and between immigrants and natives regarding how income is dependent at different ages on market income, pensions and benefits. We also present a number of regressions aiming at explaining differences in the risk of poverty risk in terms of these background factors.

Keywords

immigrants, pension entitlement, old age poverty, family structure

Introduction and motivation

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In the Nordic countries, ambitious welfare programmes go back several decades. One remarkable consequence has been that old age is no longer associated with a high risk of poverty. This is a result of creating a first pillar of the pension system with nearly universal eligibility which effectively keeps people aged 65 years and older above the poverty line. The main question raised in the present study is whether people arriving in recent decades as immigrants from low income countries are at risk of poverty as they become older; more precisely, when they reach 60-74 years of age. We analysed this question in two stages. First, we undertook a descriptive approach by looking at the actual poverty rates among specific immigrant groups. Then, we analysed how the poverty risk among older immigrants correlated with a number of background factors. A further approach relative to our main question involved comparing poverty rates using the conventional family or household definition and poverty rates using an extended family concept defined as the number of people sharing the same dwelling)

Immigrants are a heterogeneous group that includes labour migrants, refugees and tied movers from many different countries. Immigrants from low income countries with different backgrounds have arrived to Denmark in different waves. One group arrived before the guest worker stop in 1973. They were followed by waves of family re-unions in subsequent years. Other major groups of arrivals were people coming as refugees with countries and regions of origin shifting with the outbreak of conflicts in different places. The number of refugees arriving to Denmark increased significantly in the 1980s, but Denmark also received refugees earlier, e.g. from Vietnam in the 1970s. Here too, initial groups arriving as refugees have been followed by tied movers as families became re-united.

In the analyses in this study, we include native Danes and immigrants from four countries: Turkey, Iran, Pakistan and Vietnam. The countries of origin have been selected partly to ensure a sufficient number of individuals for the analyses below and partly to represent typical immigrant groups by time of arrival and background. Immigrants from Turkey and Pakistan were chosen as representing the typical pre-1973 guest worker countries. Immigrants from Iran and Vietnam were chosen as representing refugee countries with people arriving at different times. Refugees from Vietnam had a significantly longer duration of residence than those coming from Iran.

Many immigrants and refugees from low income countries were quite young when they arrived in Denmark. Consequently, the age distribution of this group differs significantly from the distribution

for the native population. To get an idea of the magnitude of the upcoming challenge in the area, Table 1 summarises the most recent data of the distribution using five relevant age intervals for native Danes and for immigrants from Turkey, Iran, Pakistan and Vietnam, and from all non-Western countries.¹ It is clear from Table 1 that the challenge regarding income in old age is increasing in this area as the age gradient for this group is much steeper than it is for the native population. Rather few immigrants are older than 60, but in the coming years and decades the number of immigrants from low income countries aged 60 and older will increase steeply in both absolute and relative terms. The focus below is on income and poverty for immigrants aged 60-74 from Turkey, Iran, Pakistan and Vietnam in 2011 compared with the native population.²

Table 1. Number of native Danes and immigrants from non-Western countries by age group, 1st January 2016.

Age	50-54	55-59	60-64	65-69	70-74
Native Danes	363,957	327,525	313,198	325,534	278,653
Immigrants:					
Turkey	4,044	2,514	1,661	1,238	901
Iran	2,176	2,016	848	372	262
Pakistan	1,003	858	877	807	503
Vietnam	1,107	917	547	291	157
Non-Western countries (total)	28,042	20,092	13,019	8,875	5,523
Percentage of immigrants from Non-Western countries originating in					
Turkey, Iran, Pakistan or Vietnam	29.7	31.4	30.2	30.5	33.0

Source: Statistics Denmark (2016)

Individuals coming to the country as immigrants are expected to be at a higher risk of poverty in old age due to less than full tenure in the labour market and/or a too short duration of residence to be

¹ Table A1 (see Appendix) presents the data by gender for 2011, the most recent year for which we have the full data set for the analyses below.

² About 30 per cent of the 60-74 years old non-Western immigrants are from one of these four countries (see Table 1). We apply Statistics Denmark's classification to define non-Western countries (Statistics Denmark 2015). Western countries are defined as all EU-countries, Norway, Iceland, USA, Canada, Australia, New Zealand, Andorra, Liechtenstein, Monaco, San Marino, Switzerland and the Vatican State. Non-Western countries are defined as all other countries.

eligible for the full amount of disability or State pension. This poverty risk is the main topic in the analyses below. The second section contains an overview of the relevant social security programmes with an emphasis on the special rules that apply to immigrants and refugees, while the third section contains a brief survey of the fairly few studies that have been undertaken in this area. The fourth section describes the data, the procedures for calculating alternative poverty rates and the approach in our analyses. Next, the fifth section describes individual background factors that we expected to be relevant for the level of poverty in different population groups. The sixth section describes the poverty rates and the major differences in the composition of income by age and ethnic group. The seventh section presents the results from a number of estimates using the contributory factors to explain the level of individual poverty risk while the eighth section concludes the paper.

Social security programmes - options for people coming from abroad

Less than full labour market integration implies that immigrants typically accumulate less in employment-related pension programmes. We would therefore expect income from non-employment related social security programmes to be more important in relative terms for older immigrants than for natives in the same age group. In relation to retirement programmes, immigrants are eligible for the different programmes on the same conditions as the native population. The main current programmes are a labour market-related early retirement programme, PEW (*Efterløn*), disability insurance (*Førtidspension*) and retirement or State pension (*Folkepension*).

Eligibility for the PEW programme is an option for individuals aged 60-64 without any medical eligibility criteria, but is conditional on a fairly long tenure in unemployment insurance. Disability insurance is an option for individuals aged between 18 and 64 with eligibility on medical and mixed social and medical criteria. Finally, everybody is in principle eligible for a State pension (*Folkepension*) at the age of 65.

Full eligibility for the State pension is, in principle, conditional on a minimum of 40 years of residence in Denmark between the ages of 15 and 64. Pensioners with less than 40 years of residence receive a *pro-rata* proportion of the pension. Thus, 31 years of Danish residency gives the pensioner access to 31/40 of a full State pension. In addition, eligibility for a proportion of a State Pension is conditional on having spent a minimum of three years in the country. Eligibility for disability insurance is also conditional on a number of years of residence. Recipients of disability insurance who have lived in

Denmark less than 4/5th of the time between the age 15 and reaching the retirement date receive only a proportion of the full disability pension. Citizenship is also required in order to be eligible for a State pension or for disability insurance unless more than 10 years have been spent in the country between the age 15 and the pension age. For the period analysed here, refugees were exempted from the requirements regarding years of residence in Denmark.³

Thus, as far as the PEW program, State pension and disability insurance are concerned, it is possible that immigrants may not have a sufficiently long labour market experience to qualify for PEW or that their period of residence is shorter than required to meet the criteria for disability insurance or State pension. Consequently, there is a higher than expected poverty risk for immigrants and refugees, especially for those aged 60 and over, than for native Danes.

In addition to the social security programmes mentioned above, income after retirement is also affected by the ATP programme – a fairly small, lifelong contribution to income after retirement – which is dependent on labour market experience. Retired immigrants may also receive income from labour market pensions, which are dependent on labour market experience, occupation and employment sector.

Earlier studies

The number of older immigrants from non-Western countries will increase steeply in the coming years. In spite of this, very few studies have been concerned with their prospects concerning income in retirement. General poverty studies have been carried out by Blume *et al.* (2007), Deding *et al.* (2010), Pedersen (2011) and Galloway *et al.* (2015). The general findings of these studies, using data from Scandinavian welfare states, is that there are high poverty rates for immigrants coming from outside the OECD area. The emphasis in these studies is, however, either on the whole group of immigrants or on immigrant children, but not on older immigrants and refugees.

In Sweden, as in Denmark and Norway, the amount of State pension depends on the number of years spent in the country between ages of 16 and 64. Forty or more years of residence qualifies an individual for a full State pension. If the number of years of residence is below 40, the result is, in

³ The legislation was amended in 2011 to ensure that the rules regarding fractional pensions (after a transition period) are also applied for refugees.

principle, a corresponding reduction in State pension. Income in retirement depends on the immigrant's labour market tenure. This factor is dependent on the year of arrival in Sweden. Ekberg and Lindh (2011) and Ekberg (2015) present relative incomes from social security old age pension for immigrants arriving before 1970. Immigration during this period was mainly work-related and the labour market careers of this group of early migrants were about the same as for comparable natives. Consequently, the two groups had about the same amount of social security old age pension. Flood and Mitrut (2010) and Flood (2014) focused on relative income in retirement for immigrants to Sweden from countries outside the OECD area. The income ratios relative to natives depended very much on birth cohorts and on whether the focus was on social security old age pension alone or on all income in retirement. For instance, for immigrant men from the 1940-44 cohorts at age 70, Flood and Mitrut (2010) found a relative income ratio of 0.31 by looking only at social security old age pension and a relative income ratio of 0.58 when all pension incomes are included. Gustafsson *et al.* (2016) work with register data covering the population of Sweden aged 65 years and older as divided into four groups, natives, and immigrants from high, middle and low income countries. For 2007, they report results for the proportions living below 60 per cent of the median, equivalence scale adjusted income for the entire population combined with an asset criterion of household wealth being below 10,000 SEK. The proportion of people who fall below both the income and the asset criterion are 0.8, 3.6, 14.3 and 32.8 per cent, respectively, for the four groups. When Gustafsson *et al.* (2016) apply the income poverty criterion alone, the group differences are much less dramatic, i.e. 10.2, 15.7, 24.0 and 44.1 per cent, respectively. Statistics Sweden (2012) compares summary ratios for the year 2010 for net monthly incomes for men and women, those born abroad and those born in Sweden. For the 68-70 age group the ratio is 0.79 for men and 0.89 for women. More detailed evidence linking relative income and poverty with immigrant status and including country of origin and years since migration is, however, not available from Statistics Sweden (2012).

For Norway, income ratios and poverty rates are available by country of origin and separately for those arriving as immigrants and as refugees. Using the EU poverty line criterion of 60 per cent of the equivalence scale adjusted income, Epland (2013) reports a poverty rate of 31 per cent for all immigrants and descendants in 2011. For immigrants coming from Eastern Europe, Asia, Africa, and Latin America the poverty rate was 35 per cent. Finally, Epland (2013) reports a poverty rate of 43 per cent for those arriving in Norway as refugees in 2011. Data by age are not published. Epland (2013) also reports long-term poverty rates for immigrants and refugees using the EU criterion

separately by the number of years of residence in Norway. For those having spent 10 or more years in Norway, there are still very big differences, ranging from 9.1 per cent for immigrants from the Philippines to 55.9 per cent for immigrants from Somalia, with an average of 22.9 per cent for the non-OECD group of countries of origin.

We emphasise that, regarding the findings using Danish data reported below, we have, so far, been unable to find benchmark information for other countries, including age as well as years of residence and country of origin.

Data and methods

Data

In the description and analysis reported in the sections below, we use longitudinal administrative register data from Statistics Denmark. Our data include information on the total population of individuals who, in 2011, were 50 years old or more over the period 1980-2011. For these individuals, we have information about their spouses, live-in partners, children and the persons who were living in the same household. The data set was constructed by merging information from several databases maintained by Statistics Denmark. We have detailed information on many individual characteristics such as age, gender, year of immigration, year of emigration, country of origin, citizenship, marital status, income and labour market status. Furthermore, the data set makes it possible to identify individuals' children, and eventual partners. We are, therefore, able to combine the information on a given individual with information on members of his or her family (if they were living in Denmark).

In the analyses for 2011, we include native Danes and immigrants from four countries: Turkey, Iran, Pakistan and Vietnam (see Table A1 in the Appendix). We base the definition of immigrants and native Danes on Statistics Denmark's classification of the population into three groups: immigrants, descendants of immigrants and native Danes (Poulsen and Lange, 1998). Immigrants are defined as foreign-born individuals with foreign-born parents or parents with foreign citizenship. Descendants of immigrants are defined as individuals born in Denmark to foreign-born parents or parents with foreign citizenship. Native Danes are defined as individuals born in Denmark and having at least one parent who is not only a Danish citizen but was also born in Denmark.

Calculation of poverty rates

Based on the register data a poverty line is defined here as 50 per cent of the median in the distribution of equivalence scale adjusted disposable income. We use the OECD-modified equivalence scale to adjust household incomes to an individual specific level assigning the weight 1 to the first adult in the household, 0.5 to a second adult and to each child older than 14, and 0.3 to each child, who is 14 years old or younger (Atkinson *et al.*, 1995).⁴ Many recent studies prefer using 60 per cent of the median which of course would push the poverty rates reported below upwards. We have chosen 50 per cent to be in accordance with recommendations from a recent Danish expert committee (Andersen *et al.*, 2013) arguing that the distribution of disposable incomes in Denmark is so relatively compressed that the use of a 60 per cent cut-off point would result in moving many people below the poverty line who would not be considered as poor in the usual understanding of the word.

While few native Danes do live in extended families, this type of family structure is more widespread in some immigrant groups (see e.g. Liversage and Jakobsen, 2016). Sharing expenses in extended families may increase the family member's spending power and reduce the risk of poverty, depending on the nature of the sharing that occurs in the extended household. Therefore, we use two definitions of families in the calculation of poverty rates: a conventional family concept (a nuclear family) and a broader household concept (an extended family). To define a nuclear family, we use the Statistics Denmark family concept (Statistics Denmark, 2013). Here, adult individuals are categorised as belonging to one of two main types of families: (1) singles or (2) couples (either married or cohabitating). Children younger than 25 years old living at home are included in their parent's family unless they are married, cohabiting or have children of their own. If an elderly couple is living together with their 25-year-or older son, the couple is defined as a family and the son is defined as a family of his own, regardless of the fact that they are able to proportion expenses in the same manner as a couple living together with their 20-year-old son. An extended family or a household is defined as people sharing the same dwelling. Here we assume that families sharing a dwelling also are sharing expenses in an egalitarian way. The analyses will reveal the extent to which immigrant families reduce the risk of poverty (intended or unintended) by living in extended families.

The data do not reveal whether co-residence in an extended family is a function of economic necessity or whether it reflects cultural values, especially in some immigrant groups. Recent studies analysing

⁴ It is well known that this equivalence scale implicitly assumes quite high economies of scale for large families. However, in a comprehensive discussion deVos and Zaidi (1997) conclude that the modified OECD scale as a pragmatic choice seems to be a reasonable compromise.

this question are mainly based on US data and show that economic, cultural and health factors all have an impact on co-residence. Pew Research Center (2016) reports that 60.6 million Americans were living in multigenerational households in 2014. There has been a more pronounced increase in the number after the financial crisis. The increase has occurred both among immigrants and natives, but with the highest level in the immigrant group. Elliott *et al.* (2011) also report that co-residence increased over the years 2006-2010, especially in response to unemployment. Dunifon *et al.* (2014) and Pfeiffer *et al.* (2016) both report that economic factors have an impact on the prevalence of co-residence. Gonzales (2007) studied co-residence with Mexican parents aged 65 and older in the USA and found that cultural values were more important than economic factors. Gurak and Kritz (2010) found large differences in co-residence between 11 immigrant groups with income being a less important factor. Smits *et al.* (2010) studied 30-40 year olds living with their parents and found that ‘need of support’ was a significant motive for co-residence. Prickett and Angel (2017) have analysed a panel of older, single immigrants and found that age at immigration and health were strong predictors of co-residence. Finally, Isengard and Szydluk (2012) analysed SHARE data on European countries and found co-residence to be a reaction to economic uncertainty.

For Denmark, as shown below, we find a much higher prevalence of co-residence in some immigrant groups than among natives, but whether this reflects economic necessity or cultural values are questions beyond the present study. In addition, some of the extended households could be groups of people of about the same age living together. However, we do not expect this to be important for immigrant groups. A new study of immigrants from Turkey living in Denmark shows that nearly all the 65-74-year-old immigrants from Turkey who live in extended households are living together with a grown-up son or daughter and perhaps with the son’s/daughter’s spouse and children (Liversage and Jakobsen, 2016).

Regression analyses

In the last part of the paper, we analyse how the poverty risk among older immigrants correlates with a number of background factors using linear probability models.⁵ The background factors are gender, age, family status, duration of residence and labour market status at age 55. The three last background factors are described in the fourth section of this paper. The distribution of age and gender can be found in Table A1 in the Appendix. We estimate two models: one where the calculation of the poverty

⁵ We have also estimated the models using a probit model. The estimation results are, however, very similar.

rate is based on the nuclear family and one where the calculation of the poverty rate is based on the extended family concept.

Background factors

This section contains a brief description of background factors expected to be of relevance for the risk of poverty: family type, duration of residence in Denmark and labour market history in Denmark.

Figures 1a and 1b show the distribution of type of nuclear family for the two age groups: 60-64 and 65-74. The figures show whether the immigrants and natives Danes are living as couples or as a single individual (with or without children younger than 25 living at home). The Iranian immigrants stand out from the other groups by having a higher proportion who are single. Furthermore, women have a higher proportion who are single than men - especially among the 65-74 years old.

Figure 1a. Distribution on type of nuclear family by marital status. Age group: 60-64.

Figure 1b. Distribution on type of nuclear family by marital status. Age group: 65-74.

Source: Own calculations on register data from Statistics Denmark

Figure 2a. Distribution on type of household. **Figure 2b.** Distribution on type of household.

Age group: 60-64.

Age group: 65-74.

Source: Own calculations on register data from Statistics Denmark

The extent to which old immigrants are living in extended families is shown in Figures 2a and 2b. An extended family is defined as a household consisting of at least two nuclear families. Each of the four immigrant groups has a substantially higher proportion living in extended families than native Danes. The proportion living in extended family ranges from 20 to 50 per cent among the 65-74 year-old immigrants – it is lowest among the Iranian immigrants and highest among the Pakistani immigrants. The corresponding proportion for native Danes is 5 per cent.

A prior expectation was that integration into the labour market regarding jobs and earnings would increase with the number of years since entry to the host country. Years of residence in Denmark was expected to be a predictor of poverty in old age as income after reaching pension age depends both on former earnings and on the number of years since entry to the country, which impact the amount received in social security pensions, except for those arriving as refugees.

Table 2 shows the distribution on years of residence in Denmark for 60-64 and 65-74 year-old immigrants. Unfortunately, information on the year of entry is unknown for immigrants who arrived before 1980. Thus, we do not know the precise number of years of residence for people arriving 30 or more years ago. Table 2 shows that very high proportions of the immigrants from Turkey and

Pakistan have stayed in Denmark for 30 years or more: 65-92 per cent of the immigrants from Turkey and 82-94 per cent of the immigrants from Pakistan. The corresponding numbers are 5-18 per cent for immigrants from Iran and 28-54 per cent for immigrants from Vietnam. Finally, it can be seen that 9-28 per cent of the immigrants from Iran and Vietnam have stayed less than 20 years in Denmark. In general, women have stayed fewer years in Denmark than men.

Table 2. Distribution on years since migrations. Age group: 60-64 and 65-74

	60-64 years old				65-74 years old			
	Turkey	Iran	Pakistan	Vietnam	Turkey	Iran	Pakistan	Vietnam
Women:								
0-19	9	29	4	25	8	33	5	28
20-24	16	36	4	20	15	41	4	37
25-29	10	31	5	19	8	20	8	7
30+	65	5	87	36	69	6	82	28
Total	100	100	100	100	100	100	100	100
N	658	173	344	186	806	242	336	195
Men:								
0-19	4	15	3	9	3	20	2	15
20-24	6	35	4	13	3	35	2	26
25-29	6	42	4	24	2	27	2	19
30+	84	7	88	54	92	18	94	40
Total	100	100	100	100	100	100	100	100
N	614	279	506	152	995	245	623	151

Source: Own calculations on register data from Statistics Denmark

Another potential predictor of poverty in older ages is the individual's position relative to the labour market at age 55, i.e. 5 years before potential eligibility for PEW and 10 years before eligibility for State pension at age 65. The distribution by labour market status at age 55 is shown in Figures 3 and 4.⁶ Figure 3 contains a summary picture of labour market status for those aged 60-64 in 2011 when

⁶ People not living in Denmark at age 55 are excluded from Figures 3 and 4. Those who did not live in Denmark at age 55 are, with one exception, less than 5 per cent. The exception are immigrants from Iran, who were 65-74 years old in 2011, 19 per cent of whom were not living in Denmark at age 55.

they were 55 years old during the period 2002-2006. Figure 4 contains a summary of labour market status for those aged 65-74 in 2011 when they were 55 years old during the period 1992-2001. We distinguish among the following labour market statuses at age 55: employed, unemployed, receiving transitional benefits, receiving disability insurance, receiving other benefits and others out of the labor force.

‘Transitional benefits’ was an early retirement programme for older, long-term unemployed individuals, who were members of an unemployment insurance fund. The programme covered the participants until age 60 when they were transferred to the PEW program. It was introduced in 1992 – when Danish unemployment was very high – and entry into the programme was abolished in 1996. Initially, it was aimed at 55–59 year olds. In 1994, it was extended to include long-term unemployed in the 50–54 year old group. Thus, those who were 60-64 years old in 2011 could not have received ‘transitional benefits’ when they were 55, and the higher percentage in the ‘early retirement’ group in Figure 4 compared to Figure 3 can (at least partly) be explained by the existence of the ‘transitional benefit’ programme in the 1990s.

The category ‘other benefits’ includes social assistance (for those who are not registered as unemployed) and sickness benefits. The category ‘others outside the labor force’ consists of individuals who are neither employed nor receiving transfer payments, for example, housewives.

As shown in Figure 3, among those who were aged 60-64 in 2011, there was a very big difference between the employment rates at age 55 for natives and for immigrants. There are, however, also large differences between the immigrant groups. While around 85 per cent of the native men were employed at age 55, around 60 per cent of the men from Pakistan, 50 per cent of the men from Vietnam and 40 per cent of the men from Turkey and Iran were employed at age 55. The native-immigrant gap was even more pronounced for women as 80 per cent of native women and between 15 and 30 per cent of immigrant women were employed at age 55. Looking at the proportion in an early retirement programme (disability insurance) at age 55, the levels were around 20-35 per cent for the four immigrant groups compared to around 10 per cent among the native Danes. Furthermore, around 10-20 per cent of the immigrant men, and 25-30 per cent of the immigrant women were in receipt of ‘other benefits’ at age 55.

Figure 4 shows that employment rates at age 55 were lower for those who were 65-74 years old in 2011 than for those who were 60-64 years old in 2011, especially for immigrants. Among those who were 65-74 years old in 2011, 70-85 per cent of the native Danes, between 25-50 per cent of the immigrant men and around 10 per cent of the immigrant women were employed at age 55. The proportions in an early retirement programme (disability insurance or the transitional benefit programme) at age 55 were around 10 per cent for native Danes, around 50 per cent for the immigrants from Turkey, between 25-35 per cent for the men from Iran, Pakistan and Vietnam and between 35-45 per cent for the women from Iran, Pakistan and Vietnam. Note that transitional benefit seems to be more important for immigrants from Turkey and Pakistan, who typically came to Denmark as labour migrants, than for immigrants from Iran and Vietnam, who typically came to Denmark as refugees. Entry to the transitional benefit programme was dependent on membership of an unemployment insurance fund. The immigrants from Turkey and Pakistan who came before the guest worker stop in 1973 were employed in the first period in Denmark and mostly joined an unemployment insurance fund (see Jakobsen and Liversage, 2016). Finally, the proportion in the category ‘others outside the labour force’ is relatively high among immigrants – especially among women with 20 to 25 per cent in this category.

Overall, the immigrants had much lower employment rates than the native Danes at age 55, and the native-immigrant employment gap was higher for women than for men. Furthermore, it is important to note that there are no systematic differences in the employment rates between the immigrant groups, who primarily consist of labour migrants, and the immigrant groups, who primarily consist of refugees at age 55. For example, among the immigrant men, those from Pakistan had the highest employment rates and those from Turkey the lowest employment rates. Thus, even though the immigrants from Turkey and Pakistan originally came to Denmark as labour migrants in the late 1960s and the early 1970s, they experienced high levels of unemployment in the 1980s and 1990s. Structural changes in the Danish economy during the late 1970s and the 1980s resulted in the disappearance of many of the jobs filled by the guest workers. Furthermore, a large proportion of the women coming as tied movers never entered the labour market in stable jobs (Liversage and Jakobsen 2016).

Figure 3. Distribution by labour market status at age 55 for 60–64 year-olds

Source: Own calculations on register data from Statistics Denmark

Figure 4. Distribution by labour market states at age 55 for 65-74 year-olds

Source: Own calculations on register data from Statistics Denmark

The labour force indicator at age 55 clearly points to the fact that many immigrants from low income countries would not be eligible for PEW during the first half of their 60s and that savings for ATP and labour market pensions are much lower than for native Danes.

After this brief survey of a number of factors with a potential impact on the risk of poverty at older ages, we proceed in the next section to report the poverty rates and in the sixth section to report the results from estimates of the risk of poverty for 60-74-year-old natives and immigrants using the two-family concepts described above.

Poverty rates

Figures 5a and 5b summarise the poverty rates for nuclear families. The poverty rates are shown by age and country of origin for people from the four selected immigrant countries and for natives. We see a significant gap between poverty rates for natives and for immigrants from the four countries, and for the immigrants a steep gradient in poverty rates relative to age. We also see some differences between countries, in particular for the oldest age group. For the 65-74 year olds, immigrants from Pakistan and Turkey have the highest poverty rates and immigrants from Vietnam the lowest.

The corresponding poverty rates for extended families are shown in Figures 6a and 6b. Especially for the 65-74 year old immigrants, poverty rates are much lower (11-13 percentage points lower) when the calculation is based on the extended family compared with the nuclear family. For example, for the 65-74-year-old immigrants from Turkey, the poverty rate is 29 per cent when the calculation is based on the nuclear family and only 16 per cent when the calculation is based on the extended family. For the native Danes, the poverty rate is about 1 per cent irrespective of which family concept we use. Thus, it seems as if the oldest immigrants overcome some of the poverty problems by living in extended families, at least if sharing of resources occurs at a sufficiently high level.

Looking into poverty rates separately by gender, we find some big differences. It is evident from Figures 5b and 6b that big differences exist by gender in the age group 65-74. We find the largest gender gap for immigrants from Turkey where Figure 5b shows a poverty rate of 45 per cent for women and 17 per cent for men. For natives, in contrast, the poverty rate is around 1 per cent for both women and men.

Figure 5a. Poverty rates – nuclear family
Age group: 60-64.

Figure 5b. Poverty rates – nuclear family.
Age group: 65-74.

Source: Own calculations on register data from Statistics Denmark

Figure 6a. Poverty rates – extended family
Age group: 60-64

Figure 6b. Poverty rates – extended family.
Age group: 65-74.

Source: Own calculations on register data from Statistics Denmark

The significant differences in poverty rates by gender for the 65-74 year olds probably reflect large differences in the proportion of people living as single, differences in the duration of residence and a

weaker attachment to the labour market for women. In the fourth section of this paper, we examine how these factors affect the poverty risk.⁷ However, we first analyse the financial situation of the older immigrants in greater detail. Tables 3 and 4 show both the annual average income and the components of this income for the four groups of immigrants and the native Danes. The relative importance of the different sources of income will give some indication of why the poverty rates are higher for immigrants. For instance, the significant differences in labour market status in the mid-50s, which can be seen in Figures 3 and 4 above, are clearly reflected in the distribution on income sources shown in Tables 3 and 4.

For the 60-64 year olds, we distinguish between five sources of income: market income, disability pensions, other pensions, PEW, and welfare benefits (see Table 3). For the 65-74 year olds, we distinguish between four sources of income: market income, social security pensions, other pensions, and welfare benefits (see Table 4).

⁷ Studies based on survey data have shown that educational level is typically lower in non-Western immigrant groups than among native Danes (see Mogensen and Matthiessen 2000), and education is another factor that may affect the risk of poverty. Unfortunately, for the most of the older immigrants, the register data do not include information on their education. Nevertheless, we have calculated the poverty rate for 65-74 year-old low-skilled Danes, who have 7 years of schooling at most, and the poverty rates are only slightly higher for this group than for the total population of native Danes in the age group.

Table 3. Proportion of income from market income, disability pensions, other pensions, PEW, welfare benefits, and mean income, persons aged 60-64, 2011. (per cent and DKK)

	Market	Disability pension	Other pensions	PEW	Welfare benefits	Total	Mean income
Men:							
Native							
Danes	72.8	5.6	6.9	11.0	3.7	100	381,510
Turkey	23.5	29.7	2.1	31.7	13.0	100	186,724
Iran	39.6	40.3	0.9	3.1	16.0	100	209,810
Pakistan	54.8	16.2	1.1	17.2	10.7	100	240,385
Vietnam	42.3	31.5	1.7	13.2	11.3	100	220,059
Women:							
Native							
Danes	57.0	10.5	9.7	19.6	3.1	100	274,042
Turkey	10.0	50.9	0.8	20.4	17.9	100	136,487
Iran	27.0	51.1	0.4	1.6	20.0	100	186,629
Pakistan	18.8	40.0	1.9	20.0	19.4	100	148,877
Vietnam	26.4	41.4	0.7	13.7	17.8	100	164,826

Source: Own calculations on register data from Statistics Denmark

Table 4. Proportion of income from market income, State pension, other pensions, welfare benefits, and mean income, persons aged 65-74 years old, 2011. (Per cent and DKK)

	Market	State pension	Other pensions	Welfare benefits	Total	Mean income
Men:						
Native						
Danes	32.9	31.6	33.1	2.4	100	279,788
Turkey	5.3	69.9	13.1	11.7	100	137,607
Iran	17.7	59.1	9.9	13.3	100	166,688
Pakistan	25.9	52.7	13.3	8.1	100	160,846
Vietnam	4.1	76.5	7.5	11.9	100	135,174
Women:						
Native						
Danes	16.5	49.3	30.8	3.4	100	200,478
Turkey	1.6	79.7	5.7	13.0	100	90,999
Iran	14.6	62.0	2.3	21.1	100	138,780
Pakistan	0.6	78.5	11.5	9.4	100	99,650
Vietnam	0.5	83.0	3.1	13.5	100	124,652

Source: Own calculations on register data from Statistics Denmark

The average annual income is significantly lower for immigrants than for native Danes – the average income is especially low for immigrants from Turkey and Vietnam. The tables also illustrate that the proportion of income from the market and other pensions is markedly lower for immigrants than for native Danes. Thus, for the 65-74 year olds, around 5 per cent of the income of immigrant men from Turkey and Vietnam is market income, while the corresponding proportion for native Danish men is 33 per cent. As a reflection of this, the immigrants in both age groups are more dependent on welfare benefits, disability insurance or State pension than native Danes. In fact, the proportion of income from State pensions is 60-80 per cent for 65-74-year-old immigrant men and only 30 per cent for 65-74 years old native Danish men, cf. Tables 3 and 4 above. The immigrant women are even more dependent on welfare benefits and State pensions than the men.

Although the 65-74-year-old immigrants from Turkey and Pakistan are more dependent on State pensions in relative terms than native Danes in the same age group, they do, on average, receive a lower absolute amount in pension (for those who receive a State pension); i.e. on average, immigrants from Turkey and Pakistan receive 87,000 DKK while native Danes received 97,000 DKK from their State pension in 2011. The immigrants from Iran and Vietnam received, on average, around 107,000 DKK in State pension – reflecting the different set of pension eligibility rules for immigrants arriving as refugees.

Analyses

In Tables 5 and 6 below, we present the results from two linear probability models, including a number of potential determinants for being below the 50 per cent poverty line in 2011. Only immigrants from the four selected countries and native Danes who were living in Denmark at age 55 are included in the calculations.

Table 5 shows the estimation results for the model where the calculation of the poverty risk is based on the nuclear family. Looking at the importance of gender, positive significance is found for women from Turkey, Iran and Pakistan and negative significance for native Danish women, when other relevant background factors as family status and previous labour market status are controlled for. Being single increases the risk of poverty in all five groups. Regarding age, we find completely different profiles for immigrants from the two guest worker countries, Turkey and Pakistan, relative to Danish natives. With 65-69 year olds as a reference group, the poverty risk is significantly lower for 60-64-year-old immigrants many of whom were eligible for PEW or DI. After the State pension age of 65, the poverty risk increases in contrast to the case for native Danes. For immigrants from the two refugee countries, Iran and Vietnam, there is no significant relation between age and poverty risk. This is probably because they are exempt from the fractional pension rule applied for immigrants who are not refugees. The poverty risk is higher for immigrants from Turkey and Pakistan with less than 30 years of residence and for those from Vietnam with less than 20 years of residence. For immigrants from Iran – most of whom arrived later – duration of residence had no significant impact. The eventual impact of occupation at age 55 is measured against being employed as a wage earner or in self-employment. Being unemployed at 55 increases the poverty risk significantly for immigrants from Turkey. Receiving disability insurance or other social benefits increases the poverty risk significantly for immigrants from Turkey and Pakistan (see also the relative importance of these two

income components in Table 3). Finally, being out of the labour force at age 55 significantly increases the poverty risk for all five groups.

Table 6 shows the estimation results for the model where the calculation of the poverty rate is based on the extended family. The results are, in general, very similar to the results in Table 5, but the number of significant coefficients is smaller. The results in Table 6 confirm the descriptive findings, i.e. living in a household consisting of more than one nuclear family reduces the risk of poverty. For immigrants 70-74 years old, we still find a significantly higher poverty risk for immigrants from Turkey and Pakistan. For native Danes, we find a higher poverty risk for 60-74 year olds who at 55 were in states other than being employed as a wage earner or in self-employment.

Table 5. Linear probability models: the incidence of poverty – nuclear family. Immigrants from four countries of origin and native Danes. 60-74 years old. 2011.

	Turkey	Iran	Pakistan	Vietnam	Denmark
Gender					
Men	Ref.	Ref.	Ref.	Ref.	Ref.
Women	0.061*** (0.015)	0.053* (0.024)	0.046* (0.020)	0.019 (0.024)	-0.005*** (0.000)
Family status					
Couple	Ref.	Ref.	Ref.	Ref.	Ref.
Single	0.190*** (0.016)	0.101*** (0.023)	0.149*** (0.021)	0.107*** (0.024)	0.025*** (0.000)
Age					
60-64 years old	-0.141*** (0.016)	-0.022 (0.027)	-0.071*** (0.021)	-0.066* (0.028)	0.003*** (0.000)
65-69 years old	Ref.	Ref.	Ref.	Ref.	Ref.
70-74 years old	0.129*** (0.019)	-0.054 (0.040)	0.208*** (0.026)	-0.042 (0.036)	-0.001*** (0.000)
Duration of residence					
0-19 years in Denmark	0.215*** (0.036)	0.054 (0.051)	0.164* (0.064)	0.359*** (0.035)	
20-29 years in Denmark	0.148***	0.038	0.114***	0.000	

	(0.020)	(0.041)	(0.033)	(0.025)	
30+ years in Denmark	Ref.	Ref.	Ref.	Ref.	
Labour market status at age 55					
Employed	Ref.	Ref.	Ref.	Ref.	Ref.
Unemployed	0.074**	0.073	0.043	0.030	0.005***
	(0.024)	(0.050)	(0.031)	(0.043)	(0.001)
Transitional benefits	0.024	0.076	0.034	0.132	0.009***
	(0.024)	(0.152)	(0.034)	(0.074)	(0.001)
Disability insurance	0.085***	-0.057	0.065*	-0.064*	-0.006***
	(0.020)	(0.032)	(0.026)	(0.031)	(0.000)
Other benefits	0.076**	0.045	0.093**	-0.001	0.025***
	(0.024)	(0.035)	(0.030)	(0.036)	(0.001)
Other out of labour force	0.184***	0.268***	0.186***	0.097*	0.041***
	(0.029)	(0.046)	(0.035)	(0.046)	(0.001)
Constant	0.071***	0.016	0.069***	0.058	0.005***
	(0.018)	(0.043)	(0.019)	(0.033)	(0.000)
R^2	0.192	0.111	0.159	0.267	0.016
Observations	2971	826	1716	659	859653

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Source: Own calculations on register data from Statistics Denmark

Table 6. Linear probability models: the incidence of poverty – extended family. Immigrants from four countries of origin and native Danes. 60-74 years old. 2011.

	Turkey	Iran	Pakistan	Vietnam	Denmark
Gender					
Men	Ref.	Ref.	Ref.	Ref.	Ref.
Women	0.044***	0.031	-0.004	-0.014	-0.003***
	(0.013)	(0.023)	(0.019)	(0.018)	(0.000)
Family status					
Couple	Ref.	Ref.	Ref.	Ref.	Ref.

Single	0.123*** (0.017)	0.083*** (0.024)	0.034 (0.026)	0.070** (0.023)	0.019*** (0.000)
More than on family	-0.041** (0.013)	0.001 (0.032)	-0.040* (0.017)	-0.068*** (0.019)	0.008*** (0.000)
Age					
60-64 years old	-0.080*** (0.014)	-0.013 (0.025)	-0.014 (0.018)	-0.013 (0.021)	0.003*** (0.000)
65-69 years old	Ref.	Ref.	Ref.	Ref.	Ref.
70-74 years old	0.070*** (0.016)	-0.060 (0.037)	0.120*** (0.023)	0.016 (0.028)	-0.001** (0.000)
Duration of residence					
0-19 years in Denmark	0.157*** (0.030)	-0.023 (0.060)	0.102 (0.055)	0.170*** (0.027)	
20-29 years in Denmark	0.007 (0.012)	-0.037 (0.053)	-0.018 (0.017)	0.004 (0.019)	
30+ years in Denmark	Ref.	Ref.	Ref.	Ref.	
Labour market status at age 55					
Employed	Ref.	Ref.	Ref.	Ref.	Ref.
Unemployed	0.032 (0.020)	0.089 (0.046)	0.032 (0.028)	0.034 (0.033)	0.004*** (0.001)
Transitional benefit	-0.026 (0.020)	0.065 (0.141)	-0.008 (0.030)	0.039 (0.058)	0.007*** (0.001)
Disability insurance	0.055*** (0.016)	-0.030 (0.029)	0.030 (0.023)	-0.022 (0.024)	-0.006*** (0.000)
Other benefits	0.057** (0.020)	0.058 (0.032)	0.072** (0.027)	0.024 (0.027)	0.019*** (0.001)
Others out of labour force	0.077** (0.024)	0.236*** (0.042)	0.132*** (0.031)	0.083* (0.035)	0.033*** (0.001)
Constant	0.065*** (0.018)	0.074 (0.057)	0.100*** (0.024)	0.030 (0.026)	0.004*** (0.000)
R^2	0.093	0.083	0.053	0.155	0.011

Observations	2924	809	1662	650	847746
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Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Own calculations on register data from Statistics Denmark

Conclusions

Many immigrants from low income countries came to Denmark at young ages either as guest workers before 1973, as refugees or as tied movers in relation to family re-unification. Nevertheless, soon many individuals in these groups aged into their 60s and 70s. In relative terms, the increase in those aged 60 years and older is higher than for native Danes. The focus in this article has been on the risk of poverty in relative terms for this group of immigrants compared with that for native Danes. The challenge around ageing among immigrants and refugees coming from low income countries is the fact that the very comprehensive set of retirement programmes in Denmark is primarily designed to cover people with a background in dual earner families, typically with long tenure in the labour force and with fairly few having spent major proportions of their active years in long-term sickness or disability.

Furthermore, in many cases immigrants and refugees do not have a sufficiently long duration of residence to qualify to be fully covered by social security programmes in old age. At the same time, imperfect integration into the labour force has meant much lower employment rates than among natives. Moreover, big differences exist regarding employment rates between the immigrant groups by country of origin. Consequently, we find very high current relative poverty rates for older immigrants in a setting where old age is no longer a poverty risk among native Danes.

In estimations of the determinants of risk of poverty for immigrants and native Danes in 2011, among those who were in Denmark at age 55, we found that less than 20 years of residence in Denmark increases the poverty risk. Increasing age implies a higher poverty risk for immigrants, in contrast to the situation for natives. Being single implies a more pronounced and higher risk of poverty risk as well. Finally, for those who are outside the labour force at age 55, the poverty risk is significantly higher in old age. The estimations for poverty risk were made using both a conventional nuclear family concept and an extended family concept. We find in the descriptive analysis that the poverty risk is lower among those living in extended families. In the regressions, we find a smaller impact of

earlier labour market status on poverty when the extended family concept is used. The interpretation of this is, however, dependent on assuming that expenses in the family are distributed in an egalitarian way.

Acknowledgements

We are grateful for very useful comments and suggestions from the editors and from two referees. We thank Tone Fløtten for very useful comments to an earlier version of the paper.

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Appendix

Table A1. The number of native Danes and Immigrants by age groups, 2011.

	50-54	55-59	60-64	65-74	75+
All:					
Native Danes	336,093	326,606	330,502	543,835	382,739
Immigrants:					
Turkey	2,747	2,055	1,272	1,801	598
Iran	2,223	1,025	452	487	321
Pakistan	835	943	850	959	210
Vietnam	973	625	338	346	367
Men:					
Native Danes	168,303	163,039	163,524	263,102	153,740
Immigrants:					

Turkey	1,484	1,135	614	995	314
Iran	1,623	659	279	245	152
Pakistan	433	382	506	623	138
Vietnam	539	296	152	151	158
Women:					
Native Danes	167,790	163,567	166,978	280,733	228,999
Immigrants:					
Turkey	1,263	920	658	806	284
Iran	600	366	173	242	169
Pakistan	402	561	344	336	72
Vietnam	434	329	186	195	209

Source: Own calculations on register data from Statistics Denmark